

CHEMICAL CONTROL OF COMMON FOREST & SHADE TREE PESTS

Mark Harrell, Forest Program Leader; Laurie Stepanek & Jennifer Morris, Forest Health Specialists
Nebraska Forest Service/University of Nebraska-Lincoln

This information is intended as a guide to chemical control of common insect pests and diseases of forest and shade trees. This is not a complete list of all pesticides available. Other methods of control that do not involve the use of pesticides may be effective against certain pests and should be considered before a pesticide is used. Trade names have been used for convenience. No endorsement is implied, and no discrimination against similar products not listed is intended. No guarantee of effectiveness is made. **Some pesticides may not be appropriate for certain trees or pests or under certain conditions. Always read and follow the instructions and precautions on the pesticide container.**

CONIFER INSECTS

Insect	Tree	Application Number & Timing	Pesticide	Brand Name & Comments			
Aphids	Pine Fir Juniper Arborvitae	1+ Throughout the growing season as they appear (May-September).	Horticultural/Growing season oil	Omni Supreme Spray*			
			Insecticidal Soap	Ortho Volck Oil Spray Safer Insect Killing Soap Concentrate Garden Safe Insecticidal Soap			
			Imidacloprid	Merit 2F, 75WSP, 75WP* Xytect 2F, 75WSP*			
			Acephate	Orthene Bonide Systemic Insect Control			
			Permethrin	Eight Astro* Licensed applicators only			
			Azadirachtin	AzaSol*			
			Deltamethrin	Suspend SC* Commercial use only			
			Imidacloprid	Bayer Advanced Tree & Shrub Insect Control Earl May Tree & Shrub Insect Control Merit 2F, 75WSP, 75WP* Xytect 2F, 75WSP*			
			Bagworms	Juniper Spruce Pine Fir Redcedar Arborvitae Bald cypress	1+ After eggs hatch and small bags appear (June-July). Can also hand pick bags before eggs hatch. Severe infestations may need an additional spray 7-14 days after 1st application.	<i>Bt Bacillus thuringiensis</i>	Dipel, Thuricide
						Spinosad	Ferti-lome Borer, Bagworm, Leafminer & Tent Caterpillar Spray Monterey Garden Insect Spray Conserve*
Azadirachtin	AzaSol*						
Permethrin	Eight, Hi-Yield 38 Plus Astro* Licensed applicators only Permethrin* Licensed applicators only						
Deltamethrin	Suspend SC* Commercial use only						
Acephate	Orthene Bonide Systemic Insect Control						

Pesticides marked with an asterisk () generally must be ordered from a chemical distributor or agricultural coop.

CONIFER INSECTS (CONT.)

Insect	Tree	Application Number & Timing	Pesticide	Brand Name & Comments
Ips bark beetle	Pine	1-2 Apply in early spring when temps consistently reach 50-60°F or prior to earliest beetle attack (March-April). A second application might be needed in high risk areas in early to mid-summer. Also apply when recently cut pine logs are brought near living pines.	Carbaryl	Sevin XLR Plus, SL*
			Bifenthrin	Carbaryl 4L* Onyx*
			Permethrin	Hi-Yield 38 Plus Astro* Licensed applicators only Permethrin* Licensed applicators only
Pales weevil	Scotch & White pines	1 Drench on cut stumps and surrounding soil in spring (April) or when temps consistently reach 60°F.	Chlorpyrifos (Restricted use)	Chlorpyrifos 4E* For nurseries, greenhouses Dursban 50W* For nurseries
Pine bark adelgid	Pine	1 Dormant season just before bud break.	Dormant/Horticultural/ Growing season oil	Omni Supreme Spray*
		1+ Throughout the growing season as they appear (May to September).	Insecticidal Soap	Ortho Volck Oil Spray Safer Insect Killing Soap Concentrate Garden Safe Insecticidal Soap
			Imidacloprid	Merit 2F, 75WSP, 75WP* Xytect 2F, 75WSP*
		1 Soil treatments. Use prior to infestation if a serious problem is expected. Has a 60-day translocation delay.	Deltamethrin Imdacloprid	Suspend SC* Commercial use only Bayer Advanced Tree & Shrub Insect Control Earl May Tree & Shrub Insect Control Merit 2F, 75WSP, 75WP*
Pine needle scale	Pine Spruce	2-3 When eggs hatch and red crawlers appear (late May or early June). Repeat once or twice at 7-10 day intervals (unless prohibited by label, e.g. oils). Also when eggs hatch in July.	Horticultural/Growing season oil	Omni Supreme Spray*
			(Oil will remove blue color)	Ortho Volck Oil Spray
			Insecticidal Soap	Safer Insect Killing Soap Concentrate
			(Some products not for blue spruce)	Garden Safe Insecticidal Soap
			Acephate	Orthene Bonide Systemic Insect Control
			Bifenthrin Permethrin	Onyx* Eight
Pine tip moth	Pine	2-4 When shoots are elongating to 1/2-inch needle length or third week of May and first week of July. Better control is also second week of June and third week of July.	Acephate	Orthene Bonide Systemic Insect Control
			Dimethoate* (Nurseries only)	Dimethoate 4EC*, 4E* Commercial use only
			Azadirachtin	AzaSol*
			Permethrin	Hi-Yield 38 Plus Astro* Licensed applicators only
			Deltamethrin	Suspend SC* Commercial use only

