

TREE AND SHRUB INSECT CONTROL

The following table provides tree and shrub insect control recommendations with pesticides for use by the homeowner (marked with an *) and with pesticides for use by licensed applicators only.

All chemical information provided below is given with the understanding that no endorsement of named products is intended, nor is criticism implied of similar products that are not mentioned. Individuals who use pesticides are responsible for ensuring that the intended use complies with current regulations and conforms to the product label. Before purchasing or using any pesticide, always read and carefully follow the label directions

Insecticides listed below are identified by common chemical name. A trade name in parentheses may also be listed as a convenience for the reader. Additional trade names that may be available to homeowners are listed in the HOMEOWNER INSECTICIDE PRODUCT LIST beginning on page 233.

Insects	Insecticide	Amount of Formulation per Gallon of Spray	Amount per 100 Gallons of Water	Minimum Interval Between Application and Reentry	Comments/Precautions
Adelgid	acetamiprid (TriStar)	Follow label directions	Follow label directions	12 hours	Not for homeowner use.
	*horticultural oil (Sunspray Ultra-Fine Spray Oil) 98.8 EC		2-3 gal (winter) 1-2 gal (summer)	4 hours	
	imidacloprid				
	*(Merit) 75 WP	---	---	Not for agricultural use	1.6 oz packet/300 gallons.
	(Marathon) 60 WP	---	---	12 hours	Follow label directions.
	(Marathon II)	---	1.7 fl oz	12 hours	Not labeled for landscape use.
	soap			12 hours	
(M-Pede) 49 EC	1 1/4-2 1/2 oz	1-2 gal			
*(Olympic Insecticidal) 49.5 EC	2 1/2 oz	2 gal			
thiamethoxam (Flagship)	---	Follow label directions	12 hours	Labeled for hemlock woolly adelgid only. Not for landscape use.	
Aphid	acephate (various brands and formulations, some suitable for *homeowner use)	Follow label directions	Follow label directions	24 hours	Apply over pots at 0.4 lb/1,000 square feet.
	acetamiprid (TriStar) 70 WSP	---	1 pack	24 hours	Not for homeowner use.
	azadirachtin (Azatrol EC, Azatin XL)	Follow label directions	Follow label directions	4 hours	
	<i>Beauveria bassiana</i>				
	(BotaniGard) 22 WP	2 tsp	0.5-1 lb	4 hours	Three to five sprays needed for adequate control.
	(BotaniGard) ES	1-2 tsp	1 pt-1 qt	4 hours	
	bifenthrin (Talstar)				
	10 WP	1-5 tsp	6.4-32 oz	Follow label directions	
	7.9 F	1 1/2-3 tsp	5-10 oz	Not for agricultural use	
	clothianidin (Celero)	Follow label directions	Follow label directions	12 hours	Follow label directions
	cyfluthrin (Decathlon) 20 WP	1/4 tsp	9 tbsp	Follow label directions	
	fluvalinate (Mavrik) 22.3 EC	1/8-5/8 tsp	2-10 fl oz	Follow label directions	
*horticultural oil					
(Sunspray) 11E		2 gal	4 hours	Dormant application only.	
(Ultra-Fine)		Follow label directions	4 hours	Dormant or summer application.	

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Insects	Insecticide	Amount of Formulation per Gallon of Spray	Amount per 100 Gallons of Water	Minimum Interval Between Application and Reentry	Comments/Precautions	
Aphid	imidacloprid *(Merit) 75 WP (Marathon) 1G 60 WP (Marathon II)	--- --- --- ---	--- --- --- 1.7 fl oz	Not for agricultural use 12 hours 12 hours 12 hours	1.6 oz packet/300 gallon. 9-15 oz/1,000 sq ft. Follow label directions.	
	malathion *57 EC *25 WP *4D, 5D	2 tsp 2.5 tbsp	2 pt 2 1/2 lb	Follow label directions	Cover thoroughly.	
	neem oil (Neemix) 0.25 (Neemix) 4.5 (Triact) 90 EC	1 1/3-2 2/3 oz	0.5-2.0 gal/acre 5-7 oz/acre 1-2 gal	4 hours 12 hours 4 hours	Keep agitated while spraying.	
	permethrin (Astro) 36.8 EC	1/4-1/2 tsp	4-8 oz	24 hours		
	pymetrozine (Endeavor)	---	2.5-5.0 oz	12 hours		
	*pyrethrins (Pyrenone) 6 EC	1/8-1/2 tsp	2-12 fl oz	Follow label directions		
	pyriproxyfen (Distance) 11.2	1/3-2/3 tsp	6-12 oz	12 hours	Suppression only.	
	*Soap (M-Pede) 49 EC *(Olympic Insecticidal) 25% EC *(Olympic Insecticidal) 49.5 EC	2 1/2 oz 2 1/2-5 oz 2 1/2 oz	7 1/2 qt --- 2 gal	12 hours Follow label directions 12 hours		
	thiamethoxam (Flagship)	---	Follow label directions	12 hours	Not for landscape use.	
	Armored Scale	acephate (various brands and formulations, some suitable for *homeowner use)	Follow label directions	Follow label directions	24 hours	
		acetamiprid (TriStar)	Follow label directions	Follow label directions	12 hours	Not for homeowner use.
		azadirachtin (Azatrol EC)	Follow label directions	Follow label directions	4 hours	
		buprofezin (Talus)	---	Follow label directions	12 hours	
carbaryl *(Sevin) 50 WP *(Sevin) 80 SP		2 tbsp 1 1/4 tbsp	2 lb 1 1/4 lb	Follow label directions		
cyfluthrin (Decathlon) 20 WP		1/4 tsp	9 tbsp	Follow label directions	Two to 4 packets per 100 gal of spray.	

*Suitable for home use.

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Insects	Insecticide	Amount of Formulation per Gallon of Spray	Amount per 100 Gallons of Water	Minimum Interval Between Application and Reentry	Comments/Precautions
Armored Scale (cont.)	dinotefuran (Safari)	Follow label directions	Follow label directions	12 hours	Follow label directions.
	*horticultural oil (Sunspray) 11E (Ultra-Fine)		2 gal Follow label directions	4 hours 4 hours	Dormant application only. Dormant or summer application.
	*malathion 57 EC 25 WP	2 tsp 1-3 tbsp	1 1/2-4 pt 2-6 lb	Follow label directions	
	neem oil (Triact) 90 EC	1 1/3-2 2/3 oz	1-2 gal	4 hours	Keep agitated while spraying.
	*Soap (M-Pede) 49 EC	1 1/4-2 1/2 oz	1-2 gal	12 hours	
	*(Olympic Insecticidal) 25% EC *(Olympic Insecticidal) 49.5 EC	2 1/2-5 oz 2 1/2 oz	--- 2 gal	Follow label directions 12 hours	
Armyworm	acephate (various brands and formulations, some suitable for *homeowner use)	Follow label directions	Follow label directions	24 hours	
	azadirachtin (Azatrol EC, Azatin XL)	Follow label directions	Follow label directions	4 hours	Follow label directions.
	<i>Bacillus thuringiensis kurstaki</i> *(BiobitHP) *(Dipel) *(Foray)		Follow label directions	4 hours	
	cyfluthrin (Decathlon) 20 WP	1/4 tsp	6 tbsp	Follow label directions	
	fluvalinate (Mavrik) 22.3 F	1/8-5/8 tsp	2-10 fl oz	Follow label directions	
	*horticultural oil (Sunspray) 11E (Ultra-Fine)		2 gal Follow label directions	4 hours 4 hours	Dormant application only. Dormant or summer application.
	novaluron (Pedestal)	Follow label directions	Follow label directions	12 hours	Follow label directions.
	*pyrethrins (Pyrenone) 6 EC	1/8-1/2 tsp	2-12 fl oz	Follow label directions	
	spinosad (Conserve SC)	3/8 tsp	6 oz	4 hours	Treat when larvae are small.
	tebufenozide (Confirm)	Follow label directions	Follow label directions	4 hours	Follow label directions.
Ash Border	bifenthrin (Onyx)	Follow label directions	Follow label directions	Follow label directions	Landscape use only.
	permethrin (Astro) 36.8 EC		1-2 qt	12 hours	

