

*The Connecticut
Agricultural
Experiment
Station*

**Pesticide Guide
Toward
Integrated Insect
Management for
Connecticut
Arborists
2019**



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Rose T. Hiskes, MS
Valley Laboratory

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***Pesticide Guide Toward Integrated Insect
Management for Connecticut Arborists***

2019

Prepared by Rose Hiskes

Valley Laboratory
The Connecticut Agricultural Experiment Station
153 Cook Hill Rd.
P.O. Box 248 Windsor, CT 06095-3154

Rose Hiskes (860) 683-4977

**Valley Laboratory
The Connecticut Agricultural Experiment Station
Windsor, CT 06095-3154**

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The Connecticut Agricultural Experiment Station

INSTRUCTIONS

Use of this Guide

The purpose of this guide is to help Connecticut arborists, landscapers, Christmas tree growers & nurseries. This publication was produced by The Connecticut Agricultural Experiment Station. The following Pesticide Guide Toward Integrated Insect Management for Connecticut Arborists provides growing degree days, plant phenology and approximate dates for planning your yearly control program. Pesticides included in this summary are registered for use on the pests listed and in landscapes. In some instances, pesticides listed for a single pest are not all registered for each of the plants named. **Please be sure to check the pesticide label first.** Cultural, biological and non-chemical control methods are also listed when they are known to be effective and registered.

Federal Worker Protection Standard

The Federal Worker Protection Standard (WPS) defines an **agricultural plant** as any plant grown or maintained for *commercial or research purposes* and includes, but is not limited to: food, feed and fiber plants; trees; turfgrass; flowers; shrubs; ornamentals, and seedlings. It further defines an *agricultural establishment* as any farm, forest, nursery or greenhouse.

If you own or operate a nursery or Christmas tree farm, you are subject to the WPS agricultural use requirements when you use pesticides. You must comply with the provisions that apply to the workers and pesticide handlers that you employ. These provisions include, but are not limited to: notifying employees about pesticide applications; providing and maintaining personal protective equipment; providing pesticide safety training; following label-specific restricted entry intervals (REI's); posting pesticide safety information; monitoring handlers who apply products bearing the skull and crossbones symbol on the label; providing a decontamination site and emergency assistance.

For further information on the WPS, visit the national [Pesticide Educational Resources Collaborative](#) (PERC) website. For pesticide certification and private applicator information, contact the Department of Energy and Environmental Protection (DEEP), Pesticide Management Division, at DEEP.PesticideProgram@ct.gov or (860) 424-3369.

User Input

We are open to any suggestions on how this manual might be improved. A number of the changes in this current edition are a result of input from several arborists, nurseryman and Christmas tree growers. Rose Hiskes may be reached by phone at (860) 683-4977 (Monday through Friday, 8:30 am to 4:30 pm) or email rose.hiskes@ct.gov.

DISCLAIMER

Suggestions on the use of chemicals listed in this manual have been deemed legal in the State of Connecticut. Users of this guide must be aware that state and federal pesticide laws and pesticide labels are susceptible to change. This guide is meant to be of assistance to Connecticut licensed pesticide applicators in choosing the correct insecticide or miticide. **It is not a substitute for the pesticide label. The applicator assumes all responsibility for the proper use of any pesticide and must always thoroughly read, understand and follow all label directions.** Also, it is important for the applicator to stay current with all changes in the laws that govern the use of pesticides. The Connecticut Agricultural Experiment Station makes no claims of potential efficacy for the listed pesticides. The products listed in this manual are some of the ones we are aware of that are currently registered for use.

Caution: Pesticides may be injurious to humans, domestic animals, desirable plants, fish and other wildlife if they are not handled or applied properly. Use all pesticides selectively and carefully. Follow label instructions for storage and disposal. For information on disposal of excess or unwanted pesticides, contact your town Household Hazardous Waste Recycling Coordinator or the DEEP Hazardous Waste Compliance Assistance hotline at 888-424-4193 or DEEP.RCRAhelp@ct.gov .

The use of trade, firm or corporation names in this publication is for the benefit of the reader. It does not constitute an endorsement or approval of any service or product by The Connecticut Agricultural Experiment Station to the exclusion of others that may be suitable.

PESTICIDE SAFETY Although specific pesticides are listed in this manual, please note that there are often alternative options for prevention or management of some of these pests. Certain pesticides may be more effective than some of the others listed for the same use. Some pesticides may be less of a potential danger to the applicator, environment, beneficial organisms, etc. than others. The user of this manual should know the relative toxicity, effectiveness and potential hazards associated with each compound used.

Careful adherence to label instructions, combined with proper equipment calibration, provide the best method of preventing injury to non-target organisms, protecting the environment and achieving the best levels of insect control.

POLLINATOR PROTECTION New to this edition is information about Connecticut's 2016 pollinator health law. In order to better protect our pollinators, the systemic neonicotinoid insecticides containing imidacloprid, dinotefuran, thiamethoxam, clothianidin and labeled for use on plants, are now restricted use in Connecticut, but their status in other states varies. Only certified applicators or persons under their direct supervision can use these products.

The EPA requires that labels for these four neonicotinoids in products for outdoor foliar use include a Pollinator Protection Box and have additional label instructions prohibiting use while bees are foraging. In the guide they will be given a BEE CAUTION notation.

For all pesticides highly toxic to bees, which have a warning under "Environmental Hazards": Where applicable, apply insecticides after plants bloom. Be aware that bees may be foraging on blooming plants around your application site. If you need to make an insecticide application while non-target plants (such as flowering ground cover) in or around your application site are in bloom, mow the blooming plants first. Control drift during insecticide applications. If you rent honeybees, or if there are honey bee colonies nearby, notify the beekeepers before pesticide applications so that they can close or move their hives. Get to know which plants are attractive to bees. For example, hemlocks can be treated with the above neonicotinoid insecticides as bees rarely visit them. Research at The Connecticut Agricultural Experiment Station (CAES) by Dr. Richard Cowles, is looking at which plants transport how much of the neonicotinoids into their nectar and pollen and how quickly and at what application rates. In the future, rates may be lowered for these insecticides, as they are still effective at the lower doses.

ARBORIST LAW Since there is now a landscaper version of the guide it is necessary to distinguish between pesticide applicators with arborist, 3D and those with ornamental and turf 3A, certification categories. Spraying pesticides commercially, to control insects or diseases on fruit, shade or ornamental trees in Connecticut falls under the arborist license. Commercial spraying of turf, ornamental plants or shrubs to control insects, diseases or weeds, falls under the ornamental and turf category. The pesticides listed in the guide are the same for both groups. For more information about pesticide applicators and the arborist law, the booklet [Pertinent Pesticide Statutes and Regulations for Certified Commercial Supervisors and Arborists](#) can be found at the DEEP Pesticide Management Program website.

ACKNOWLEDGEMENTS

Thanks to Dr. James LaMondia, Dr. Richard Cowles, Mr. Thomas Rathier and Mr. Jeff Fengler, CAES, for their valuable help and support. Also, Mss. Christina Berger, Diane Jorsey and Linda Schmidt of DEEP for their assistance. Mr. Charlie Barnett, DAS-BEST, was very helpful.

Horticulture/Pest Management Related Web Sites

**The Connecticut Agricultural Experiment Station
University of Connecticut Integrated Pest Management**

**portal.ct.us/caes
www.ipm.uconn.edu**

Biological Control (Attracting Beneficials):

pss.uvm.edu/ppp/articles/goodbugs.html
www.finegardening.com/how-to/articles/attracting-beneficial-insects.aspx
njaes.rutgers.edu/pubs/publication.asp?pid=fs930
canr.msu.edu/nativeplants/uploads/files/E2973.pdf

Protecting Pollinators:

<https://portal.ct.gov/CAES/Publications/Publications/Pollinator-Information>
<http://nenativeplants.uconn.edu/pollinators.php>
<https://pesticidewardship.org/pollinator-protection/pesticide-applicator-bmps/>

Entomology:

The Connecticut Agricultural Experiment Station	portal.ct.gov/caes
Cornell Cooperative Extension	www.cce.cornell.edu
Entomological Society of America	www.entsoc.org/
Entomology Index of Internet Resources	www.ent.iastate.edu/list/
Florida Pest Alerts	entnemdept.ufl.edu/pestalet/
North Carolina Coop. Ext.	www.ces.ncsu.edu/resources/pests/
Ohio State Plant Facts	plantfacts.osu.edu/

Horticulture Information:

American Hort	www.americanhort.org/
Connecticut Invasive Plant Working Group	www.cipwg.uconn.edu/
Connecticut Tree Protective Association	www.CTPA.org/
Cornell Horticulture	hort.cals.cornell.edu/
E. C. Geiger Hortnet Store	www.hortnet.com/
Horticulture Magazine Online	www.hortmag.com/
National Arborists Association	www.natlarb.com/
Perennial Plant Association	www.perennialplant.org/
Tree Care Industry Association	www.tcia.org/
University of Connecticut Coop. Ext. Forestry	www.ctforestry.uconn.edu/
University of Connecticut Plant Database	www.hort.uconn.edu/plants
University of Maryland Coop. Ext.	extension.umd.edu/
UMass Landscape, Nursery, and Urban Forestry Program	extension.umass.edu/landscape/
University of Vermont Perennial Page	www.uvm.edu/~pass/perry/
Virginia Cooperative Extension	www.ext.vt.edu/