Pesticides marked with an asterisk () generally must be ordered from a chemical distributor or agricultural coop.

CONIFER INSECTS (CONT.)

Insect	Tree	Application Number & Timing	Pesticide	Brand Name & Comments
Sawflies	Pine	1 When larvae appear (mid-late April).	Spinosad	Ferti-lome Borer, Bagworm, Leafminer & Tent Caterpillar Spray Monterey Garden Insect Spray Conserve*
			Permethrin	Hi-Yield 38 Plus Astro* Licensed applicators only
			Deltamethrin	Suspend SC* Commercial use only
			Azadirachtin	AzaSol*
			Acephate	Orthene
			Imidacloprid	Bonide Systemic Insect Control Merit 2F, 75WSP, 75WP* Xytect 2F, 75WSP*
Spruce needle miner	Spruce	1 After larvae hatch and when current-year damage is first observed (June).	Carbaryl Acephate	Sevin Orthene
Spruce spider mite	Spruce Juniper	1 In dormant season just before bud break.	Horticultural/Growing season oil	Omni Supreme Spray*
			(Oil will remove blue color)	Ortho Volck Oil Spray
	Pine Arborvitae Fir	2+ When mites are detected (April-May and September-October). Make a second application 7-10 days later using different or same products according to label directions. Switching products reduces pesticide resistance. Hard sprays of water will lower populations.	Insecticidal Soap	Safer Insect Killing Soap Concentrate
			(Some products not for blue spruce)	Garden Safe Insecticidal Soap
			Bifenazate	Floramite, Floramite SC*
			Hexythiazox	Hexygon DF* Commercial use only
Spiromesifen	Forbid 4F*			
Etoxazole	TetranSan5WDG*			
Abamectin	Avid 0.15EC*			
Twospotted spider mite	Juniper Pine Spruce	2 When mites are detected (April through summer). Make a second application 7-10 days later using different or same product according to label directions. Switching products reduces pesticide resistance. Hard sprays of water will lower populations.	Horticultural/Growing season oil	Omni Supreme Spray*
			(Oil will remove blue color)	Ortho Volck Oil Spray
	Insecticidal Soap	Safer Insect Killing Soap Concentrate		
	(Some products not for blue spruce)	Garden Safe Insecticidal Soap		
	Bifenazate	Floramite, Floramite SC*		
	Hexythiazox	Hexygon DF* Commercial use only		
Spiromesifen	Forbid 4F*			
Etoxazole	TetranSan5WDG*			
Abamectin	Avid 0.15EC*			
Western pine tussock moth	Ponderosa pine	1 When caterpillars actively feed in spring.	Bt <i>Bacillus thuringiensis</i>	Dipel Thuricide
			Spinosad	Ferti-lome Borer, Bagworm, Leafminer & Tent Caterpillar Spray Monterey Garden Insect Spray Conserve*
			Azadirachtin	AzaSol*

Pesticides marked with an asterisk () generally must be ordered from a chemical distributor or agricultural coop.

CONIFER INSECTS (CONT.)