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Insects	Insecticide	Amount of Formulation per Gallon of Spray	Amount per 100 Gallons of Water	Minimum Interval Between Application and Reentry	Comments/Precautions	
Bagworm	acephate (various brands and formulations, some suitable for *homeowner use)	Follow label directions	Follow label directions	24 hours		
	<i>Bacillus thuringiensis kurstaki</i> *(BiobitHP) *(Dipel) *(Foray)		Follow label directions	4 hours		
	bifenthrin (Talstar) 10 WP 7.9 F	1-5 tbsp 1 1/2-3 tsp	6.5-32 oz 5-10 oz	Follow label directions Not for agricultural use		
	carbaryl *(Sevimol 4) 40.4 EC *(Sevin) 50 WP *(Sevin) 80 SP	1 tbsp 2 tbsp 1 1/4 tbsp	1 qt 2 lb 1 1/4 lb	Follow label directions		
	cyfluthrin (Decathlon) 20 WP	1/4 tsp	9 tbsp	Follow label directions		
	*fluvalinate (Mavrik) 22.3 F	1/8-5/8 tsp	2-10 fl oz	Follow label directions		
	malathion *25 WP *57 EC	4 tbsp 2 tsp	4 lb 2 pt	Follow label directions		
	spinosad (Conserve SC)	3/8 tsp	6 oz	4 hours	Treat when larvae are small.	
	Bark Beetles	permethrin (Astro, Perm-up, Permethrin Pro) *permethrin		2-5 qt	12 hours	Use Astro and Permethrin Pro for landscapes only. Many formulations of permethrin are available for home use.
		Beetles (various)	*carbaryl (Sevin) 50 WP *soap (Olympic Insecticidal) 25% EC	1 tbsp 2 1/2-5 oz	1 lb ---	Follow label directions Follow label directions
Black Vine Weevil	acephate (various brands and formulations, some suitable for *homeowner use)	Follow label directions	Follow label directions	24 hours		
	<i>Beauveria bassiana</i> (BotaniGard) 22 WP (BotaniGard) ES		0.5-2 lb 1 pt-2 qt	4 hours 4 hours	Best if from unopened container.	
	bifenthrin (Talstar) 10 WP 7.9 F	1-5 tsp 1-2 tbsp	6.4-32 oz 6.4-32 oz	Follow label directions Not for agricultural use		

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Black Vine Weevil (cont.)	fluvalinate (Mavrik) *22.3 F	1/8-5/8 tsp	2-10 fl oz	Follow label directions	
	imidacloprid *(Merit) (Marathon)		Follow label directions	Not for agricultural use 12 hours	
Blister Beetle	*carbaryl	2 tbsp	2 lb	Follow label directions	
	*pyrethrins (X-clude) 0.3 A			Follow label directions	Spray when air is still; 5-10 seconds/100 sq ft.
Borer (various)	bifenthrin (Onyx)	Follow label directions	Follow label directions	Follow label directions	Landscape use only.
	permethrin (Astro, Perm-up, Permethrin Pro) *permethrin		2-5 qt	12 hours	Use Astro and Permethrin Pro for landscapes only. Many formulations of permethrin are available for home use.
Brown Soft Scale	bifenthrin (Talstar) 10 WP	1-5 tsp	6.4-32 oz	Follow label directions	
	7.9 F	1-2 tbsp	10-20 oz	Not for agricultural use	
	buprofezin (Talus)	---	Follow label directions	12 hours	
	imidacloprid *(Merit) (Marathon)		Follow label directions	Not for agricultural use 12 hours	
	thiamethoxam (Flagship)	---	Follow label directions	12 hours	Not for landscape use.
Budworm	acephate (various brands and formulations, some suitable for *homeowner use)	Follow label directions	Follow label directions	24 hours	
	<i>Bacillus thuringiensis kurstaki</i> * (Dipel)	Follow label directions	Follow label directions	4 hours	Follow label directions.
	bifenthrin (Talstar) 7.9 F	1-2 tsp	10-20 oz	Not for agricultural use	
	cyfluthrin (Decathlon) 20 WP	1/4 tsp	6 tbsp	Follow label directions	
	novaluron (Pedestal)	Follow label directions	Follow label directions	12 hours	Follow label directions.
	*pyrethrins (Pyrenone) 6 EC	1/8-1/2 tsp	2-10 fl oz	Follow label directions	
	spinosad (Conserve SC)	3/8 tsp	6 oz	4 hours	Treat when larvae are small.
	tebufenozide (Confirm)	Follow label directions	Follow label directions	4 hours	Follow label directions.

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Insects	Insecticide	Amount of Formulation per Gallon of Spray	Amount per 100 Gallons of Water	Minimum Interval Between Application and Reentry	Comments/Precautions	
Cankerworm	acephate (various brands and formulations, some suitable for *homeowner use)	Follow label directions	Follow label directions	24 hours		
	<i>Bacillus thuringiensis kurstaki</i> *(BiobitHP) *(Dipel) *(Foray)		Follow label directions	4 hours		
	carbaryl (Sevin) *50 WP 80 SP *(Sevimol) 40.4 EC	2 tbsp 1 1/4 tbsp 1 tbsp	2 lb 1/2-1 lb 1 qt		Follow label directions	
	cyfluthrin (Decathlon) 20 WP	1/4 tsp	6 tbsp		Follow label directions	
	fluvalinate (Mavrik) 22.3 F	1/8-5/8 tsp	2-10 fl oz		Follow label directions	Also labeled as a dip.
	novaluron (Pedestal)	Follow label directions	Follow label directions		12 hours	Follow label directions.
	spinosad (Conserve)	3/8 tsp	6 oz		4 hours	
	tebufenozide (Confirm)	Follow label directions	Follow label directions		4 hours	Follow label directions.
Carpenter Ant	permethrin (Astro) 36.8 EC	1/4-1/2 tsp	4-8 oz		24 hours	
	*pyrethrins (Pyrenone) 6 EC	1/8-1/2 tsp	2-12 fl oz		Follow label directions	
Carpenterworm	<p>Carpenterworm larvae are difficult to control once they are within the tree. Injected insecticides may provide some control of larvae. Injections of insect-attacking nematodes (<i>Steinernema carpocapsae</i>) into carpenterworm tunnels have been shown to be somewhat effective in controlling the larvae. Very few insecticide products are labeled specifically for carpenterworms. Homeowner-type insecticides labeled for borer control (bark treatments) on ornamental trees include some formulations of carbaryl and permethrin. Additional formulations containing bifenthrin, carbaryl, cyhalothrin, cypermethrin, lambda-cyhalothrin and permethrin are available for professional use. Insecticide formulations containing abamectin, acephate, cyfluthrin, cyhalothrin, cypermethrin, dicrotophos, fenvalerate, imidacloprid, <i>Metarhizium anisopliae</i> (a fungus), oxydemeton-methyl and permethrin are labeled for injection treatments on ornamental trees. Most of these are intended for use by professional pest control operators and may require special equipment to be used. Not all formulations containing the above active ingredients are suitable for use on trees. Before purchasing or applying any insecticide, check the label to be sure the tree you want to treat is listed or that the product is labeled for use on ornamental shade trees in general. Some products may be restricted-use pesticides, which can be purchased and applied only by licensed pesticide applicators.</p>					
Case Bearer	acephate (various brands and formulations, some suitable for *homeowner use)	Follow label directions	Follow label directions		24 hours	
	cyfluthrin (Decathlon) 20 WP	1/4 tsp	9 tbsp		Follow label directions	