Integrated Pest Management:

Biocontrol Network	www.biconet.com/index.html
Consortium for International Crop Protection	www.IPMnet.org/
Northeast IPM Center	www.northeastipm.org/
US Forest Service IPM	fs.fed.us/foresthealth/protecting-forest/ integrated-pest-managment
Gempler's IPM Almanac	www.gemplers.com/tech/ipm-intro.htm

Koppert Biological Systems	www.koppertus.com/
Insect Parasitic Nematodes	entopsu.edu/extension/factsheets/parasitic-nematodes/
Integrated Pest Management in the US	www.nifa.usda.gov/program/integrated-pest-management-program-ipm
IPM Institute	www.ipminstitute.org
National Park Service IPM Manual	nps.gov/orgs/1027/ipm.htm
Radcliffe's IPM World Textbook	ipmworld.umn.edu/
University of Maryland IPM	extension.umd.edu/ipm
University of Massachusetts AgroEcology	extension.umass.edu/agriculture/

Organic Related:

Extremely Green - Organic gardening supplies	extremelygreen.com/
Green Earth Ag & Turf	greenearthagandturf.com
Orcon Inc. - sells beneficial organisms	www.organiccontrol.com
NOFA Organic Land Care Committee CT/MA	www.organiclandcare.net/
Organic Materials Review Institute	www.omri.org/
Suppliers of Beneficial Organisms in North America	www.cdpr.ca.gov/docs/pestmgt/ipminov/bensuppl.htm
National Organic Program	ams.usda.gov/about-ams/programs-offices/national-organic-program

Ornamental Plant Diseases:

CAES Disease Management Guide	portal.ct.gov/CAES/PDIO/publications/Disease-Management-Guide
Ohio State University	ohioline.osu.edu/topic/horticulture
Penn State University	extension.psu.edu/pests-and-diseases/pes-disease-and-weed-identification/plant-disease-identification-and-control
Virginia Tech University	pubs.ext.vt.edu/tags.resource.html?tag=pubs_ext_vt_edu:plant-diseases#

Pesticide Labels:

Ag Chemical Database	cdms.net/Label-Database
Bayer Turf & Ornamental Greenbook	environmentalscience.bayer.us/turf-and-ornamentals-management
Connecticut DEEP Pesticide Registration	www.greenbook.net/ www.kellysolutions.com/CT/

State and National Agencies:

Animal & Plant Health Inspection Service	www.aphis.usda.gov/
Crop Life America	www.croplifeamerica.org/
National Agricultural Statistics Service	www.nass.usda.gov
Plant and Life Sciences Publishing	cornellstore.com/pals-publishing
NOAA Weather Information	www.weather.gov/
USDA Release of Beneficial Organisms	ars.usda.gov/northeast-area/Newark-de/beneficial-insects-introduction-research-unit
US Forest Service	www.fs.fed.us/

Turfgrass Information:

General Turf Pest Links	extension.illinois.edu/turf/index.cfm
Lawn and Landscape Magazine	www.lawnandlandscape.com/
National Turfgrass Evaluation Program	www.ntep.org/ntep/contents2.shtml
Turfgrass Institute	www.guelphturfgrass.ca/
Turfgrass Information Center	tic.msu.edu/

Weeds:

New Jersey Weed Gallery	njaes.rutgers.edu/weeds/
Weed Science Society of America	www.wssa.net/
UMass Weed Herbarium	extension.umass.edu/landscape/weed-herbarium

REFERENCES

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Chase, A., M. Daughtrey & G. Simone. 1995. Diseases of Annuals and Perennials: Identification and control. Ball Publishing. Batavia, IL.

Clark, R.A. & D.C. Swanson. 2001. Trees, shrubs and vines for low maintenance landscapes. In: Strategies for Plant Health Management of Woody Ornamentals. University of Massachusetts Extension. (413) 545-2717

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Daar, S., H. Olkowski & W. Olkowski. 1992. IPM Training Manual for Wholesale Nursery Growers. Bio-Integral Resource Center, Berkeley, CA. (510) 524-2567

Dirr, M. 2009. Manual of Woody Landscape Plants, 6Th Edition. Stipes Publishing Company. Champaign, IL.

Dreistadt, S.H. 2001. Integrated Pest Management for Floriculture and Nurseries. University of California Division of Agriculture and Natural Resources, Publication 3402. 1-800-994-8849.

Dreistadt, S. H. 2016. Pest of Landscape Trees and Shrubs, An Integrated Pest Management Guide. 3rd Edition. University of California Division of Agriculture and Natural Resources, Publication 3359.

Flint, M.L. & S.H. Dreistadt. 1998. Natural Enemies Handbook: The illustrated guide to biological pest control. UC Division of Agriculture and Natural Resources and University of California Press. Publication 3386.

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Gussack, E., F. Rossi. 2nd Edition. Picture clues to turfgrass problems. Cornell Cooperative Extension. NRAES, #125.

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PLANT HEALTH APPS- Turf MD -American Phytopathological Society
LeafSnap –plant identification based on submitted photographs

SOURCES OF BIOLOGICAL CONTROL ORGANISMS AND IPM MATERIAL

Gempler's
PO Box 5175
Janesville, WI 53547-5175
Ph: 1-800-382-8473
Email: customerservice@gemplers.com

Evergreen Growers Supply
15875 SE 114th Ave, Suite G
Clackamas, OR 97015
Ph: 1-503-908-1946
info@evergreengrowers.com

Beneficial Insectary, Inc.
9664 Tanqueray Ct.
Redding, CA 96003
Ph: 1-530.226.6300
toll-free: 800.477.3715
Greenmethods.com

Great Lakes IPM, Inc.
7563 N Crystal Rd
Vestaburg, MI 48891
Ph: 1-989-268-5693, 800-235-0285
Email: glipm@greatlakesipm.com

Tree-Savers
P.O Box 68
Greentown, PA 18426
Ph: 1-570-871-0088
jayne@tree-savers.com

IPM Laboratories
PO Box 300, 980 Main Street
Locke, NY 13092
Ph: 315-497-2063
ipmlabs.com

Book Suppliers: Bookshelf by Ball Publishing 1-312-337-0747, 800-888-4741

Information: **The Connecticut Agricultural Experiment Station**

Insect Inquiries (New Haven):	203.974.8600
Plant Disease Inquiries (New Haven):	203.974.8601
Soil Testing Lab (New Haven):	203.974.8512
Valley Lab, Information Office:	860.683.4977
Valley Lab, Soil Testing:	860.683.4978

UConn Home and Garden Center	877.486.6271
UConn Soil Testing Lab:	860.486.4274

Rose Hiskes, Diagnostician, Information Office
The Connecticut Agricultural Experiment Station
860.683.4977
Rose.Hiskes@ct.gov

SCIENTIFIC NAME to COMMON NAME INDEX

Scientific Name	Common Name
<i>Abelia</i>	Abelia
<i>Abies</i> spp.	fir
<i>Acer</i> spp.	maple
<i>Acer negundo</i>	boxelder
<i>Acer saccharum</i>	sugar
<i>Aesculus glabra</i>	buckeye, Ohio
<i>Aesculus hippocastanum</i>	horsechestnut
<i>Alnus</i> spp.	alder
<i>Amelanchier</i> spp.	serviceberry or shadbush
<i>Aronia</i> spp.	chokeberry
<i>Berberis</i> spp.	barberry
<i>Betula</i> spp.	birch
<i>Buddleia</i>	butterfly bush
<i>Buxus</i> spp.	boxwood
<i>Calluna</i>	heather
<i>Calocedrus</i>	incense cedar
<i>Carpinus caroliniana</i>	hornbeam
<i>Carya</i> spp.	hickory
<i>Cedrus</i> spp.	cedar
<i>Cedrus atlanticus</i>	Atlas
<i>Celtis occidentalis</i>	hackberry
<i>Cercis canadensis</i>	redbud
<i>Chaenomeles</i>	flowering quince
<i>Chamaecyparis</i> spp.	falsecypress
<i>Clethra alnifolia</i>	summersweet
<i>Cornus</i> spp.	dogwood, flowering
<i>Corylus</i>	filbert or hazelnut
<i>Cotinus</i>	smoketree
<i>Cotoneaster</i> spp.	cotoneaster
<i>Crataegus</i> spp.	hawthorn
<i>Cryptomeria</i> spp.	Cryptomeria
<i>Daphne</i>	Daphne
<i>Erica</i>	heath
<i>Euonymus</i> spp.	Euonymus
<i>Euonymus alatus</i>	burning bush or winged euonymus
<i>Fagus</i> spp.	beech
<i>Forsythia</i>	Forsythia
<i>Ginkgo biloba</i>	Ginkgo or maidenhair tree
<i>Gleditsia triacanthos</i>	honeylocust
<i>Gymnocladus dioica</i>	Kentucky coffee tree
<i>Hamamelis</i> spp.	Witchhazel
<i>Hibiscus syriacus</i>	rose-of-sharon
<i>Hydrangea</i> spp.	Hydrangea
<i>Hypericum calycinum</i>	St. Johnswort
<i>Ilex</i> spp.	holly
<i>Ilex glabra</i>	inkberry
<i>Ilex verticillata</i>	winterberry, common
<i>Juglans</i> spp.	walnut
<i>Juniperus</i> spp.	juniper
<i>Juniperus virginiana</i>	Eastern redcedar
<i>Kalmia latifolia</i>	mountain laurel
<i>Koelreuteria paniculata</i>	golden raintree
<i>Larix</i>	larch
<i>Leucothoe</i> spp.	Leucothoe
<i>Ligustrum</i> spp.	privet
<i>Liquidambar</i>	sweetgum
<i>Liriodendron tulipifera</i>	tuliptree or yellow poplar