Insect	Tree	Application Number & Timing	Pesticide	Brand Name & Comments	
Zimmerman pine moth	Pine	2	When larvae are active (mid-April and August). Use rate for borers and apply to trunk and major branches.	Permethrin	Hi-Yield 38 Plus Astro* Licensed applicators only Super Eight Permethrin* Licensed applicators only
				Chlorpyrifos* (Restricted use)	Chlorpyrifos 4E* For nurseries, greenhouses Dursban 50W* For nurseries
		1	Before the end of April if too late for the April spray above.	Dimethoate* (Nurseries only)	Dimethoate 4EC*, 4E* Commercial use only

Pesticides marked with an asterisk () generally must be ordered from a chemical distributor or agricultural coop.

CONIFER DISEASES

Disease	Tree	Application Number & Timing	Pesticide	Brand Name & Comments
Brown Spot	Scotch & White pines	1-2 When new growth is 1/2" to 2" in length (late May-early June). Repeat 3-4 weeks later if frequent rains occur.	Chlorothalonil	Fung-onil Daconil Weather Silk* Bravo Weather Silk*
			Basic Copper Fungicide	Bonide Copper Fungicide
			Mancozeb	Dithane 75DF,F45* Fore 80WP* Protect DF*
Cercospora blight	Juniper Redcedar Arborvitae	2+ Mid-June and late July. Additional sprays at monthly intervals may be necessary if frequent rains occur in August and September. Use of a spreader-sticker may increase effectiveness.	Copper salts of fatty and rosin acids	Camelot 0*
			Basic Copper Fungicide	Bonide Copper Fungicide
			Mancozeb	Dithane 75DF,F45* Fore 80WP* Pentathlon LF, DF* Protect DF*
Cyclaneusma needlecast	Pine (mostly Scotch)	4+ Before bud break (March-April). Repeat at 6-8 week intervals until fall or repeat monthly during periods of frequent rainfall.	Chlorothalonil	Daconil Weather Silk* Bravo Weather Silk*
			Mancozeb	Dithane 75DF Fore 80WP* Protect DF*
Diplodia blight (Sphaeropsis)	Pine	3 At bud break then before needle emergence and 10 days later.	Thiophanate-methyl	3336 F, WP* Fungo Flo, 50WSB* OHP 6672 50WP Not for homeowner use
			Propiconazole	Banner MAXX*
Dothistroma needle blight	Austrian pine	2 As needles emerge (April-May) and after new growth has occurred (June).	Copper salts of fatty and rosin acids	Camelot 0*
Phomopsis blight	Juniper Redcedar Arborvitae Fir	2+ Every 7-10 days as new growth is emerging in the spring and summer during wet periods (May-June).	Basic Copper Fungicide	Bonide Copper Fungicide
			Thiophanate-methyl	3336 F, WP* Fungo Flo, 50WSB* OHP 6672 50WP Not for homeowner use
			Mancozeb	Dithane 75DF,F45* Fore 80WP* Pentathlon LF, DF* Protect DF*
			Propiconazole	Banner MAXX*
Pine wilt	Scotch & Austrian pines	1 Trunk inject before symptoms appear. Be aware there is potential for resin to block product uptake.	Abamectin	Greyhound* For professional use only Abacide 2* For professional use only
			Emamectin benzoate	TREE-äge* For professional use only ArborMectin* For professional use only
Rhizophaera needlecast & Stigmina needlecast	Spruce (Mostly Colo. blue)	2+ When shoots are 1/2"-2" in length and 3-4 weeks later. If frequent rains occur, spray every 10-14 days through early July.	Chlorothalonil	Fung-onil Daconil Weather Silk* Bravo Weather Silk*
			Copper salts of fatty and rosin acids	Camelot 0*

Pesticides marked with an asterisk () generally must be ordered from a chemical distributor or agricultural coop.

CONIFER DISEASES (CONT.)

Disease	Tree	Application Number & Timing	Pesticide	Brand Name & Comments
Sirococcus shoot blight	Spruce (Mostly Colo. blue)	2+ When shoots are 1/2"-2" in length and 3-4 weeks later. If frequent rains occur, spray every 10-14 days through early July.	Chlorothalonil	Daconil Weather Silk*
			Propiconazole	Bravo Weather Silk* Banner MAXX*

Pesticides marked with an asterisk () generally must be ordered from a chemical distributor or agricultural coop.