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Caterpillar	acephate (various brands and formulations, some suitable for *homeowner use)	Follow label directions	Follow label directions	24 hours	
	<i>Bacillus thuringiensis kurstaki</i> *(Dipel)	Follow label directions	Follow label directions	4 hours	Follow label directions.
	bifenthrin (Talstar) 10 WP	1-5 tsp	6.4-32 oz	Follow label directions	
	7.9 F	1 1/2-3 tsp	5-10 oz	Not for agricultural use	
	fluvalinate (Mavrik) *23 EC	1/6-1/3 tsp	2-5 fl oz	Follow label directions	
	novaluron (Pedestal)	Follow label directions	Follow label directions	12 hours	Follow label directions.
	permethrin (Astro) 36.8 EC	1/4-1/2 tsp	4-8 oz	24 hours	
	*pyrethrins (Pyrenone) 6 EC	1/8-1/2 tsp	2-12 fl oz	Follow label directions	
	*soap (Olympic Insecticidal) 25% EC	2 1/2-5 oz	---	Follow label directions	
spinosad (Conserve SC)	3/8 tsp	6 oz	4 hours		
tebufenozide (Confirm)	Follow label directions	Follow label directions	4 hours	Follow label directions.	
Clover Mite	cyfluthrin (Decathlon) 20 WP	1/4 tsp	9 tbsp	Follow label directions	
Codling Moth	cryolite (Kryocide) 96 WP	1/4-1/2 lb	25-50 lb	Follow label directions	
Cricket	bifenthrin (Talstar) 7.9 F	1-2 tbsp	10-20 oz	Not for agricultural use	
	cyfluthrin (Decathlon) 20 WP	1/4 tsp	6 tbsp	Follow label directions	
	*pyrethrins (Pyrenone) 6 EC	1/8-1/2 tsp	2-12 fl oz	Follow label directions	
	*soap (Olympic Insecticidal) 25% EC	2 1/2-5 oz	---	Follow label directions	
Cucumber Beetle	bifenthrin (Talstar) 10 WP	1-5 tsp	6.4-32 oz	Follow label directions	
	fluvalinate (Mavrik) 23 EC	1/6-1/3 tsp	2-5 fl oz	Follow label directions	
	*pyrethrins (X-clude) 0.3 A (Pyrenone) 6 EC	1/8-1/2 tsp	2-12 fl oz	Follow label directions	Spray when air is still; 5-10 seconds/100 sq ft.
	spinosad (Conserve SC)	3/8 tsp	6 oz	4 hours	

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Insects	Insecticide	Amount of Formulation per Gallon of Spray	Amount per 100 Gallons of Water	Minimum Interval Between Application and Reentry	Comments/Precautions
Cutworm	bifenthrin (Talstar) 10 WP	1-5 tsp	6.4-32 oz	Follow label directions	Treat when larvae are small.
	7.9 F	1 1/2-3 tbsp	10-20 oz	Not for agricultural use	
	cyfluthrin (Decathlon) 20 WP	1/4 tsp	6 tbsp	Follow label directions	Also labeled as a dip.
	fluvalinate (Mavrik) *22.3 F	1/8-5/8 tsp	2-10 fl oz	Follow label directions	
	spinosad (Conserve SC)	Small cutworms: 0.8 fl oz/1,000 sq ft Large cutworms: 1.2 fl oz/1,000 sq ft	Small cutworms: 35 fl oz/acre Large cutworms: 52 fl oz/acre	4 hours	
tebufenozide (Confirm)		Follow label directions	4 hours		
Dipterous Leafminer	imidacloprid *(Merit) (Marathon)		Follow label directions	Not for agricultural use 12 hours	
	spinosad (Conserve SC)	1 1/3 tsp	22 oz	4 hours	Treat when larvae are small.
Eastern Tent Caterpillar	acephate (various brands and formulations, some suitable for *homeowner use)	Follow label directions	Follow label directions	24 hours	
	<i>Bacillus thuringiensis kurstaki</i> * (Dipel)	Follow label directions	Follow label directions	4 hours	Follow label directions.
	bifenthrin (Talstar) 7.9 F	1 1/2-3 tsp	5-10 oz	Not for agricultural use	
	fluvalinate (Mavrik) 22.3 F	1/8-5/8 tsp	2-10 fl oz	Follow label directions	Also labeled as a dip.
	novaluron (Pedestal)			12 hours	Follow label directions.
	*pyrethrins (Pyrenone) 6 EC	1/8-1/2 tsp	2-12 fl oz	Follow label directions	
	spinosad (Conserve SC)	3/8 tsp	6 oz	4 hours	
tebufenozide (Confirm)	Follow label directions	Follow label directions	4 hours	Follow label directions.	
Elm Spanworm	<i>Bacillus thuringiensis kurstaki</i> * (BiobithHP) *(Dipel) *(Foray)		Follow label directions	4 hours	
	cyfluthrin (Decathlon) 20 WP	1/4 tsp	6 tbsp	Follow label directions	
	novaluron (Pedestal)	Follow label directions	Follow label directions	12 hours	Follow label directions.
	spinosad (Conserve)	Follow label directions	Follow label directions	4 hours	Follow label directions.
	tebufenozide (Confirm)	Follow label directions	Follow label directions	4 hours	Follow label directions.

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Insects	Insecticide	Amount of Formulation per Gallon of Spray	Amount per 100 Gallons of Water	Minimum Interval Between Application and Reentry	Comments/Precautions
Eriophyid Mite	abamectin (Avid)	Follow label directions	Follow label directions	12 hours	Follow label directions.
	*horticultural oil (Sunspray Ultra-Fine Spray Oil) 98.8 EC		2-3 gal (winter) 1-2 gal (summer)	4 hours	
Euonymus Scale	buprofezin (Talus)		Follow label directions	12 hours	Dormant application only. Dormant or summer application.
	*horticultural oil (Sunspray) 11E (Ultra-Fine)		2 gal Follow label directions	4 hours 4 hours	
European Red Mite	bifenthrin (Talstar) 7.9 F	1-2 tbsp	10-20 oz	Not for agricultural use	
	fenpropathrin (Tame) 30.9 EC		5 1/3-10 2/3 oz	24 hours	
	*horticultural oil (Sunspray Ultra-Fine Spray Oil) 98.8 EC		2-3 gal (winter) 1-2 gal (summer)	4 hours	
Fall Cankerworm	acephate (various brands and formulations, some suitable for *homeowner use)	Follow label directions	Follow label directions	24 hours	
	<i>Bacillus thuringiensis kurstaki</i> *(BiobitHP) *(Dipel) *(Foray)		Follow label directions	4 hours	
	novaluron (Pedestal)	Follow label directions	Follow label directions	12 hours	
	spinosad (Conserve)	Follow label directions	Follow label directions	4 hours	
	tebufenozide (Confirm)	Follow label directions	Follow label directions	4 hours	
Fall Webworm	acephate (various brands and formulations, some suitable for *homeowner use)	Follow label directions	Follow label directions	24 hours	Webs can be pulled from the tree, and webs and insects destroyed.
	<i>Bacillus thuringiensis kurstaki</i> *(BiobitHP) *(Dipel) *(Foray)		Follow label directions	4 hours	
	bifenthrin (Talstar) 10 WP 7.9 F	1-5 tsp 1 1/2-3 tsp	6.4-32 oz 3-10 oz	Follow label directions Not for agricultural use	
	novaluron (Pedestal)	Follow label directions	Follow label directions	12 hours	