Scientific Name	Common Name
<i>Lonicera</i> spp.	honeysuckle
<i>Magnolia</i> spp.	Magnolia
<i>Malus</i> spp.	crabapple
<i>Morus</i> spp.	mulberry
<i>Myrica pensylvanica</i>	bayberry
<i>Nyssa sylvatica</i>	blackgum or tupelo
<i>Oxydendrum arboreum</i>	sourwood
<i>Philadelphus coronarius</i>	mockorange
<i>Picea</i> spp.	spruce
<i>Pieris japonica</i>	andromeda, Japanese
<i>Pinus</i> spp.	pine
<i>Pinus strobus</i>	eastern white
<i>Platanus occidentalis</i>	sycamore
<i>Populus</i> spp.	poplar or aspen
<i>Potentilla fruticosa</i>	cinquefoil
<i>Prunus cistena</i>	cherry, purpleleaf sand
<i>Prunus</i> spp.	cherry, flowering
<i>Prunus serotina</i>	cherry, black
<i>Prunus virginiana</i>	cherry, choke
<i>Prunus cerasifera</i>	plum, purpleleaf
<i>Prunus glandulosa</i>	almond, dwarf flowering
<i>Prunus persica</i>	peach, ornamental
<i>Pseudotsuga menziesii</i>	douglas fir
<i>Pyracantha</i>	firethorn
<i>Pyrus calleryana</i>	pear, flowering
<i>Quercus</i> spp.	oak
<i>Rhododendron</i> spp.	azalea
<i>Rhododendron</i> spp.	rhododendron
<i>Rosa</i> spp.	rose
<i>Salix</i> spp.	willow
<i>Sambucus</i>	elderberry
<i>Sassafras</i>	Sassafras
<i>Sciadopitys verticillata</i>	umbrella pine
<i>Sorbus</i> spp.	mountain ash
<i>Spiraea</i> spp.	spirea
<i>Styrax japonicus</i>	snowbell
<i>Syringa</i> spp.	lilac
<i>Taxodium distichum</i>	baldcypress
<i>Taxus</i> spp.	yew
<i>Thuja</i> spp.	arborvitae
<i>Tilia cordata</i>	linden, little leaf
<i>Tsuga</i> spp.	hemlock
<i>Ulmus</i> spp.	elm
<i>Vaccinium</i>	blueberry
<i>Viburnum</i> spp.	viburnum
<i>Weigela florida</i>	Weigela
<i>Wisteria</i> spp.	Wisteria

COMMON PLANT NAME/PEST INDEX

Common	Plant Genus	Pest	Season	Page
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alder	<i>Alnus spp.</i>	alder lace bug	G	1
		birch and beech girdler	G	43
		poplar and willow borer	G	283
		striped alder sawfly	G	337
almond, dwarf flowering	<i>Prunus glandulosa</i>	apple aphid	G	7
		cankerworms	G	66
		European red mite	D	133
		European red mite	G	134
		fall webworm	G	136
		peachtree borer	G	256
		roundheaded appletree borer	G	312
		terrapi scale	D	350
		terrapi scale	DD	351
		terrapi scale	G	352
		twospotted spider mite	G	364
		white prunicola scale	D	382
		white prunicola scale	G	383
andromeda	<i>Pieris japonica</i>	andromeda lace bug	G	4
		azalea bark scale	D	21
		azalea bark scale	DD	22
		azalea bark scale	G	23
		azalea whitefly	G	29
		black vine weevil (adult)	G	52
		cottony maple leaf scale	D	83
		cottony maple leaf scale	G	84
arborvitae	<i>Thuja</i>	arborvitae leafminer(s)	G	12
		arborvitae weevil	G	14
		bagworm	D	31
		bagworm	DD	32
		bagworm	G	33
		black vine weevil (adult)	G	52
		false Meyer scale	D	138
		false Meyer scale	G	139
		Fletcher scale	D	140
		Fletcher scale	G	141
		juniper scale	D	199
		juniper scale	G	200
		Maskell Scale	G	230
		smaller Japanese cedar longhorn beetle	G	318

Common	Plant Genus	Pest	Season	Page
arborvitae	<i>Thuja</i>	spruce spider mite	D	334
		spruce spider mite	G	335
ash	<i>Fraxinus spp.</i>	ash borer / lilac borer	G	15
		ash plant bugs	G	16
		carpenterworm	G	68
		eastern tent caterpillar	G	106
		emerald ash borer	G	123
		leopard moth	G	211
		mountain ash sawfly	G	233
Azalea	<i>Azalea spp.</i>	redheaded ash borer	G	297
		azalea bark scale	D	21
		azalea bark scale	DD	22
		azalea bark scale	G	23
		azalea lace bug	G	25
		azalea leafminer	G	27
		azalea whitefly	G	29
		black vine weevil (adult)	G	52
		cottony camellia (taxus) scale	D	80
		cottony camellia (taxus) scale	G	81
		fourlined plant bug	G	145
		fruittree leafroller	G	148
		Japanese beetle	G	195
		leafrollers	G	210
		pitted ambrosia beetle	G	282
		rhododendron borer	G	302
		rhododendron lace bug	G	304
		rhododendron leafminer	G	306
		rhododendron stem borer	G	307
		southern red mite	D	320
southern red mite	G	321		
twobanded Japanese weevil	G	362		
baldcypress	<i>Taxodium distichum</i>	Fletcher scale	D	140
		Fletcher scale	G	141
barberry	<i>Berberis</i>	Indian wax scale	D	193
		Indian wax scale	G	194
		twobanded Japanese weevil	G	362
basswood	<i>Tilia americana</i>	basswood aphid	G	37
		basswood lace bug	G	39
		winter moth	D	388
		winter moth	DD	389
		winter moth	G	390

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bayberry	<i>Myrica pensylvanica</i>	apple mealybug	D	9
		apple mealybug	G	10
		calico scale	D	64
		calico scale	G	65
		dogwood borer	G	94
		foxglove aphid	G	147
		redhumped caterpillar	G	300
beautyberry	<i>Callicarpa</i>	cottony camellia (taxus) scale	D	80
		cottony camellia (taxus) scale	G	81
beech	<i>Fagus</i>	Asiatic oak weevil	G	20
		beech scale	G	41
		birch and beech girdler	G	43
		birch lace bug	G	44
		cankerworms	G	66
		cottony maple scale	D	86
		cottony maple scale	G	88
		dogwood borer	G	94
		giant bark aphid	G	150
		gypsy moth	G	169
		large hickory lecanium	D	205
		large hickory lecanium	G	206
		leopard moth	G	211
		locust borer	G	219
		locust leafminer	G	220
		oystershell scale	D	253
		oystershell scale	G	254
		redheaded ash borer	G	297
		woolly beech aphids	G	398
		birch	<i>Betula</i>	alder lace bug
apple and thorn skeletonizer	G			6
Asian Longhorned Beetle	G			18
birch and beech girdler	G			43
birch lace bug	G			44
birch leafminer	G			46
birch skeletonizer	G			48
bronze birch borer	G			62
carpenterworm	G			68
dogwood borer	G			94
dusky birch sawfly	G			100
eastern tent caterpillar	G			106
fall webworm	G			136
giant bark aphid	G			150
large hickory lecanium	D			205