BROADLEAF INSECTS

Insects	Tree	Application Number & Timing	Pesticide	Brand Name & Comments	
Aphids	Many trees	1+ Throughout the growing season as they appear (May-September).	Horticultural/Growing season oil	Omni Supreme Spray* Ortho Volck Oil Spray	
			Insecticidal Soap	Safer Insect Killing Soap Concentrate Garden Safe Insecticidal Soap	
			Imidacloprid	Merit 2F, 75WSP,75WP* Xytect 2F, 75WSP*	
			Acephate	Orthene Bonide Systemic Insect Control	
			Azadirachtin	AzaSol*	
			Permethrin	Eight Astro* Licensed applicators only	
			Deltamethrin	Suspend SC* Commercial use only	
			Bronze birch borer	Birch	2 Spray trunk and branches throughout the tree in late May. Repeat in 3 weeks.
Bifenthrin	Onyx*				
Chlorpyrifos* (Restricted use)	Chlorpyrifos 4E* For nurseries, greenhouses Dursban 50W* For nurseries				
1	Soil treatment: Apply in March to be effective in May. Has 60-day translocation delay.	Imidacloprid			Bayer Advanced Tree & Shrub Insect Control Earl May Tree & Shrub Insect Control Merit 2F, 75WSP,75WP* Xytect 2F, 75WSP*
		Imidacloprid			Pointer* For professional use only Imicide, Imicide Hp*
1	Trunk injection if too late to spray.	Emamectin benzoate			Tree-age* For professional use only ArborMectin* For professional use only
Elm leaf beetle	Elm	1 When larvae appear (May).			Imidacloprid
			Spinosad	Ferti-lome Borer, Bagworm, Leafminer & Tent Caterpillar Spray Conserve*	
			Permethrin	Eight Astro* Licensed applicators only	
			Deltamethrin	Suspend SC* Commercial use only	
		1	Soil treatments: Apply in March to be effective in May. Has 60-day translocation delay.	Azadirachtin	AzaSol*
				Acephate	Orthene Bonide Systemic Insect Control
				Imidacloprid	Bayer Advanced Tree & Shrub Insect Control Earl May Tree & Shrub Insect Control Merit 2F, 75WSP,75WP* Xytect 2F, 75WSP*

Pesticides marked with an asterisk () generally must be ordered from a chemical distributor or agricultural coop.

BROADLEAF INSECTS (CONT.)

Insects	Tree	Application Number & Timing	Pesticide	Brand Name & Comments
Elm flea weevil	Elm (mostly Siberian elm)	1-2 Damage usually does not warrant treatment. Control adults as new leaves are emerging in spring (May) and after new adults emerge (June).	Imidacloprid	Merit 2F, 75WSP, 75WP*
			Azadirachtin	Xytect 2F, 75WSP*
			Carbaryl	AzaSol*
			Acephate	Sevin
Emerald ash borer	Ash	1 Trunk inject in May.	Imidacloprid	Orthene
			Emamectin benzoate	Bonide Systemic Insect Control
			Azadirachtin	Pointer* For professional use only
			Imidacloprid	Imicide, Imicide Hp*
<i>As of the date of this publication emerald ash borer is not known to be present in Nebraska. It is recommended to treat only if EAB is within 15 miles of your tree. If you think you have found emerald ash borer please contact: Nebraska Dept of Ag: 402-471-2351 Or Nebraska Forest Service: 402-472-2944</i>		1 Soil treatments: Apply in March or the previous fall to be effective in May. Has a 60-day translocation delay.	Emamectin benzoate	Tree-age* For professional use only
			Azadirachtin	ArborMectin* For professional use only
			Imidacloprid	AzaSol*
			Dinotefuran	Bayer Advanced Tree & Shrub Insect Control
		1 Basal trunk sprays: Apply mid-May through early June.	Imidacloprid	Earl May Tree & Shrub Insect Control
			Dinotefuran	Merit 2F, 75WSP, 75WP*
			Dinotefuran	Xytect 2F, 75WSP*
			Dinotefuran	Green Light Tree & Shrub Insect Control with Safari
Fall webworm	Many trees including but not limited to: elm, cottonwood, cherry, maple, crabapple, birch, walnut, hickory, willow	1 When caterpillars and their webs appear (July).	Bt <i>Bacillus thuringiensis</i>	Ortho Tree & Shrub Insect Control Granules
			Spinosad	Safari 20G*
			Azadirachtin	Green Light Tree & Shrub Insect Control with Safari
			Permethrin	Dipel
Flatheaded apple tree borer	Many trees including but not limited to: <i>Populus</i> , maple, oak, willow, apple, hawthorn	1-3 Apply in late spring (May-July) during egg laying and before larvae bore into trunk.	Spinosad	Thuricide
			Azadirachtin	Ferti-lome Borer, Bagworm, Leafminer & Tent Caterpillar Spray
			Permethrin	Monterey Garden Insect Spray
			Deltamethrin	Conserve*
		1 Soil treatments: Apply in March to be effective in May. Has 60-day translocation delay.	Permethrin	AzaSol*
			Carbaryl	Eight
			Imidacloprid	Hi-Yield 38 Plus
			Imidacloprid	Astro* Licensed applicators only
			Imidacloprid	Permethrin* Licensed applicators only
			Imidacloprid	Suspend SC* Commercial use only
			Imidacloprid	Eight
			Imidacloprid	Astro* Licensed applicators only
			Imidacloprid	Sevin
			Imidacloprid	Bayer Advanced Tree & Shrub Insect Control
			Imidacloprid	Earl May Tree & Shrub Insect Control
			Imidacloprid	Merit 2F, 75WSP, 75WP*