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Fall Webworm	*pyrethrins (Pyrenone) 6 EC	1/8-1/2 tsp	2-12 fl oz	Follow label directions	
	spinosad (Conserve SC)	3/8 tsp	6 oz	4 hours	Treat when larvae are small.
	tebufenozide (Confirm)	Follow label directions	Follow label directions	4 hours	Follow label directions.
Fire Ants (Field-grown woody ornamentals in-field treatment prior to shipment)	Treatment is required to ship containerized or balled plants from quarantined to non-quarantined areas. Also, maintenance of fire ant free status of nurseries in federal imported fire ant quarantine areas requires certain actions. Consult Arkansas Plant Board to determine your nursery's classification and consult USDA Program Aid No. 1822, "Imported Fire Ant 2005: Quarantine Treatments for Nursery Stock and Other Regulated Articles," for all rules and regulations pertaining to the Federal Imported Fire Ant quarantine and treatment requirements. The following insecticides are authorized by USDA for the treatment of regulated articles under the Imported Fire Ant (IFA) quarantine: bifenthrin (Talstar, Bifenthrin Pro) G, F chlorpyrifos (Dursban, Chlorpyrifos) EC, W, G diazinon (Diazinon/D-z-n) WP, EC fenoxycarb (Award) bait fipronil (Chipco Choice, Chipco Top Choice) G hydramethylnon (Amdro Pro, Siege Pro) bait S-methoprene (Extinguish) bait pyriproxyfen (Distance) bait tefluthrin (Fireban) G				
Flea Beetle	bifenthrin (Talstar) 10 WP	1-5 tsp	6.4-32 oz	Follow label directions	Onyx is for landscape use only.
	carbaryl (Sevin) 80 WP			Follow label directions	
	*50 WP	1 1/4 tbsp	1 1/4 lb		
	*40 EC	2 tbsp	2 lb		
		1 tsp	1 qt		
	cyfluthrin (Decathlon) 20 WP	1/4 tsp	9 tbsp	Follow label directions	
	fluvalinate (Mavrik) 22.3 EC	1/8-5/8 tsp	2-10 fl oz	Follow label directions	
	*pyrethrins (X-clude) 0.3 A (Pyrenone) 6 EC	1/8-1/2 tsp	2-12 fl oz	Follow label directions	Spray when air is still; 5-10 seconds/100 sq ft.
	spinosad (Conserve)	Follow label directions	Follow label directions	4 hours	Treat when larvae are small.
Forest Tent Caterpillar	acephate (various brands and formulations, some suitable for *homeowner use)	Follow label directions	Follow label directions	24 hours	
	<i>Bacillus thuringiensis kurstaki</i> *(BiobitHP) *(Dipel) *(Foray)		Follow label directions	4 hours	
	carbaryl (Sevin 4 oil) 49 EC	---	---	Follow label directions	1 quart per acre.
	diflubenzuron (Dimilin) 25 WP			Follow label directions	2-8 oz per acre in 10-200 gal once a year.

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Fungus Gnat	azadirachtin (Azatin XL) 3 EC	2/3-1 tsp	10-16 fl oz	12 hours	Follow label direction.
	bifenthrin (Talstar) 7.9 F	1-2 tbsp	10-20 oz	Not for agricultural use	Follow label direction.
	imidacloprid (Merit)			Follow label directions	
	permethrin (Astro, Perm-up, Permethrin Pro) *permethrin		2-5 qt	12 hours	Use Astro and Permethrin Pro for landscapes only. Many formulations of permethrin are available for home use.
	pyriproxyfen (Distance) 11.2 EC	1/3-2/3 tsp	6-12 oz	12 hours	
	*soap (Olympic Insecticidal) 25% EC	2 1/2-5 oz	---	Follow label directions	
Galls: Nipple and Blister	thiamethoxam (Flagship)	---	Follow label directions	12 hours	Not for landscape use.
Granulate Ambrosia Beetle	permethrin (Astro, Perm-up, Permethrin Pro) *permethrin		2-5 qt	12 hours	Use Astro and Permethrin Pro for landscapes only. Many formulations of permethrin are available for home use.
Grasshopper	acephate (various brands and formulations, some suitable for *homeowner use)	Follow label directions	Follow label directions	24 hours	
	bifenthrin (Talstar) 7.9 F	1-2 tbsp	10-20 oz	Not for agricultural use	
	*carbaryl (Sevin) 5 bait			Follow label directions	20-40 lb per acre.
	cyfluthrin (Decathlon) 20 WP	1/4 tsp	9 tbsp	Follow label directions	
	*soap (Olympic Insecticidal) 49.5 EC	2 1/2 oz	2 gal	12 hours	
Gypsy Moth	Contact the Arkansas State Plant Board, 1 Natural Resources Dr., P.O. Box 1069, Little Rock, AR 72203-1069, Phone 501-225-1598, Fax 501-225-3590.				
Japanese Beetle (adult)	acephate (various brands and formulations, some suitable for *homeowner use)	Follow label directions	Follow label directions	24 hours	
	azadirachtin (Azatrol EC, Azatin XL)	Follow label directions	Follow label directions	4 hours	
	bifenthrin (Talstar)				
	10 WP	1-5 tsp	6.4-32 oz	Follow label directions	
	7.9 F	2-4 tbsp	20-40 oz	Not for agricultural use	
	carbaryl (Sevin)			Follow label directions	Treat as needed.
	*50 WP	2 tbsp	2 lb		
	*80 WP	1 1/4 tbsp	1 1/4 lb		
	*40 EC	1 tbsp	1 qt		

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Insects	Insecticide	Amount of Formulation per Gallon of Spray	Amount per 100 Gallons of Water	Minimum Interval Between Application and Reentry	Comments/Precautions
Japanese Beetle (adult).	cyfluthrin (Decathlon) 20 WP	1/4 tsp	6 tbsp	Follow label directions	
	*malathion 57 EC	1/2 tsp	1 1/2 pt	Follow label directions	
	neem oil (Azatin XL)		Follow label directions	4 hours	
	permethrin (Astro) 36.8 EC	1/4-1/2 tsp	4-8 oz		
	*pyrethrins (X-clude) 0.3 A				Spray when air is still; 5-10 seconds/100 sq. ft.
Japanese Beetle (grubs)	<i>Beauveria bassiana</i> (BotaniGard) ES		0.5-2 qts	4 hours	Best if from unopened container.
	imidacloprid *(Merit) (Marathon)		Follow label directions	Not for agricultural use 12 hours	
	thiamethoxam (Flagship)	---	Follow label directions	12 hours	Not for landscape use.
June Beetle	carbaryl (Sevin) *50 WP	2 tbsp	2 lb	Follow label directions	
	*80 WP	1 1/4 tbsp	1 1/4 lb		
	*40 EC	1 tsp	1 qt		
	cyfluthrin (Decathlon) 20 WP	1 tsp	9 tbsp	Follow label directions	
Juniper Scale	*horticultural oil (Sunspray) 11E (Ultra-Fine)		2 gal Follow label directions	4 hours 4 hours	Dormant application only. Dormant or summer application.
Lace Bug	acephate (various brands and formulations, some suitable for *homeowner use)	Follow label directions	Follow label directions	24 hours	
	<i>Beauveria bassiana</i> (BotaniGard) ES		1 pt-2 qt	4 hours	Best if from unopened container.
	bifenthrin (Talstar) 10 WP	1-5 tsp	6.4-32 oz	Follow label directions	
	7.9 F	1 1/2-3 tsp	5-10 oz	Not for agricultural use	
	carbaryl (Sevin) *50 WP	2 tbsp	2 lb	Follow label directions	
	*80 WP	1 1/4 tbsp	1 1/4 lb		
	cyfluthrin (Decathlon) 20 WP	1/4 tsp	6 tbsp	Follow label directions	
	imidacloprid *(Merit) (Marathon)		Follow label directions	Not for agricultural use 12 hours	

*Suitable for home use.

TREE AND SHRUB INSECT CONTROL

Insects	Insecticide	Amount of Formulation per Gallon of Spray	Amount per 100 Gallons of Water	Minimum Interval Between Application and Reentry	Comments/Precautions
Lace Bug (cont.)	permethrin (Astro, Perm-up, Permethrin Pro) *permethrin		2-5 qt	12 hours	Use Astro and Permethrin Pro for landscapes only. Many formulations of permethrin are available for home use.
	*soap (Olympic Insecticidal) 25% EC 49.5 EC	2 1/2-5 oz 2 1/2 oz	--- 2 gal	Follow label directions 12 hours	
	thiamethoxam (Flagship)	---	Follow label directions	12 hours	Not for landscape use.
Leaf Beetle	acephate (various brands and formulations, some suitable for *homeowner use)	Follow label directions	Follow label directions	24 hours	
	carbaryl (Sevin)		Follow label directions	12 hours	
	imidacloprid (Marathon, Merit)			Follow label directions	
	spinosad (Conserve SC)	3/8 tsp	6 oz	4 hours	
Leafhopper	acephate (various brands and formulations, some suitable for *homeowner use)	Follow label directions	Follow label directions	24 hours	
	acetamiprid (TriStar) 70 WSP	---	2 packs	24 hours	Not for homeowner use.
	azadirachtin (Azatrol EC, Azatin XL)	Follow label directions	Follow label directions	4 hours	
	bifenthrin (Talstar) 10 WP 7.9 F	1-5 tsp 1-2 tbsp	6.4-32 oz 10-20 oz	Follow label directions Not for agricultural use	
	carbaryl (Sevin) *80 WP *50 WP 4 SC	1 1/4 tbsp 2 tbsp 1 tbsp	1 1/4 lb 2 lb 1 qt	Follow label directions	
	cyfluthrin (Decathlon) 20 WP	1/4 tsp	9 tbsp	Follow label directions	
	fluvalinate (Mavrik) 22.3 EC	1/8-5/8 tsp	2-10 fl oz	Follow label directions	
	*imidacloprid (Merit) 75 WP		1-2 pt	Not for agriculture use	
	neem oil (Triact) 90 EC	1 1/3-2 2/3 oz	1-2 gal	4 hours	Keep agitated while spraying.
	permethrin (Astro, Perm-up, Permethrin Pro) *permethrin		2-5 qt	12 hours	Use Astro and Permethrin Pro for landscapes only. Many formulations of permethrin are available for home use.
	*pyrethrins (X-clude) 0.3 A (Pyrenone) 6 EC			Follow label directions	Spray when air is still; 5-10 seconds/100 sq ft.
		1/8-1/2 tsp	2-12 fl oz		