Common	Plant Genus	Pest	Season	Page
birch	<i>Betula</i>	large hickory lecanium	G	206
		locust leafminer	G	220
		oak lecanium scale	D	244
		oak lecanium scale	G	245
		orangestriped oakworm	G	252
		oystershell scale	D	253
		oystershell scale	G	254
		poplar and willow borer	G	283
		potato leafhopper	G	287
		Putnam/rhododendron scale	D	292
		Putnam/rhododendron scale	G	293
		redheaded ash borer	G	297
		terrapien scale	D	350
		terrapien scale	DD	351
		terrapien scale	G	352
		walnut scale	D	375
		walnut scale	G	376
		witchhazel leaf gall aphid (summer)	G	392
		blackgum or tupelo	<i>Nyssa sylvatica</i>	cottony maple leaf scale
cottony maple leaf scale	G			84
eastern tent caterpillar	G			106
fall webworm	G			136
forest tent caterpillar	G			143
gypsy moth	G			169
blueberry	<i>Vaccinium</i>	apple mealybug	D	9
		apple mealybug	G	10
		azalea bark scale	D	21
		azalea bark scale	DD	22
		azalea bark scale	G	23
		dogwood borer	G	94
		Putnam/rhododendron scale	D	292
		Putnam/rhododendron scale	G	293
		rhododendron stem borer	G	307
boxelder	<i>Acer negundo</i>	boxelder bug	G	55
		greenstriped mapleworm	G	167
boxwood	<i>Buxus spp.</i>	boxwood leafminer	G	57
		boxwood mite	D	59
		boxwood mite	G	60
		boxwood psyllid	G	61
		Comstock mealybug	D	75
		Comstock mealybug	G	76
		Indian wax scale	D	193
Indian wax scale	G	194		

Common	Plant Genus	Pest	Season	Page
buckeye, Ohio	<i>Aesculus glabra</i>	bagworm	D	31
		bagworm	DD	32
		bagworm	G	33
		calico scale	D	64
		calico scale	G	65
burning bush, winged euonymus	<i>Euonymus alatus</i>	Asiatic garden beetle	G	19
		Comstock mealybug	D	75
		Comstock mealybug	G	76
		cottony camellia (taxus) scale	D	80
		cottony camellia (taxus) scale	G	81
		fruittree leafroller	G	148
		Japanese beetle	G	195
		leafrollers	G	210
		potato aphid	D	284
potato aphid	G	285		
butterfly bush	<i>Buddleia</i>	Japanese beetle	G	195
		oleander scale	G	250
		twospotted spider mite	G	364
cedar, atlas	<i>Cedrus atlanticus</i>	cryptomeria scale	D	90
		cryptomeria scale	G	91
		eastern pine weevil	DD	101
		eastern pine weevil	G	102
cedar, incense	<i>Calocedrus</i>	juniper scale	D	199
		juniper scale	G	200
cedar	<i>Cedrus</i>	arborvitae weevil	G	14
		bagworm	D	31
		bagworm	DD	32
		bagworm	G	33
		false Meyer scale	D	138
		false Meyer scale	G	139
		spruce spider mite	D	334
		spruce spider mite	G	335
cherry, black	<i>Prunus serotina</i>	apple aphid	G	7
		apple mealybug	D	9
		apple mealybug	G	10
		brown marmorated stinkbug	G	63
		calico scale	D	64
		calico scale	G	65
		cankerworms	G	66
		dogwood borer	G	94

Common	Plant Genus	Pest	Season	Page
cherry, black	<i>Prunus serotina</i>	eastern tent caterpillar	G	106
		European red mite	D	133
		European red mite	G	134
		forest tent caterpillar	G	143
		green peach aphid (spring)	G	161
		large hickory lecanium	D	205
		large hickory lecanium	G	206
		lesser peachtree borer	G	213
		locust borer	G	219
		peachtree borer	G	256
		roundheaded appletree borer	G	312
		terrapi scale	D	350
		terrapi scale	DD	351
		terrapi scale	G	352
		twospotted spider mite	G	364
		white prunicola scale	D	382
		white prunicola scale	G	383
cherry, flowering	<i>Prunus spp.</i>	American plum borer	G	3
		apple and thorn skeletonizer	G	6
		apple mealybug	D	9
		apple mealybug	G	10
		calico scale	D	64
		calico scale	G	65
		cottony maple scale	D	86
		cottony maple scale	G	88
		forest tent caterpillar	G	143
		granulate ambrosia beetle	G	155
		green peach aphid (dormant)	D	160
		green peach aphid (spring)	G	161
		large hickory lecanium	D	205
		large hickory lecanium	G	206
		leopard moth	G	211
		locust leafminer	G	220
		peachtree borer	G	256
		spotted lanternfly	G	325
		white prunicola scale	D	382
		white prunicola scale	G	383
		winter moth	D	388
winter moth	DD	389		
winter moth	G	390		
cherry, purple leaf sand	<i>Prunus cistena</i>	granulate ambrosia beetle	G	155
		peachtree borer	G	256
		spotted lanternfly	G	325

Common	Plant Genus	Pest	Season	Page
chestnut, hybrids	<i>Castanea</i>	apple mealybug	D	9
		apple mealybug	G	10
		dogwood borer	G	94
		leopard moth	G	211
		twig pruner	D	359
		twig pruner	DD	360
		twig pruner	G	361
		twolined chestnut borer	G	363
chokeberry	<i>Aronia</i>	roundheaded appletree borer	G	312
Clematis	<i>Clematis</i>	green peach aphid (summer)	G	163
Cotoneaster	<i>Cotoneaster</i>	apple mealybug	D	9
		apple mealybug	G	10
		hawthorn lace bug	G	172
		oystershell scale	D	253
		oystershell scale	G	254
		pearleaf blister mite	D	259
		pearleaf blister mite	G	260
		potato aphid	D	284
		potato aphid	G	285
		Putnam/rhododendron scale	D	292
		Putnam/rhododendron scale	G	293
		San Jose scale	G	313
		sinuate peartree borer	G	317
		sycamore lace bug	G	340
woolly apple aphid (summer)	G	396		
crabapple	<i>Malus spp.</i>	alder lace bug	G	1
		American plum borer	G	3
		apple and thorn skeletonizer	G	6
		apple aphid	G	7
		apple mealybug	D	9
		apple mealybug	G	10
		bagworm	D	31
		bagworm	DD	32
		bagworm	G	33
		boxelder bug	G	55
		brown marmorated stinkbug	G	63
		calico scale	D	64
		calico scale	G	65
		cankerworms	G	66
		Comstock mealybug	D	75
		Comstock mealybug	G	76
		dogwood borer	G	94
		eastern tent caterpillar	G	106

Common	Plant Genus	Pest	Season	Page
crabapple	<i>Malus spp.</i>	fall webworm	G	136
		fruittree leafroller	G	148
		Japanese beetle	G	195
		large hickory lecanium	D	205
		large hickory lecanium	G	206
		leafhoppers	G	208
		leafrollers	G	210
		leopard moth	G	211
		oystershell scale	D	253
		oystershell scale	G	254
		potato aphid	D	284
		potato aphid	G	285
		Putnam/rhododendron scale	D	292
		Putnam/rhododendron scale	G	293
		redbanded leafroller	G	295
		redheaded ash borer	G	297
		roundheaded appletree borer	G	312
		spotted lanternfly	G	325
		tentiform leafminer	G	349
		winter moth	D	388
		winter moth	DD	389
		winter moth	G	390
		cryptomeria	<i>Cryptomeria</i>	cryptomeria scale
cryptomeria scale	G			91
Maskell Scale	G			230
Daphne	<i>Daphne</i>	euonymus scale	D	124
		euonymus scale	G	125
		oleander scale	G	250
Deutzia	<i>Deutzia</i>	lilac leafminer	G	215
		twobanded Japanese weevil	G	362
dogwood	<i>Cornus</i>	apple mealybug	D	9
		apple mealybug	G	10
		Asiatic oak weevil	G	20
		calico scale	D	64
		calico scale	G	65
		cottony maple leaf scale	D	83
		cottony maple leaf scale	G	84
		cottony maple scale	D	86
		cottony maple scale	G	88
		dogwood borer	G	94
		dogwood clubgall midge	G	96
dogwood sawfly	G	97		
dogwood twig borer	G	99		

Common	Plant Genus	Pest	Season	Page
dogwood	<i>Cornus</i>	fourlined plant bug	G	145
		granulate ambrosia beetle	G	155
		Japanese beetle	G	195
		oystershell scale	D	253
		oystershell scale	G	254
		pitted ambrosia beetle	G	282
		potato aphid	D	284
		potato aphid	G	285
		Putnam/rhododendron scale	D	292
		Putnam/rhododendron scale	G	293
		redheaded ash borer	G	297
		taxus mealybug	D	346
		taxus mealybug	G	347
		walnut scale	D	375
		walnut scale	G	376
douglas fir	<i>Pseudotsuga menziesii</i>	cooley spruce gall adelgid	D	78
		cooley spruce gall adelgid	G	79
		cryptomeria scale	D	90
		cryptomeria scale	G	91
		pine spittlebugs	G	274
		spruce needleminer	G	333
		spruce spider mite	D	334
		spruce spider mite	G	335
eastern redcedar	<i>Juniperus virginiana</i>	arborvitae leafminer(s)	G	12
		bagworm	D	31
		bagworm	DD	32
		bagworm	G	33
elder	<i>Sambucus</i>	currant borer	DD	92
		currant borer	G	93
		elder borer	G	108
		twig pruner	D	359
		twig pruner	DD	360
		twig pruner	G	361
elm	<i>Ulmus</i>	alder lace bug	G	1
		apple mealybug	D	9
		apple mealybug	G	10
		Asian Longhorned Beetle	G	18
		bagworm	D	31
		bagworm	DD	32
		bagworm	G	33
		calico scale	D	64
		calico scale	G	65
		cankerworms	G	66