Pesticides marked with an asterisk () generally must be ordered from a chemical distributor or agricultural coop.

BROADLEAF INSECTS (CONT.)

Insects	Tree	Application Number & Timing	Pesticide	Brand Name & Comments
Honeylocust plant bug	Honeylocust	1 When leaves fail to appear after budbreak (May) and small green bugs are present.	Insecticidal Soap	Safer Insect Killing Soap Concentrate Garden Safe Insecticidal Soap
			Horticultural/Growing season oil	Omni Supreme Spray* Ortho Volck Oil Spray
Lace bugs	May trees including but not limited to: sycamore, hackberry, oak, linden	1 When feeding damage (small yellow spots) and insects appear (June).	Insecticidal Soap	Safer Insect Killing Soap Concentrate Garden Safe Insecticidal Soap
			Horticultural/Growing season oil	Omni Supreme Spray* Ortho Volck Oil Spray
			Permethrin	Hi-Yield 38 Plus Astro* Licensed applicators only
			Deltamethrin	Suspend SC* Commercial use only
			Imidacloprid	Merit 2F, 75WSP, 75WP* Xytect 2F, 75WSP*
			Acephate	Orthene Bonide Systemic Insect Control
			Imidacloprid	Bayer Advanced Tree & Shrub Insect Control Earl May Tree & Shrub Insect Control Merit 2F, 75WSP, 75WP* Xytect 2F, 75WSP*
Lilac (ash) borer	Ash Lilac	2 Spray trunk and large branches 7-14 days after male emergence (early-mid May). Repeat 2-3 weeks later. Can time first spray better by catching males in pheromone traps and spraying 7-14 days after first catch.	Permethrin	Hi-Yield 38 Plus Super Eight Astro* Licensed applicators only Permethrin* Licensed applicators only
			Bifenthrin	Onyx*
			Chlorpyrifos* (Restricted use)	Chlorpyrifos 4E* For nurseries, greenhouses Dursban 50W* For nurseries
			Bt <i>Bacillus thuringiensis</i>	Dipel
Mimosa webworm	Honeylocust	1-2 When webs first appear (early June). Repeat for second generation in August if needed.	Spinosad	Ferti-lome Borer, Bagworm, Leafminer & Tent Caterpillar Spray Monterey Garden Insect Spray Conserve*
			Deltamethrin	Suspend SC* Commercial use only
			Acephate	Orthene Bonide Systemic Insect Control

Pesticides marked with an asterisk () generally must be ordered from a chemical distributor or agricultural coop.

BROADLEAF INSECTS (CONT.)