TREE AND SHRUB INSECT CONTROL

Insects	Insecticide	Amount of Formulation per Gallon of Spray	Amount per 100 Gallons of Water	Minimum Interval Between Application and Reentry	Comments/Precautions
Leafhopper	*soap (Olympic Insecticidal) 25% EC 49.5 EC	2 1/2-5 oz 2 1/2 oz	--- 2 gal	Follow label directions 12 hours	
	thiamethoxam (Flagship)	---	Follow label directions	12 hours	Not for landscape use.
Leafminer	abamectin (Avid)	1/4 tsp	4 fl oz	Follow label directions	Do not use on ferns or conifers.
	acephate (various brands and formulations, some suitable for *homeowner use)	Follow label directions	Follow label directions	24 hours	
	acetamiprid (TriStar) 70 WSP	---	2 packs	24 hours	Not for homeowner use.
	azadirachtin (Azatrol EC, Azatin XL)	Follow label directions	Follow label directions	4 hours	
	bifenthrin (Talstar) 10 WP 7.9 F	1-5 tsp 2-4 tbsp	6.4-32 oz 20-40 oz		
	imidacloprid *(Merit) (Marathon)		Follow label directions	Not for agricultural use 12 hours	
	permethrin (Astro, Perm-up, Permethrin Pro) *permethrin		2-5 qt	12 hours	Use Astro and Permethrin Pro for landscapes only. Many formulations of permethrin are available for home use.
	spinosad (Conserve SC)	1 1/3 tsp	22 oz	4 hours	Treat when larvae are small. Dipterous leafminers only.
Leafroller	acephate (various brands and formulations, some suitable for *homeowner use)	Follow label directions	Follow label directions	24 hours	
	azadirachtin (Azatrol EC, Azatin XL)	Follow label directions	Follow label directions	4 hours	
	bifenthrin (Talstar) 10 WP 7.9 F	1-5 tsp 1-2 tbsp	6.4-32 oz 10-20 oz	Follow label directions Not for agricultural use	
	carbaryl (Sevin) *80 WP *50 WP *4 SC	2 tbsp 1 1/4 tbsp 1 tbsp	2 lb 1 1/4 lb 1 qt	Follow label directions Follow label directions Follow label directions	
	cyfluthrin (Decathlon) 20 WP	1/4 tsp	9 tbsp	Follow label directions	
	permethrin (Astro) 36.8 EC	1/4-1/2 tsp	4-8 oz	24 hours	
	*pyrethrins (Pyrenone) 6 EC	1/8-1/2 tsp	2-12 fl oz	Follow label directions	

*Suitable for home use.

TREE AND SHRUB INSECT CONTROL

Insects	Insecticide	Amount of Formulation per Gallon of Spray	Amount per 100 Gallons of Water	Minimum Interval Between Application and Reentry	Comments/Precautions
Leaf-tier	azadirachtin (Azatrol EC, Azatin XL)	Follow label directions	Follow label directions	4 hours	
	*pyrethrins (Pyrenone) 6 EC	1/8-1/2 tsp	2-12 oz	Follow label directions	
	spinosad (Conserve SC)	---	6 oz	4 hours	
Lilac Borer	bifenthrin (Onyx)	Follow label directions	Follow label directions	Follow label directions	Landscape use only.
	permethrin (Astro, Perm-up, Permethrin Pro) *permethrin		2-5 qt	12 hours	Use Astro and Permethrin Pro for landscapes only. Many formulations of permethrin are available for home use.
Looper	azadirachtin (Azatrol EC, Azatin XL)	Follow label directions	Follow label directions	4 hours	
	bifenthrin (Talstar) 10 WP	1-5 tsp	6.4-32 oz	Follow label directions	
	*pyrethrins (Pyrenone) 6 EC	1/8-1/2 tsp	2-12 fl oz	Follow label directions	
Lygus Bug	azadirachtin (Azatrol EC, Azatin XL)	Follow label directions	Follow label directions	4 hours	
	fluvalinate (Mavrik) 22.3 F	1/8-5/8 oz	2-10 fl oz	Follow label directions	
	permethrin (Astro, Perm-up, Permethrin Pro) *permethrin		2-5 qt	12 hours	Use Astro and Permethrin Pro for landscapes only. Many formulations of permethrin are available for home use.
Mealybug	acephate (various brands and formulations, some suitable for *homeowner use)	Follow label directions	Follow label directions	24 hours	
	acetamiprid (TriStar) 70 WSP	---	2 packs	24 hours	Not for homeowner use.
	azadirachtin (Azatrol EC, Azatin XL)	Follow label directions	Follow label directions	4 hours	
	<i>Beauveria bassiana</i> (BotaniGard) 22 WP	2 tsp	0.5-1 lb	4 hours	
	(BotaniGard) ES	1-2 tsp	1 pt-1 qt	4 hours	
	bifenthrin (Talstar) 10 WP	1-5 tsp	6.4-32 oz	Follow label directions	
	7.9 F	1-2 tbsps	10-20 oz	Not for agricultural use	
	carbaryl (Sevin) *80 WP	2 tbsps	2 lb	Follow label directions	
	*50 WP	1 1/4 tbsps	2 1/2 lb		
	* 4 SC	1 tbsps	1 qt		
cyfluthrin (Decathlon) 20 WP	1/4 tsp	6 tbsps	Follow label directions		

TREE AND SHRUB INSECT CONTROL

Insects	Insecticide	Amount of Formulation per Gallon of Spray	Amount per 100 Gallons of Water	Minimum Interval Between Application and Reentry	Comments/Precautions
Mealybug	fluvalinate (Mavrik) 22.3 F	1/8-5/8 tsp	2-10 fl oz	Follow label directions	Also labeled as a dip.
	imidacloprid *(Merit) (Marathon)		Follow label directions	Not for agricultural use 12 hours	
	neem oil (Triact) 90 EC	1 1/3-2 2/3 oz	1-2 gal	4 hours	Keep agitated while spraying.
	permethrin (Astro, Perm-up, Permethrin Pro) *permethrin		2-5 qt	12 hours	Use Astro and Permethrin Pro for landscapes only. Many formulations of permethrin are available for home use.
	*pyrethrins (X-clude) 0.3 A	---	---	Follow label directions	
	*soap (Olympic Insecticidal) 25% EC 49.5 EC	2 1/2-5 oz 2 1/2 oz	--- 2 gal	Follow label directions 12 hours	
	*horticultural oil (Sunspray) 11E (Ultra-Fine)		2 gal Follow label directions	4 hours 4 hours	Dormant application only. Dormant or summer application.
	thiamethoxam (Flagship)	---	Follow label directions	12 hours	Not for landscape use.
Mimosa Webworm	acephate (various brands and formulations, some suitable for *homeowner use)	Follow label directions	Follow label directions	24 hours	
	azadirachtin (Azatrol EC, Azatin XL)	Follow label directions	Follow label directions	4 hours	
	<i>Bacillus thuringiensis kurstaki</i> *(BiobitHP) *(Dipel) *(Foray)		Follow label directions	4 hours	
	*pyrethrins (Pyrenone) 6 EC	1/8-1/2 tsp	2-12 fl oz	Follow label directions	
Oblique-Banded Leafroller	acephate (various brands and formulations, some suitable for *homeowner use)	Follow label directions	Follow label directions	24 hours	
	azadirachtin (Azatrol EC, Azatin XL)	Follow label directions	Follow label directions	4 hours	
Orangestriped Oakworm	acephate (various brands and formulations, some suitable for *homeowner use)	Follow label directions	Follow label directions	24 hours	
	<i>Bacillus thuringiensis</i> (Dipel Pro) 10.3 DF		1/4-1 lb	4 hours	Follow label directions.