Common	Plant Genus	Pest	Season	Page
elm	<i>Ulmus</i>	carpenterworm	G	68
		Comstock mealybug	D	75
		Comstock mealybug	G	76
		cottony maple scale	D	86
		cottony maple scale	G	88
		elm bark beetles	DD	109
		elm bark beetles	G	110
		elm casebearer	G	111
		elm cockscombgall aphid	G	112
		elm flea beetle	G	114
		elm leaf aphid	G	115
		elm leaf beetle	G	117
		elm leafminer	G	119
		European fruit lecanium	D	127
		European fruit lecanium	G	128
		European red mite	D	133
		European red mite	G	134
		fall webworm	G	136
		forest tent caterpillar	G	143
		fruittree leafroller	G	148
		gypsy moth	G	169
		hornet clearwing moth	G	190
		Japanese beetle	G	195
		leafrollers	G	210
		leopard moth	G	211
		linden looper	G	217
		locust leafminer	G	220
		oystershell scale	D	253
		oystershell scale	G	254
		Putnam/rhododendron scale	D	292
		Putnam/rhododendron scale	G	293
		redheaded ash borer	G	297
		twig pruner	D	359
		twig pruner	DD	360
		twig pruner	G	361
		twospotted spider mite	G	364
		walnut scale	D	375
		walnut scale	G	376
		woolly apple aphid (spring)	G	394
		woolly elm aphid (spring)	G	400
woolly elm bark aphid	G	403		
Euonymus	<i>Euonymus</i>	black vine weevil (adult)	G	52
		cottony camellia (taxus) scale	D	80
		cottony camellia (taxus) scale	G	81

Common	Plant Genus	Pest	Season	Page
Euonymus	<i>Euonymus</i>	cottony maple scale	D	86
		cottony maple scale	G	88
		euonymus scale	D	124
		euonymus scale	G	125
		Indian wax scale	D	193
		Indian wax scale	G	194
		lilac leafminer	G	215
		twospotted spider mite	G	364
falsecypress	<i>Chamaecyparis</i>	arborvitae weevil	G	14
		cryptomeria scale	D	90
		cryptomeria scale	G	91
		false Meyer scale	D	138
		false Meyer scale	G	139
		juniper scale	D	199
		juniper scale	G	200
		Maskell Scale	G	230
		smaller Japanese cedar longhorn beetle	G	318
filbert or hazelnut	<i>Corylus</i>	alder lace bug	G	1
		apple mealybug	D	9
		apple mealybug	G	10
		dogwood borer	G	94
		European fruit lecanium	D	127
		European fruit lecanium	G	128
		Japanese leafhopper	G	197
		oystershell scale	D	253
		oystershell scale	G	254
		pitted ambrosia beetle	G	282
fir	<i>Abies</i>	balsam twig aphid	G	35
		circular hemlock scale	D	71
		circular hemlock scale	DD	72
		circular hemlock scale	G	73
		cryptomeria scale	D	90
		cryptomeria scale	G	91
		elongate hemlock scale	D	120
		elongate hemlock scale	G	121
		gypsy moth	G	169
		hemlock looper	G	176
		pine oystershell scale	G	269
		pine spittlebugs	G	274
		spruce budworm	G	331
		spruce spider mite	D	334
spruce spider mite	G	335		
firethorn	<i>Pyracantha</i>	apple aphid	G	7

Common	Plant Genus	Pest	Season	Page
firethorn	<i>Pyracantha</i>	calico scale	D	64
		calico scale	G	65
		hawthorn lace bug	G	172
		Indian wax scale	D	193
		Indian wax scale	G	194
		woolly apple aphid (summer)	G	396
Forsythia	<i>Forsythia</i>	fourlined plant bug	G	145
		tarnished plant bug	G	343
		twobanded Japanese weevil	G	362
Ginkgo	<i>Ginkgo biloba</i>	American plum borer	G	3
		fruittree leafroller	G	148
		grape mealybug	D	156
		grape mealybug	G	157
		leafrollers	G	210
		whitemarked tussock moth	G	385
golden raintree	<i>Koelreuteria paniculata</i>	white prunicola scale	D	382
		white prunicola scale	G	383
hackberry	<i>Celtis occidentalis</i>	cottony maple scale	D	86
		cottony maple scale	G	88
		hackberry psyllids	G	171
		large hickory lecanium	D	205
		large hickory lecanium	G	206
		twig pruner	D	359
		twig pruner	DD	360
		twig pruner	G	361
		walnut scale	D	375
		walnut scale	G	376
hawthorn	<i>Crataegus</i>	apple and thorn skeletonizer	G	6
		apple aphid	G	7
		apple mealybug	D	9
		apple mealybug	G	10
		cherry and hawthorn leafminer	G	69
		cottony maple scale	D	86
		cottony maple scale	G	88
		forest tent caterpillar	G	143
		hawthorn lace bug	G	172
		locust leafminer	G	220
		sinuate peartree borer	G	317
		tentiform leafminer	G	349
		terrapi scale	D	350
		terrapi scale	DD	351
		terrapi scale	G	352

Common	Plant Genus	Pest	Season	Page
hawthorn	<i>Crataegus</i>	twospotted spider mite	G	364
		woolly apple aphid (summer)	G	396
heather	<i>Calluna</i>	Japanese beetle	G	195
		oystershell scale	D	253
		oystershell scale	G	254
		twospotted spider mite	G	364
heath	<i>Erica</i>	oystershell scale	D	253
		oystershell scale	G	254
hemlock	<i>Tsuga</i>	bagworm	D	31
		bagworm	DD	32
		bagworm	G	33
		black vine weevil (adult)	G	52
		circular hemlock scale	D	71
		circular hemlock scale	DD	72
		circular hemlock scale	G	73
		cryptomeria scale	D	90
		cryptomeria scale	G	91
		elongate hemlock scale	D	120
		elongate hemlock scale	G	121
		green hemlock needleminer	G	159
		hemlock eriophyid mite	D	174
		hemlock eriophyid mite	G	175
		hemlock looper	G	176
		hemlock woolly adelgid	D	178
		hemlock woolly adelgid	DD	179
		hemlock woolly adelgid	G	180
		Indian wax scale	D	193
		Indian wax scale	G	194
		pine spittlebugs	G	274
		Putnam/rhododendron scale	D	292
		Putnam/rhododendron scale	G	293
spruce budworm	G	331		
spruce spider mite	D	334		
spruce spider mite	G	335		
hickory	<i>Carya</i>	American plum borer	G	3
		Asiatic oak weevil	G	20
		fall webworm	G	136
		giant bark aphid	G	150
		hickory leaf stem gall phylloxera	G	181
		large hickory lecanium	D	205
		large hickory lecanium	G	206
		oak lecanium scale	D	244
		oak lecanium scale	G	245

Common	Plant Genus	Pest	Season	Page		
hickory	<i>Carya</i>	orangestriped oakworm	G	252		
		redheaded ash borer	G	297		
		twig pruner	D	359		
		twig pruner	DD	360		
		twig pruner	G	361		
holly, American	<i>Ilex opaca</i>	Japanese beetle	G	195		
holly	<i>Ilex</i>	Comstock mealybug	D	75		
		Comstock mealybug	G	76		
		cottony camellia (taxus) scale	D	80		
		cottony camellia (taxus) scale	G	81		
		cottony maple leaf scale	D	83		
		cottony maple leaf scale	G	84		
		fall webworm	G	136		
		foxglove aphid	G	147		
		holly leafminer	G	182		
		Indian wax scale	D	193		
		Indian wax scale	G	194		
		native holly leafminer	G	237		
		oystershell scale	D	253		
		oystershell scale	G	254		
		southern red mite	D	320		
		southern red mite	G	321		
		walnut scale	D	375		
		walnut scale	G	376		
		honeylocust	<i>Gleditsia triacanthos</i>	bagworm	D	31
				bagworm	DD	32
bagworm	G			33		
cottony maple scale	D			86		
cottony maple scale	G			88		
fruittree leafroller	G			148		
grape mealybug	D			156		
grape mealybug	G			157		
honeylocust plant bug	G			183		
honeylocust pod gall midge	G			185		
honeylocust spider mite	G			186		
large hickory lecanium	D			205		
large hickory lecanium	G			206		
leafrollers	G			210		
mimosa webworm	G			232		
redheaded ash borer	G			297		
twig pruner	D			359		
twig pruner	DD			360		
twig pruner	G			361		