Insects	Tree	Application Number & Timing	Pesticide	Brand Name & Comments
Oystershell scale	Many trees including but not limited to: ash, maple, willow	2 When eggs hatch and light-yellow crawlers appear (late May). Repeat in 7-10 days (unless prohibited by the label, e.g. oil). Repeat at August egg hatch if needed.	Horticultural/Growing season oil (Oil may damage some maples)	Omni Supreme Spray*
			Insecticidal Soap (Not for some maples)	Ortho Volck Oil Spray
			Acephate (Not for some maples)	Safer Insect Killing Soap Concentrate
				Garden Safe Insecticidal Soap
		1+ During dormant period but not to be used as the only means of control in higher populations.	Horticultural/Growing season oil	Orthene Bonide Systemic Insect Control Omni Supreme Spray* Ortho Volck Oil Spray
Peach tree borer	Peach, plum, cherry and other stone fruits	1+ Apply to lower trunk and soil around July 1, July 25, and August 15. Can time first spray better by catching males in pheromone traps and spraying at first catch. Some chemicals cannot be used on trees grown for fruit production/consumption.	Permethrin	Super Eight Eight
			Azadirachtin	Astro* Licensed applicators only AzaSol*
Spider mites	Many trees	2 When mites are present (as early as April, but mostly June through August). Make a second application 7-10 days later with a different or same product according to label directions. (A different product will reduce development of resistance).	Horticultural/Growing season oil	Omni Supreme Spray*
				Ortho Volck Oil Spray
			Insecticidal Soap	Safer Insect Killing Soap Concentrate
				Garden Safe Insecticidal Soap
			Bifenazate	Floramite, Floramite SC*
			Hexythiazox	Hexygon DF* Commercial use only
		Spiromesifen	Forbid 4F*	
		Etoxazole	TetraSan 5WDG*	
		1 During dormant period just before bud break but not to be used as only means of control in higher populations.	Abamectin Horticultural/Growing season oil	Avid 0.15EC* Omni Supreme Spray* Ortho Volck Oil Spray
Tent caterpillars	Many trees including but not limited to: plum, cherry, apple, crabapple	1 When caterpillars and their webs appear (April). Some chemicals cannot be used on trees grown for fruit production/consumption.	Bt <i>Bacillus thuringiensis</i>	Dipel Thuricide
			Spinosad	Ferti-lome Borer, Bagworm, Leafminer & Tent Caterpillar Spray Conserve*
			Azadirachtin	AzaSol*
			Permethrin	Eight Hi-Yield 38 Plus Astro* Licensed applicators only
			Deltamethrin	Suspend SC* Commercial use only
			Acephate (Not for crabapples)	Orthene Bonide Systemic Insect Control

Pesticides marked with an asterisk () generally must be ordered from a chemical distributor or agricultural coop.

BROADLEAF INSECTS (CONT.)

Insects	Tree	Application Number & Timing	Pesticide	Brand Name & Comments
Walnut caterpillar	Walnut, hickory butternut, pecan	1 When caterpillars appear (June). Some chemicals cannot be used on trees grown for nut production/ consumption.	<i>Bt Bacillus thuringiensis</i>	Dipel
			Spinosad	Ferti-lome Borer, Bagworm, Leafminer & Tent Caterpillar Spray Monterey Garden Insect Spray Conserve*
			Permethrin	Hi-Yield 38 Plus Astro* Licensed applicators only
			Deltamethrin	Suspend SC* Commercial use only
			Azadirachtin	AzaSol*
			Carbaryl	Sevin

Pesticides marked with an asterisk () generally must be ordered from a chemical distributor or agricultural coop.