*Suitable for home use.

TREE AND SHRUB INSECT CONTROL

Insects	Insecticide	Amount of Formulation per Gallon of Spray	Amount per 100 Gallons of Water	Minimum Interval Between Application and Reentry	Comments/Precautions
Orangestriped Oakworm (cont.)	carrbaryl (Sevin)			Follow label directions	
	cyfluthrin (Decathlon) 20 WP	4 tsp	6 tbsp	Follow label directions	
Oystershell Scale	*horticultural oil 98 EC	8 tsp	2 gal	Follow label directions	
Peach Tree Borer	bifenthrin (Onyx)	Follow label directions	Follow label directions	Follow label directions	Landscape use only.
	*cyfluthrin (Multi-Insect Killer)			Follow label directions	Apply to trunk during moth flight.
	permethrin (Astro, Perm-up, Permethrin Pro) *permethrin		2-5 qt	12 hours	Use Astro and Permethrin Pro for landscapes only. Many formulations of permethrin are available for home use.
Periodical Cicadas	*carbaryl (Sevin) 50 WP	2 tbsp	2 lb	Follow label directions	
	*80 S	1 1/4 tbsp	1 1/4 lb		
Pillbug	bifenthrin (Talstar) 7.9 F	1-2 tsp	10-20 oz	Not for agricultural use	
	cyfluthrin (Decathlon) 20 WP	1/4 tbsp	6 tbsp	Follow label directions	
Pine Needle Scale	soap (M-Pede) 49 EC	1 1/4-2 1/2 oz	1-2 gal	12 hours	
Pine Tip Moth	azadirachtin (Azatrol EC, Azatin XL)	Follow label directions	Follow label directions	4 hours	
Plant Bug	bifenthrin (Talstar) 7.9 F	1 1/2-3 tsp	5-10 oz	Not for agricultural use	
	cyfluthrin (Decathlon) 20 WP	1/4 tsp	9 tbsp	Follow label directions	
	*soap (Olympic Insecticidal) 25% EC	2 1/2-5 oz	---	Follow label directions	
	49.5 EC	2 1/2 oz	2 gal	12 hours	
	thiamethoxam (Flagship)	---	Follow label directions	12 hours	Not for landscape use.
Privet Mite	fluvalinate (Mavrik) 22.3 EC			Follow label directions	
	*horticultural oil (Sunspray) 11E (Ultra-Fine)		2 gal	4 hours	Dormant application only.
			Follow label directions	4 hours	Dormant or summer application.
	*insecticidal soaps			Follow label directions	

TREE AND SHRUB INSECT CONTROL

Insects	Insecticide	Amount of Formulation per Gallon of Spray	Amount per 100 Gallons of Water	Minimum Interval Between Application and Reentry	Comments/Precautions
Psyllid	azadirachtin (Azatrol EC, Azatin XL)	Follow label directions	Follow label directions	4 hours	
	<i>Beauveria bassiana</i> (BotaniGard) ES		1 pt-2 qt	4 hours	
	soap *(Olympic Insecticidal) 49.5 EC (M-Pede) 49 EC	2 1/2 oz 1 1/4-2 1/2 oz	2 gal 1-2 gal	12 hours 12 hours	
Puss Caterpillar	*carbaryl (Sevin) 50 WP	2 tbsp	4 lb	Follow label directions	
	*80 S	1 1/4 tbsp	2 1/2 lb		
	pyrethrins (Pyrenone) 6 EC	1/8-1/2 tsp	2-12 fl oz	Follow label directions	
Redhumped Caterpillar	* <i>Bacillus thuringiensis</i> (Biotrol) 1.52 WP	2-6 tsp	1-3 lb	Follow label directions	
	cyfluthrin (Decathlon) 20 WP	1/4 tsp	6 tbsp	Follow label directions	
Red Spider Mite	azadirachtin (Azatrol EC)	Follow label directions	Follow label directions	4 hours	
	bifenthrin (Onyx)	Follow label directions	Follow label directions	Follow label directions	Landscape use only.
Root Weevil	<i>Beauveria bassiana</i> (BotaniGard) 22 WP		0.5-2 lb	4 hours	Best if from unopened container.
	(BotaniGard) ES		1 pt-2 qt	4 hours	
	permethrin (Astro, Perm-up, Permethrin Pro) *permethrin		2-5 qt	12 hours	Use Astro and Permethrin Pro for landscapes only. Many formulations of permethrin are available for home use.
San Jose Scale	acetamiprid (TriStar) 70 WSP	---	1 pack	24 hours	Not for homeowner use.
	bifenthrin (Onyx)	Follow label directions	Follow label directions	Follow label directions	Landscape use only.
	calcium polysulfide (Lime Sulfur) 29 EC	10-12 gal	13-15 oz	Follow label directions	Use only when plants are completely dormant.
	fenpropathrin (Tame) 30.9 EC	---	5 1/2-10 2/3 oz	24 hours	
Sawfly	acephate (various brands and formulations, some suitable for *homeowner use)	Follow label directions	Follow label directions	24 hours	
	acetamiprid (TriStar) 70 WSP	---	1 pack	24 hours	Not for homeowner use.
	*carbaryl (Sevin) 50 WP	2 tbsp	2 lb	Follow label directions	
	80 WP	1 1/4 tbsp	1 1/4 lb		

*Suitable for home use.

TREE AND SHRUB INSECT CONTROL

Insects	Insecticide	Amount of Formulation per Gallon of Spray	Amount per 100 Gallons of Water	Minimum Interval Between Application and Reentry	Comments/Precautions
Sawfly (cont.)	cyfluthrin (Decathlon) 20 WP	1/4 tsp	6 tbsp	Follow label directions	
	*imidacloprid (Merit) 75 WP			Not for agricultural use	1.6 oz packet/300 gal.
	*soap (Olympic Insecticidal) 49.5 EC	2 1/2 oz	2 gal	12 hours	
	spinosad (Conserve SC)	3/8 tsp	6 oz	4 hours	Treat when larvae are small.
Scale	acephate (various brands and formulations, some suitable for *homeowner use)	Follow label directions	Follow label directions	24 hours	
	acetamiprid (TriStar) 70 WSP	---	2-4 packs	24 hours	Not for homeowner use.
	azadirachtin (Azatrol EC)	Follow label directions	Follow label directions	4 hours	
	bifenthrin (Onyx)	Follow label directions	Follow label directions	Follow label directions	Landscape use only.
	buprofezin (Talus)	---	Follow label directions	12 hours	
	*calcium polysulfide (Lime Sulfur) 30% EC	1 pt	12-12.5 gal	Follow label directions	Dormant applications only.
	*carbaryl (Sevin) 50 WP	2 tbsp	2 lb	Follow label directions	
	80 S	1 1/4 tbsp	1 1/4 lb		
	cyfluthrin (Decathlon) 20 WP	1/4 tsp	9 tbsp	Follow label directions	Two to 4 packets per 100 gal of spray.
	*horticultural oil (Sunspray) 11E (Ultra-Fine)		2 gal	4 hours	Dormant application only.
			Follow label directions	4 hours	Dormant or summer application.
	imidacloprid *(Merit) (Marathon)		Follow label directions	Not for agricultural use 12 hours	
	*malathion 57 EC	2 tsp	1 1/2-4 pt	Follow label directions	
	25 WP	1-3 tbsp	2-6 lb		
	neem oil (Triact) 90 EC	1 1/3-2 2/3 oz	1-2 gal	4 hours	Keep agitated while spraying.
	*soap (Olympic Insecticidal) 25% EC	2 1/2-5 oz	---	Follow label directions	
(Olympic Insecticidal) 49.5 EC	2 1/2 oz	2 gal	12 hours		
(M-Pede) 49 EC	1 1/4-2 1/2 oz	1-2 gal	12 hours		
*horticultural oil + malathion	5 tbsp + 2 tsp	15 pt + 2 pt	Follow label directions		