Common	Plant Genus	Pest	Season	Page
honeylocust	<i>Gleditsia triacanthos</i>	walnut scale	D	375
		walnut scale	G	376
honeysuckle	<i>Lonicera</i>	apple mealybug	D	9
		apple mealybug	G	10
		cottony maple leaf scale	D	83
		cottony maple leaf scale	G	84
		euonymus scale	D	124
		euonymus scale	G	125
		potato aphid	D	284
		potato aphid	G	285
hophornbeam	<i>Ostrya virginiana</i>	birch lace bug	G	44
hornbeam	<i>Carpinus caroliniana</i>	birch and beech girdler	G	43
		pitted ambrosia beetle	G	282
horsechestnut	<i>Aesculus hippocastanum</i>	Asian Longhorned Beetle	G	18
		Comstock mealybug	D	75
		Comstock mealybug	G	76
		Japanese beetle	G	195
		oystershell scale	D	253
		oystershell scale	G	254
		walnut scale	D	375
		walnut scale	G	376
		whitemarked tussock moth	G	385
Hydrangea	<i>Hydrangea</i>	cottony camellia (taxus) scale	D	80
		cottony camellia (taxus) scale	G	81
		foullined plant bug	G	145
		hydrangea leaf tier	G	191
		oystershell scale	D	253
		oystershell scale	G	254
		rose chafer	G	310
		twospotted spider mite	G	364
Juniper	<i>Juniperus</i>	arborvitae leafminer(s)	G	12
		arborvitae weevil	G	14
		false Meyer scale	D	138
		false Meyer scale	G	139
		juniper scale	D	199
		juniper scale	G	200
		juniper webworm	G	202
		Maskell Scale	G	230
		smaller Japanese cedar longhorn beetle	G	318
		spruce spider mite	D	334
spruce spider mite	G	335		

Common	Plant Genus	Pest	Season	Page
katsura	<i>Ceridiphyllum</i>	Asian Longhorned Beetle	G	18
kentucky coffee tree	<i>Gymnocladius dioicus</i>	walnut scale	D	375
		walnut scale	G	376
larch	<i>Larix</i>	larch casebearer	G	203
		larch sawfly	G	204
		leafrollers	G	210
		redbanded leafroller	G	295
		woolly larch adelgid	G	405
laurel, mountain	<i>Kalmia latifolia</i>	apple mealybug	D	9
		apple mealybug	G	10
		black vine weevil (adult)	G	52
		rhododendron borer	G	302
		rhododendron lace bug	G	304
		rhododendron stem borer	G	307
		southern red mite	D	320
		southern red mite	G	321
		twobanded Japanese weevil	G	362
Leucothoe	<i>Leucothoe</i>	andromeda lace bug	G	4
lilac	<i>Syringa</i>	ash borer / lilac borer	G	15
		cottony maple scale	D	86
		cottony maple scale	G	88
		euonymus scale	D	124
		euonymus scale	G	125
		Japanese beetle	G	195
		leopard moth	G	211
		lilac borer / ash borer	G	214
		lilac leafminer	G	215
		locust borer	G	219
		locust leafminer	G	220
		oystershell scale	D	253
		oystershell scale	G	254
		privet thrips	G	290
		twobanded Japanese weevil	G	362
		white prunicola scale	D	382
		white prunicola scale	G	383
linden	<i>Tilia</i>	American plum borer	G	3
		apple mealybug	D	9
		apple mealybug	G	10
		basswood aphid	G	37
		basswood lace bug	G	39
		cankerworms	G	66

Common	Plant Genus	Pest	Season	Page
linden	<i>Tilia</i>	cottony maple scale	D	86
		cottony maple scale	G	88
		giant bark aphid	G	150
		gypsy moth	G	169
		Japanese beetle	G	195
		linden looper	G	217
		oystershell scale	D	253
		oystershell scale	G	254
		Putnam/rhododendron scale	D	292
		Putnam/rhododendron scale	G	293
		redheaded ash borer	G	297
		terrapien scale	D	350
		terrapien scale	DD	351
		terrapien scale	G	352
		tuliptree scale	D	356
		tuliptree scale	G	357
		twig pruner	D	359
		twig pruner	DD	360
		twig pruner	G	361
		walnut lace bug	G	373
walnut scale	D	375		
walnut scale	G	376		
Magnolia	<i>Magnolia</i>	apple mealybug	D	9
		apple mealybug	G	10
		magnolia scale	D	222
		magnolia scale	G	223
		Magnolia serpentine leafminer	G	225
		Putnam/rhododendron scale	D	292
		Putnam/rhododendron scale	G	293
		sassafras weevil	G	315
		tuliptree aphid	G	354
		tuliptree scale	D	356
		tuliptree scale	G	357
		maple, Japanese	<i>Acer palmatum</i>	cottony camellia (taxus) scale
cottony camellia (taxus) scale	G			81
Japanese beetle	G			195
maple, sugar	<i>Acer saccharum</i>	sugar maple borer	G	339
maple	<i>Acer</i>	apple mealybug	D	9
		apple mealybug	G	10
		Asian Longhorned Beetle	G	18
		Asiatic garden beetle	G	19
		bagworm	D	31
		bagworm	DD	32

Common	Plant Genus	Pest	Season	Page
maple	<i>Acer</i>	bagworm	G	33
		birch lace bug	G	44
		boxelder bug	G	55
		calico scale	D	64
		calico scale	G	65
		cankerworms	G	66
		carpenterworm	G	68
		Comstock mealybug	D	75
		Comstock mealybug	G	76
		cottony maple leaf scale	D	83
		cottony maple leaf scale	G	84
		cottony maple scale	D	86
		cottony maple scale	G	88
		eastern tent caterpillar	G	106
		European fruit lecanium	D	127
		European fruit lecanium	G	128
		fall webworm	G	136
		forest tent caterpillar	G	143
		fruittree leafroller	G	148
		greenstriped mapleworm	G	167
		gypsy moth	G	169
		Japanese beetle	G	195
		leafrollers	G	210
		leopard moth	G	211
		linden looper	G	217
		maple aphids	G	226
		maple bladdergall mite	G	228
		maple trumpet skeletonizer	G	229
		orangestriped oakworm	G	252
		oystershell scale	D	253
		oystershell scale	G	254
		potato leafhopper	G	287
		Putnam/rhododendron scale	D	292
		Putnam/rhododendron scale	G	293
		redheaded ash borer	G	297
		spotted lanternfly	G	325
		sugar maple borer	G	339
		taxus mealybug	D	346
		taxus mealybug	G	347
		twig pruner	D	359
		twig pruner	DD	360
		twig pruner	G	361
		twobanded Japanese weevil	G	362
		walnut scale	D	375
		walnut scale	G	376

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maple	<i>Acer</i>	winter moth	D	388
		winter moth	DD	389
		winter moth	G	390
mimosa	<i>Albizia</i>	mimosa webworm	G	232
mockorange, sweet	<i>Philadelphus coronarius</i>	foxglove aphid	G	147
mountain ash, European	<i>Sorbus aucuparia</i>	American plum borer	G	3
		apple and thorn skeletonizer	G	6
		ash borer / lilac borer	G	15
		Asian Longhorned Beetle	G	18
		birch lace bug	G	44
		dogwood borer	G	94
		European red mite	D	133
		European red mite	G	134
		Japanese leafhopper	G	197
		lilac borer / ash borer	G	214
		mountain ash sawfly	G	233
		oystershell scale	D	253
		oystershell scale	G	254
		sinuate peartree borer	G	317
		walnut scale	D	375
		walnut scale	G	376
		woolly apple aphid (summer)	G	396
mulberry	<i>Morus</i>	American plum borer	G	3
		apple mealybug	D	9
		apple mealybug	G	10
		Comstock mealybug	D	75
		Comstock mealybug	G	76
		cottony maple scale	D	86
		cottony maple scale	G	88
		large hickory lecanium	D	205
		large hickory lecanium	G	206
		San Jose scale	G	313
		terrapi scale	D	350
		terrapi scale	DD	351
		terrapi scale	G	352
oak, black	<i>Quercus velutina</i>	black oak stem gall wasp	DD	49
		black oak stem gall wasp	G	50
		horned oak gall	D	187
		horned oak gall	DD	188
		horned oak gall	G	189
oak	<i>Quercus</i>	apple mealybug	D	9