BROADLEAF DISEASES

Disease	Tree	Application Number & Timing	Pesticide	Brand Name & Comments
Anthracnose	Sycamore	3-4 At budbreak (mid-April) and repeat 2-3 times at 7 to 14-day intervals.	Chlorothalonil	Fung-onil Daconil Weather Stik*
			Thiophanate-methyl	3336 F, WP* Fungo Flo OHP 6672 50WP* Not for homeowner use
			Copper salts of fatty and rosin acids	Camelot 0*
			Thiophanate-methyl	3336F, WP* Fungo Flo OHP 6672 50WP* Not for homeowner use
	Many trees including but not limited to oak, maple, ash, walnut	3-4 Damage is seldom serious enough to justify treatments. At budbreak (mid-April) and repeat 2 or 3 times at 7 to 10-day intervals. Not all products can be used on all trees.	Chlorothalonil	Daconil Weather Stik*
			Copper salts of fatty and rosin acids	Camelot 0*
			Propiconazole	Bonide Infuse Systemic Disease Control Ferti-lome Liquid Systemic Fungicide Banner MAXX*
			Mancozeb	Dithane 75DF* Fore 80WP* Pentathlon LF, DF* Protect DF*
			Chlorothalonil	Fung-onil Daconil Weather Stik*
			Thiophanate-methyl	3336 F, WP* Fungo Flo OHP 6672 50WP* Not for homeowner use
Apple scab	Crabapple Apple	3+ At 7 to 14-day intervals from prebloom (April) through rainy periods of growing season. Some chemicals cannot be used on trees grown for fruit production/consumption.	Chlorothalonil	Fung-onil Daconil Weather Stik*
			Thiophanate-methyl	3336 F, WP* Fungo Flo OHP 6672 50WP* Not for homeowner use
			Myclobutanil	Immunox Eagle 20EW, 40WP*
			Mancozeb	Dithane 75DF*, F45* Fore 80WP* Pentathlon LF, DF* Protect DF*
			Propiconazole	Ferti-lome Liquid Systemic Fungicide Banner MAXX* Bonide Infuse Systemic Disease Control
			Chlorothalonil	Fung-onil Daconil Weather Stik*
			Thiophanate-methyl	3336 F, WP* Fungo Flo OHP 6672 50WP* Not for homeowner use
			Myclobutanil	Immunox Eagle 20EW, 40WP*
Bur oak blight	Bur oak	1 Trunk inject before symptoms appear (early June).	Propiconazole	Alamo*

Pesticides marked with an asterisk () generally must be ordered from a chemical distributor or agricultural coop.

BROADLEAF DISEASES (CONT.)

Disease	Tree	Application Number & Timing	Pesticide	Brand Name & Comments
Cedar-apple rust & Cedar-hawthorn rust	Crabapple Apple Hawthorn	3+ As flower buds break (mid-April), at petal drop, and up to 4 additional sprays at 7 to 10-day intervals. Some chemicals cannot be used on trees grown for fruit production/consumption.	Chlorothalonil Thiophanate-methyl Propiconazole Myclobutanil Mancozeb	Fung-onil Daconil Weather Stik* 3336F, WP* Fungo Flo OHP 6672 50WP* Not for homeowner use Ferti-lome Liquid Systemic Fungicide Crabapple only Banner MAXX* Immunox Eagle 20EW, 40WP* Dithane 75DF*, F45* Fore 80WP* Pentathlon LF, DF*
Cherry leaf spot	Cherry	4+ At petal fall (May) and every 7 to 10 days as fruit matures. Severe infections may require sprays to start before petal break (mid-April or early May).	Chlorothalonil Myclobutanil Propiconazole	Fung-onil Daconil Weather Stik* Bravo Weather Stik* Immunox Eagle 20EW, 40WP* Bonide Infuse Systemic Disease Control Ferti-lome Liquid Systemic Fungicide Banner MAXX*
Dutch elm disease	Elm (mostly American elm)	1 Preventative treatment: Trunk inject when leaves approach full size (late May). 1 Therapeutic treatment: Trunk inject as soon as current year infections are seen (5% or less of crown infection; late June through August).	Thiabendazole hypophosphite Propiconazole Propiconazole	Arbortect 20S* Propizol* Shepherd* Alamo* Propizol* Alamo*
Fire blight	Apple Pear	3-4 At pink stage (3 to 4 days before blossoms open, mid-April) and every 5-7 days until petal drop.	Streptomycin	Agri-Mycin
Oak wilt	Oak	1 Trunk inject as soon as symptoms begin appearing or before. High volume injection (macro-injection) is more effective than small volume injection (micro-injection).	Propiconazole	Alamo*
Tubakia leaf spot	Bur oak	3 At budbreak (April) and repeat 2 times at 10 to 14 day intervals.	Propiconazole Mancozeb	Bonide Infuse Systemic Disease Control Ferti-lome Liquid Systemic Fungicide Banner MAXX* Dithane 75DF* Fore 80WP*

Pesticides marked with an asterisk () generally must be ordered from a chemical distributor or agricultural coop.