TREE AND SHRUB INSECT CONTROL

Insects	Insecticide	Amount of Formulation per Gallon of Spray	Amount per 100 Gallons of Water	Minimum Interval Between Application and Reentry	Comments/Precautions
Scurfy Scale	calcium polysulfide (Lime Sulfur) EC	13-15 oz	10-12 gal	Follow label directions	
	*horticultural oil (Sunspray) 11E (Ultra-Fine)		2 gal Follow label directions	4 hours 4 hours	Dormant application only. Dormant or summer application.
	*malathion 57 EC	2 tsp	1 1/2 pt	24 hours	Use only when plants are completely dormant.
Slug, Snail	*metaldehyde + carbaryl (Sevin) bait	---	---	Follow label directions	Follow label directions; distribute evenly.
	methiocarb (Mesurol) 75 WP	8 tsp	4 lb	24 hours	Up to four applications per season. Not for landscape use.
Soft Scale	acetamiprid (TriStar) 70 WSP	---	2-4 packs	24 hours	Not for homeowner use.
	azadirachtin (Azatrol EC)	Follow label directions	Follow label directions	4 hours	
	buprofezin (Talus)	---	Follow label directions	12 hours	
	*horticultural oil (Sunspray) 11E (Ultra-Fine)		2 gal Follow label directions	4 hours 4 hours	Dormant application only. Dormant or summer application.
	imidacloprid *(Merit) (Marathon)		Follow label directions	12 hours	Not for agricultural use
	thiamethoxam (Flagship)	---	Follow label directions	12 hours	Not for landscape use.
Southern Pine Beetle (on individual trees) and Bark Beetles (Ips Sp.)					No effective preventive control measures. Proper fertilization and watering are the best means to maintain healthy trees and aid in preventing Southern Pine Beetle and Bark Beetle infestations.
Southern Red Mite	acephate (various brands and formulations, some suitable for *homeowner use)	Follow label directions	Follow label directions	24 hours	
	bifenazate (Floramite)			Follow label directions	
	fenpropathrin (Tame) 30.9 EC		8-16 oz	24 hours	
Sowbug	cyfluthrin (Decathlon) 20 WP	1/4 tsp	6 tbsp	Follow label directions	
Spider Mite	abamectin (Avid)	1/4 tsp	4 oz	Follow label directions	Do not use on ferns or conifers.
	azadirachtin (Azatrol EC)	Follow label directions	Follow label directions	4 hours	
	bifenazate (Floramite)			Follow label directions	Use in rotation with other miticides.
	bifenthrin (Onyx)	Follow label directions	Follow label directions	Follow label directions	Landscape use only.
	clofentezine (Ovation)	---	---	Follow label directions	Mite ovicide (commercial use).

*Suitable for home use.

TREE AND SHRUB INSECT CONTROL

Insects	Insecticide	Amount of Formulation per Gallon of Spray	Amount per 100 Gallons of Water	Minimum Interval Between Application and Reentry	Comments/Precautions
Spider Mite (cont.)	etoxazole (TetraSan)		8-16 oz	Follow label directions	Mite ovicide.
	fluvalinate (Mavrik) 22.3 EC	1/3-5/8 tsp	5-10 fl oz	Follow label directions	
	hexythiozox (Hexygon)	---	---	Follow label directions	
	*horticultural oil	8-16 tsp	1-2 gal	Follow label directions	
	*horticultural oil 98 EC	6-8 tsp	1 1/2-2 gal	Follow label directions	
	soap				
	* (Olympic Insecticidal) 25% EC	2 1/2-5 oz	---	Follow label directions	
49.5 EC	2 1/2 oz	2 gal	12 hours		
(M-Pede) 49 EC	1 1/4-2 1/2 oz	1-2 gal	12 hours		
Spittlebug	acephate (various brands and formulations, some suitable for *homeowner use)	Follow label directions	Follow label directions	24 hours	
	azadirachtin (Azatrol EC)	Follow label directions	Follow label directions	4 hours	
	cyfluthrin (Decathlon) 20 WP	1/4 tsp	9 tbsp	Follow label directions	
Spring Cankerworm	acephate (various brands and formulations, some suitable for *homeowner use)	Follow label directions	Follow label directions	24 hours	
	azadirachtin (Azatin XL)	Follow label directions	Follow label directions	4 hours	
	<i>Bacillus thuringiensis kurstaki</i>		Follow label directions	4 hours	
	* (BiobitHP)				
	* (Dipel)				
	* (Foray)				
Spruce Spider Mite	abamectin (Avid) 0.15 EC			12 hours	See label for phytotoxicity warnings.
	acephate (various brands and formulations, some suitable for *homeowner use)	Follow label directions	Follow label directions	24 hours	
	azadirachtin (Azatrol EC)	Follow label directions	Follow label directions	4 hours	
	bifenazate (Floramite) 50W			12 hours	
	bifenthrin (Onyx)	Follow label directions	Follow label directions	Follow label directions	Landscape use only.
	*horticultural oil (Sunspray) 11E		2 gal	4 hours	Dormant application only. Dormant or summer application.
	(Ultra-Fine)		Follow label directions	4 hours	
	soap (M-Pede) 49 EC	1 1/4-2 1/2 oz	1-2 gal	12 hours	
spinosad (Conserve SC)	1 1/3 tsp	22 oz	4 hours	Repeat in 7 to 10 days.	

TREE AND SHRUB INSECT CONTROL

Insects	Insecticide	Amount of Formulation per Gallon of Spray	Amount per 100 Gallons of Water	Minimum Interval Between Application and Reentry	Comments/Precautions	
Stink Bug	azadirachtin (Azatrol EC)	Follow label directions	Follow label directions	4 hours		
	pyrethrins (Pyrenone) 6 EC	1/8-1/2 tsp	2-12 fl oz	Follow label directions		
Tea Scale	acetamiprid (TriStar) 70 WSP	---	2-4 packs	24 hours	Not for homeowner use.	
	buprofezin (Talus)	---	Follow label directions	12 hours		
	dinotefuran (Safari)	Follow label directions	Follow label directions	12 hours	Follow label directions.	
	*horticultural oil (Sunspray) 11E (Ultra-Fine)		2 gal Follow label directions	4 hours 4 hours	Dormant application only. Dormant or summer application.	
	imidacloprid *(Merit) (Marathon)		Follow label directions	Not for agricultural use 12 hours		
Tent Caterpillar	acephate (various brands and formulations, some suitable for *homeowner use)	Follow label directions	Follow label directions	24 hours		
	azadirachtin (Azatrol EC, Azatin XL)	Follow label directions	Follow label directions	4 hours		
	<i>Bacillus thuringiensis kurstaki</i> *(BiobitHP) *(Dipel) *(Foray)		Follow label directions	4 hours		
	bifenthrin (Onyx)	Follow label directions	Follow label directions	Follow label directions	Landscape use only.	
	carbaryl (Sevin) *80 WP *50 WP *4 SC	2 tbsp 1 1/4 tbsp 1 tbsp	2 lb 1 1/4 lb 1 qt	Follow label directions		
	cyfluthrin (Decathlon) 20 WP	1/4 tsp	6 tbsp	Follow label directions		
	*pyrethrins (Pyrenone) 6 EC	1/8-1/2 tsp	2-12 fl oz	Follow label directions		
	soap *(Olympic Insecticidal) 49.5 EC (M-Pede) 49 EC	2 1/2 oz 3 3/4 oz	2 gal 3 gal	12 hours 12 hours		
	Thrips	acetamiprid (TriStar) 70 WSP	---	3-6 packs	24 hours	Not for homeowner use.
		azadirachtin (Azatrol EC, Azatin XL)	Follow label directions	Follow label directions	4 hours	
<i>Beauveria bassiana</i> (BotaniGard) 22 WP (BotaniGard) ES			0.5-2 lb 1 pt-2 qt	4 hours 4 hours	Best if from unopened container.	