Common	Plant Genus	Pest	Season	Page
oak	<i>Quercus</i>	apple mealybug	G	10
		Asiatic oak weevil	G	20
		bagworm	D	31
		bagworm	DD	32
		bagworm	G	33
		cankerworms	G	66
		carpenterworm	G	68
		cottony maple scale	D	86
		cottony maple scale	G	88
		dogwood borer	G	94
		eastern tent caterpillar	G	106
		European fruit lecanium	D	127
		European fruit lecanium	G	128
		fall webworm	G	136
		forest tent caterpillar	G	143
		giant bark aphid	G	150
		golden oak scale	G	152
		gouty oak gall	DD	153
		gouty oak gall	G	154
		granulate ambrosia beetle	G	155
		greenstriped mapleworm	G	167
		gypsy moth	G	169
		horned oak gall	D	187
		horned oak gall	DD	188
		horned oak gall	G	189
		hornet clearwing moth	G	190
		large hickory lecanium	D	205
		large hickory lecanium	G	206
		leopard moth	G	211
		linden looper	G	217
		locust leafminer	G	220
		oak blotch leafminers	G	239
		oak lace bug	G	241
		oak leaftier	DD	243
		oak lecanium scale	D	244
		oak lecanium scale	G	245
		oak skeletonizer	G	246
		oak spider mite	G	247
		orangestriped oakworm	G	252
		Putnam/rhododendron scale	D	292
		Putnam/rhododendron scale	G	293
		redheaded ash borer	G	297
		spotted lanternfly	G	325
		twig pruner	D	359
		twig pruner	DD	360

Common	Plant Genus	Pest	Season	Page
oak	<i>Quercus</i>	twig pruner	G	361
		twolined chestnut borer	G	363
		winter moth	D	388
		winter moth	DD	389
		winter moth	G	390
peach, ornamental	<i>Prunus persica</i>	American plum borer	G	3
		apple mealybug	D	9
		apple mealybug	G	10
		calico scale	D	64
		calico scale	G	65
		Comstock mealybug	D	75
		Comstock mealybug	G	76
		cottony maple scale	D	86
		cottony maple scale	G	88
		eastern tent caterpillar	G	106
		green peach aphid (dormant)	D	160
		green peach aphid (spring)	G	161
		large hickory lecanium	D	205
		large hickory lecanium	G	206
		lesser peachtree borer	G	213
		peachtree borer	G	256
pear	<i>Pyrus calleryana</i>	calico scale	D	64
		calico scale	G	65
		carpenterworm	G	68
		Comstock mealybug	D	75
		Comstock mealybug	G	76
		cottony maple scale	D	86
		cottony maple scale	G	88
		grape mealybug	D	156
		grape mealybug	G	157
		leopard moth	G	211
		oystershell scale	D	253
		oystershell scale	G	254
		pear psylla	D	257
		pear psylla	G	258
		pearleaf blister mite	D	259
		pearleaf blister mite	G	260
sinuate peartree borer	G	317		
pine, eastern white	<i>Pinus strobus</i>	bagworm	D	31
		bagworm	DD	32
		bagworm	G	33
		black turpentine beetle	G	51
		pine bark adelgid	D	261

Common	Plant Genus	Pest	Season	Page
pine, eastern white	<i>Pinus strobus</i>	pine bark adelgid	DD	262
		pine bark adelgid	G	263
		pine sawflies	G	271
		Southern pine beetle	G	319
		white pine weevil	DD	380
		white pine weevil	G	381
pine	<i>Pinus</i>	bagworm	D	31
		bagworm	DD	32
		bagworm	G	33
		black turpentine beetle	G	51
		Comstock mealybug	D	75
		Comstock mealybug	G	76
		cryptomeria scale	D	90
		cryptomeria scale	G	91
		dogwood borer	G	94
		eastern pine weevil	DD	101
		eastern pine weevil	G	102
		European pine sawfly	G	130
		European pine shoot moth	G	132
		gypsy moth	G	169
		Maskell Scale	G	230
		meadow spittlebug	G	231
		Nantucket pine tip moth	G	235
		pine bark adelgid	D	261
		pine bark adelgid	DD	262
		pine bark adelgid	G	263
		pine eriophyid mite	G	264
		pine needle scale	D	265
		pine needle scale	G	266
		pine needleminer	G	268
		pine oystershell scale	G	269
		pine root collar weevil	G	270
		pine sawflies	G	271
		Pine shoot beetle	G	273
		pine spittlebugs	G	274
		pine tortoise scale	D	275
		pine tortoise scale	G	276
		pine tube moth	G	278
pine webspinning sawflies	G	279		
pine webworm	G	280		
pitch twig moth	G	281		
redheaded pine sawfly	G	298		
Southern pine beetle	G	319		
spotted lanternfly	G	325		

Common	Plant Genus	Pest	Season	Page
pine	<i>Pinus</i>	spruce budworm	G	331
		spruce spider mite	D	334
		spruce spider mite	G	335
		white pine aphid	G	378
		Zimmerman pine moth	G	406
plum, flowering	<i>Prunus cerasifera</i>	apple mealybug	D	9
		apple mealybug	G	10
		boxelder bug	G	55
		cottony maple scale	D	86
		cottony maple scale	G	88
		dogwood borer	G	94
		eastern tent caterpillar	G	106
		granulate ambrosia beetle	G	155
		green peach aphid (dormant)	D	160
		green peach aphid (spring)	G	161
		large hickory lecanium	D	205
		large hickory lecanium	G	206
		leopard moth	G	211
		lesser peachtree borer	G	213
		oystershell scale	D	253
		oystershell scale	G	254
		Putnam/rhododendron scale	D	292
		Putnam/rhododendron scale	G	293
		poplar or aspen	<i>Populus</i>	American plum borer
Asian Longhorned Beetle	G			18
azalea bark scale	D			21
azalea bark scale	DD			22
azalea bark scale	G			23
bronze birch borer	G			62
Comstock mealybug	D			75
Comstock mealybug	G			76
cottony maple scale	D			86
cottony maple scale	G			88
eastern tent caterpillar	G			106
European fruit lecanium	D			127
European fruit lecanium	G			128
imported willow leaf beetle	G			192
leopard moth	G			211
oystershell scale	D			253
oystershell scale	G			254
poplar and willow borer	G			283
redhumped caterpillar	G			300
San Jose scale	G			313
spotted lanternfly	G	325		

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poplar or aspen	<i>Populus</i>	terrapiin scale	D	350
		terrapiin scale	DD	351
		terrapiin scale	G	352
		walnut scale	D	375
		walnut scale	G	376
privet	<i>Ligustrum</i>	ash borer / lilac borer	G	15
		Comstock mealybug	D	75
		Comstock mealybug	G	76
		euonymus scale	D	124
		euonymus scale	G	125
		lilac borer / ash borer	G	214
		lilac leafminer	G	215
		oleander scale	G	250
		privet rust mite	G	289
		privet thrips	G	290
		San Jose scale	G	313
		twobanded Japanese weevil	G	362
		walnut scale	D	375
		walnut scale	G	376
		white prunicola scale	D	382
white prunicola scale	G	383		
pussywillow	<i>Salix discolor</i>	Japanese beetle	G	195
		poplar and willow borer	G	283
quince, flowering	<i>Chaenomeles</i>	apple aphid	G	7
		hawthorn lace bug	G	172
		leopard moth	G	211
		twig pruner	D	359
		twig pruner	DD	360
		twig pruner	G	361
redbud	<i>Cercis canadensis</i>	Asiatic oak weevil	G	20
		European fruit lecanium	D	127
		European fruit lecanium	G	128
		granulate ambrosia beetle	G	155
		greenhouse whitefly	G	165
		oleander scale	G	250
		redhumped caterpillar	G	300
		terrapiin scale	D	350
		terrapiin scale	DD	351
		terrapiin scale	G	352
		twig pruner	D	359
		twig pruner	DD	360
twig pruner	G	361		
		twospotted spider mite	G	364

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redbud	<i>Cercis canadensis</i>	whitemarked tussock moth	G	385
Rhododendron	<i>Rhododendron</i>	Asiatic garden beetle	G	19
		azalea bark scale	D	21
		azalea bark scale	DD	22
		azalea bark scale	G	23
		azalea lace bug	G	25
		azalea whitefly	G	29
		black vine weevil (adult)	G	52
		black vine weevil (larva)	G	54
		cottony camellia (taxus) scale	D	80
		cottony camellia (taxus) scale	G	81
		dogwood twig borer	G	99
		fall webworm	G	136
		pitted ambrosia beetle	G	282
		Putnam/rhododendron scale	D	292
		Putnam/rhododendron scale	G	293
		rhododendron borer	G	302
		rhododendron gall midge	G	303
		rhododendron lace bug	G	304
		rhododendron leafminer	G	306
		rhododendron stem borer	G	307
		southern red mite	D	320
		southern red mite	G	321
		taxus mealybug	D	346
		taxus mealybug	G	347
		twobanded Japanese weevil	G	362
rose of sharon	<i>Hibiscus syriacus</i>	greenhouse whitefly	G	165
		southern red mite	D	320
		southern red mite	G	321
rose	<i>Rosa</i>	cottony maple scale	D	86
		cottony maple scale	G	88
		Japanese beetle	G	195
		leafhoppers	G	208
		potato aphid	D	284
		potato aphid	G	285
		Putnam/rhododendron scale	D	292
		Putnam/rhododendron scale	G	293
		rose aphid	G	308
		rose chafer	G	310
		roseslug(s)	G	311
		twospotted spider mite	G	364
Sassafras	<i>Sassafras</i>	sassafras weevil	G	315
		twig pruner	D	359