*Suitable for home use.

TREE AND SHRUB INSECT CONTROL

Insects	Insecticide	Amount of Formulation per Gallon of Spray	Amount per 100 Gallons of Water	Minimum Interval Between Application and Reentry	Comments/Precautions
Thrips (cont.)	bifenthrin (Onyx; Talstar 10WP, 7.9 F)	Follow label directions	Follow label directions	Follow label directions	Landscape use only. Not for agricultural use.
	cyfluthrin (Decathlon) 20 WP	1/4 tsp	9 tbsp	Follow label directions	
	fenpropathrin (Tame) 30.9 EC		5 1/3-10 2/3 oz	24 hours	
	fluvalinate (Mavrik) 22.3 EC	---	4-10 fl oz	Follow label directions	
	*pyrethrins (Pyrenone) 6 EC	1/8-1/2 tsp	2-12 fl oz	Follow label directions	
	spinosad (Conserve SC)	3/8 tsp	6 oz	4 hours	
Tussock Moth	azadirachtin (Azatrol EC, Azatin XL)	Follow label directions	Follow label directions	4 hours	
	cyfluthrin (Decathlon) 20 WP	1/4 tsp	9 tbsp	Follow label directions	
	*horticultural oil	5 tbsp		Follow label directions	
Twig Borer	bifenthrin (Onyx)	Follow label directions	Follow label directions	Follow label directions	Landscape use only.
	bifenthrin (Talstar) 7.9 F	1-2 tbsp	10-20 oz	Not for agricultural use	
Two-Spotted Spider Mite	bifenazate (Floramite)			Follow label directions	Use in rotation with other miticides.
	bifenthrin (Onyx)	Follow label directions	Follow label directions	Follow label directions	Landscape use only.
	fenpropathrin (Tame) 30.9 EC	---	8-16 oz	24 hours	
	fluvalinate (Mavrik) 22.3 F	1/3 tsp	5 oz	Follow label directions	Labeled as a dip.
	propargite (Ornamite) 30 WP	1 tsp	1 lb	Follow label directions	Check phytotoxicity list on label before using.
	spinosad (Conserve SC)	1 1/3 tsp	22 oz	4 hours	Repeat in 7 to 10 days.
Wax Scale	buprofezin (Talus)	---	Follow label directions	12 hours	
	*horticultural oil (Sunspray) 11E (Ultra-Fine)		2 gal Follow label directions	4 hours 4 hours	Dormant application only. Dormant or summer application.
Web Worm	acephate (various brands and formulations, some suitable for *homeowner use)	Follow label directions	Follow label directions	24 hours	
	azadirachtin (Azatrol EC)	Follow label directions	Follow label directions	4 hours	
	bifenthrin (Onyx)	Follow label directions	Follow label directions	Follow label directions	Landscape use only.
	carbaryl (Sevin) 50 WP	1 tbsp	2 lb	Follow label directions	
	cyfluthrin (Decathlon) 20 WP	1/4 tsp	6 tbsp	Follow label directions	

TREE AND SHRUB INSECT CONTROL

Insects	Insecticide	Amount of Formulation per Gallon of Spray	Amount per 100 Gallons of Water	Minimum Interval Between Application and Reentry	Comments/Precautions
Web Worm	permethrin (Astro, Perm-up, Permethrin Pro) *permethrin		2-5 qt	12 hours	Use Astro and Permethrin Pro for landscapes only. Many formulations of permethrin are available for home use.
	*pyrethrins (Pyrenone) 6 EC	1/8-1/2 tsp	2-12 fl oz	Follow label directions	
Weevil	bifenthrin (Onyx; Talstar 7.9 F)	Follow label directions	Follow label directions	Follow label directions	L andscape use only.
	carbaryl (Sevin) 50 WP	1 tbsp	2 lb	Follow label directions	
	permethrin (Astro, Perm-up, Permethrin Pro) *permethrin		2-5 qt	12 hours	
Whitefly	acephate (various brands and formulations, some suitable for *homeowner use)	Follow label directions	Follow label directions	24 hours	
	acetamiprid (TriStar) 70 WSP	---	2-4 packs	24 hours	Not for homeowner use.
	<i>Beauveria bassiana</i> (BotaniGard) 22 WP		0.5-1 lb	4 hours	Best if from unopened container.
	(BotaniGard) ES		1 pt-1 qt	4 hours	
	bifenthrin (Onyx; Talstar 7.9 F)	Follow label directions	Follow label directions	Follow label directions	Landscape use only.
	cyfluthrin (Decathlon) 20 WP	1/4 tsp	9 tbsp	Follow label directions	
	dinotefuran (Safari)	Follow label directions	Follow label directions	12 hours	Follow label directions
	fluvalinate (Mavrik) 22.3 EC	1/8-5/8 tsp	2-10 fl oz	Follow label directions	
	*horticultural oil (Sunspray) 11E (Ultra-Fine)		2 gal Follow label directions	4 hours 4 hours	Dormant application only. Dormant or summer application.
	imidacloprid *(Merit) (Marathon)		Follow label directions	Not for agricultural use 12 hours	
	permethrin (Astro, Perm-up, Permethrin Pro) *permethrin		2-5 qt	12 hours	Use Astro and Permethrin Pro for landscapes only. Many formulations of permethrin are available for home use.
	pymetrozine (Endeavor)		2.5-5.0 oz	12 hours	Rates vary. Follow label directions.

*Suitable for home use.

TREE AND SHRUB INSECT CONTROL

Insects	Insecticide	Amount of Formulation per Gallon of Spray	Amount per 100 Gallons of Water	Minimum Interval Between Application and Reentry	Comments/Precautions
Whitefly (cont.)	*pyrethrins (X-clude) 0.3 A (Pyrenone) 6 EC	1/4-1/2 tsp	2-12 fl oz	Follow label directions	Spray when air is still: 5-10 seconds/100 sq ft.
	pyriproxyfen (Distance) 11.2 EC	1/3-2/3 tsp	6-12 oz	12 hours	
	*soap (Olympic Insecticidal) 25% EC	2 1/2-5 oz	---	Follow label directions	
	49.5 EC	2 1/2 oz	2 gal	12 hours	
	thiamethoxam (Flagship)	---	Follow label directions	12 hours	Not for landscape use.
White Grub	<i>Beauveria bassiana</i> (BotaniGard) ES		1 pt-2 qt	4 hours	Best if from unopened container.
	imidacloprid *(Merit) (Marathon)		Follow label directions	12 hours	Not for agricultural use
	thiamethoxam (Flagship)	---	Follow label directions	12 hours	Not for landscape use.
Whitemarked Tussock Moth	acephate (various brands and formulations, some suitable for *homeowner use)	Follow label directions	Follow label directions	24 hours	
White Peach Scale	acetamiprid (TriStar) 70 WSP	---	2-4 packs	24 hours	Not for homeowner use.
	buprofezin (Talus)	---	Follow label directions	12 hours	
	dinotefran (Safari)	Follow label directions	Follow label directions	12 hours	Follow label directions.
	*horticultural oil (Sunspray) 11E (Ultra-Fine)		2 gal	4 hours	Dormant application only. Dormant or summer application.
			Follow label directions	4 hours	
	imidacloprid *(Merit) (Marathon)		Follow label directions	12 hours	Not for agricultural use
Woolly Apple Aphid	fenpropathrin (Tame) 30.9 EC	---	5 1/3-10 2/3 oz	24 hours	
	*soap (Olympic Insecticidal) 49.5 EC	2 1/2 oz	2 gal	12 hours	
Yellownecked Caterpillar	acephate (various brands and formulations, some suitable for *homeowner use)	Follow label directions	Follow label directions	24 hours	
	cyfluthrin (Decathlon) 20 WP	1/4 tsp	6 tbsp	Follow label directions	
	*pyrethrins (Pyrenone) 6 EC	1/8-1/2 tsp	2-12 fl oz	Follow label directions	
	spinosad (Conserve SC)	3/8 tsp	6 oz	4 hours	Treat when larvae are small.

*Suitable for home use.