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Sassafras	<i>Sassafras</i>	twig pruner	DD	360
		twig pruner	G	361
serviceberry, shadbush	<i>Amelanchier</i>	hawthorn lace bug	G	172
		leopard moth	G	211
		lesser peachtree borer	G	213
		oystershell scale	D	253
		oystershell scale	G	254
		pearleaf blister mite	D	259
		pearleaf blister mite	G	260
		roundheaded appletree borer	G	312
		woolly elm aphid (summer)	G	402
smoketree	<i>Cotinus</i>	leafrollers	G	210
		obliquebanded leafroller	G	249
		San Jose scale	G	313
snowbell	<i>Styrax</i>	andromeda lace bug	G	4
		granulate ambrosia beetle	G	155
sourwood	<i>Oxydendrum arboreum</i>	dogwood twig borer	G	99
		rhododendron stem borer	G	307
spicebush	<i>Lindera benzoin</i>	andromeda lace bug	G	4
		Asiatic oak weevil	G	20
spirea	<i>Spiraea</i>	cottony maple scale	D	86
		cottony maple scale	G	88
		leafrollers	G	210
		obliquebanded leafroller	G	249
		oystershell scale	D	253
		oystershell scale	G	254
		spirea aphid	G	323
spruce, Colorado	<i>Picea pungens</i>	balsam twig aphid	G	35
		cooley spruce gall adelgid	D	78
		cooley spruce gall adelgid	G	79
		spruce bud scale	D	327
		spruce bud scale	DD	328
		spruce bud scale	G	329
		white pine weevil	DD	380
		white pine weevil	G	381
spruce, dwarf alberta	<i>Picea glauca</i> var. 'Conica'	spruce bud scale	D	327
		spruce bud scale	DD	328
		spruce bud scale	G	329
		twospotted spider mite	G	364

Common	Plant Genus	Pest	Season	Page
spruce, Norway	<i>Picea abies</i>	eastern spruce gall adelgid	D	103
		eastern spruce gall adelgid	G	104
		Norway spruce shoot gall midge	G	238
		Southern pine beetle	G	319
		spruce bud scale	D	327
		spruce bud scale	DD	328
		spruce bud scale	G	329
spruce	<i>Picea</i>	bagworm	D	31
		bagworm	DD	32
		bagworm	G	33
		balsam twig aphid	G	35
		circular hemlock scale	D	71
		circular hemlock scale	DD	72
		circular hemlock scale	G	73
		cryptomeria scale	D	90
		cryptomeria scale	G	91
		eastern spruce gall adelgid	D	103
		eastern spruce gall adelgid	G	104
		elongate hemlock scale	D	120
		elongate hemlock scale	G	121
		gypsy moth	G	169
		hemlock looper	G	176
		leafrollers	G	210
		Maskell Scale	G	230
		pine needle scale	D	265
		pine needle scale	G	266
		pine spittlebugs	G	274
		redbanded leafroller	G	295
		spruce bud scale	D	327
		spruce bud scale	DD	328
		spruce bud scale	G	329
		spruce budworm	G	331
		spruce needleminer	G	333
spruce spider mite	D	334		
spruce spider mite	G	335		
white pine weevil	DD	380		
white pine weevil	G	381		
St. Johnswort	<i>Hypericum calycinum</i>	oleander scale	G	250
summersweet	<i>Clethra alnifolia</i>	southern red mite	D	320
		southern red mite	G	321
sweetgum	<i>Liquidambar</i>	American plum borer	G	3
		Asiatic oak weevil	G	20
		calico scale	D	64

Common	Plant Genus	Pest	Season	Page
sweetgum	<i>Liquidambar</i>	calico scale	G	65
		eastern tent caterpillar	G	106
		forest tent caterpillar	G	143
		granulate ambrosia beetle	G	155
		twig pruner	D	359
		twig pruner	DD	360
		twig pruner	G	361
		walnut scale	D	375
		walnut scale	G	376
sycamore	<i>Platanus occidentalis</i>	American plum borer	G	3
		Asian Longhorned Beetle	G	18
		Asiatic oak weevil	G	20
		bagworm	D	31
		bagworm	DD	32
		bagworm	G	33
		cottony maple scale	D	86
		cottony maple scale	G	88
		giant bark aphid	G	150
		Japanese beetle	G	195
		large hickory lecanium	D	205
		large hickory lecanium	G	206
		oak lecanium scale	D	244
		oak lecanium scale	G	245
		oystershell scale	D	253
		oystershell scale	G	254
		sinuate peartree borer	G	317
		sycamore lace bug	G	340
		sycamore plant bug	G	342
		terrapien scale	D	350
terrapien scale	DD	351		
terrapien scale	G	352		
tree of heaven	<i>Ailanthus altissima</i>	brown marmorated stinkbug	G	63
		spotted lanternfly	G	325
tuliptree, yellow poplar	<i>Liriodendron tulipifera</i>	Asiatic oak weevil	G	20
		oystershell scale	D	253
		oystershell scale	G	254
		sassafras weevil	G	315
		tuliptree aphid	G	354
		tuliptree scale	D	356
tuliptree scale	G	357		
umbrella pine	<i>Sciadopitys verticillata</i>	Maskell Scale	G	230
viburnum	<i>Viburnum</i>	Asiatic garden beetle	G	19

Common	Plant Genus	Pest	Season	Page
viburnum	<i>Viburnum</i>	Asiatic oak weevil	G	20
		fall webworm	G	136
		fourlined plant bug	G	145
		foxtail aphid	G	147
		oystershell scale	D	253
		oystershell scale	G	254
		tarnished plant bug	G	343
		viburnum leaf beetle	D	366
		viburnum leaf beetle	DD	368
		viburnum leaf beetle	G	369
walnut	<i>Juglans</i>	American plum borer	G	3
		fall webworm	G	136
		green peach aphid (summer)	G	163
		large hickory lecanium	D	205
		large hickory lecanium	G	206
		leopard moth	G	211
		oystershell scale	D	253
		oystershell scale	G	254
		spotted lanternfly	G	325
		walnut blister mite	G	370
		walnut caterpillar	G	371
		walnut lace bug	G	373
		walnut scale	D	375
		walnut scale	G	376
Weigela	<i>Weigela florida</i>	Comstock mealybug	D	75
		Comstock mealybug	G	76
		fourlined plant bug	G	145
		twobanded Japanese weevil	G	362
willow	<i>Salix</i>	andromeda lace bug	G	4
		apple and thorn skeletonizer	G	6
		Asian Longhorned Beetle	G	18
		Asiatic oak weevil	G	20
		azalea bark scale	D	21
		azalea bark scale	DD	22
		azalea bark scale	G	23
		birch lace bug	G	44
		carpenterworm	G	68
		cottony maple scale	D	86
		cottony maple scale	G	88
		dogwood borer	G	94
		giant bark aphid	G	150
		imported willow leaf beetle	G	192
		large hickory lecanium	D	205

Common	Plant Genus	Pest	Season	Page
willow	<i>Salix</i>	large hickory lecanium	G	206
		leopard moth	G	211
		oystershell scale	D	253
		oystershell scale	G	254
		poplar and willow borer	G	283
		Putnam/rhododendron scale	D	292
		Putnam/rhododendron scale	G	293
		satin moth	G	316
		spotted lanternfly	G	325
		striped alder sawfly	G	337
		willow flea weevil	G	387
winterberry, common	<i>Ilex verticillata</i>	cottony camellia (taxus) scale	D	80
		cottony camellia (taxus) scale	G	81
Wisteria	<i>Wisteria</i>	Comstock mealybug	D	75
		Comstock mealybug	G	76
		Japanese beetle	G	195
		magnolia scale	D	222
		magnolia scale	G	223
		potato leafhopper	G	287
		twig pruner	D	359
		twig pruner	DD	360
twig pruner	G	361		
witchhazel	<i>Hamamelis</i>	potato leafhopper	G	287
		walnut scale	D	375
		walnut scale	G	376
		witchhazel leaf gall aphid (spring)	G	391
yew	<i>Taxus</i>	black vine weevil (adult)	G	52
		black vine weevil (larva)	G	54
		Comstock mealybug	D	75
		Comstock mealybug	G	76
		cottony camellia (taxus) scale	D	80
		cottony camellia (taxus) scale	G	81
		cryptomeria scale	D	90
		cryptomeria scale	G	91
		Fletcher scale	D	140
		Fletcher scale	G	141
		Maskell Scale	G	230
		pine oystershell scale	G	269
		taxus bud mite	G	345
		taxus mealybug	D	346
		taxus mealybug	G	347
		twobanded Japanese weevil	G	362

Common	Plant Genus	Pest	Season	Page
yucca	<i>Yucca</i>	oleander scale	G	250
zelkova, Japanese	<i>Zelkova serrata</i>	calico scale	D	64
		calico scale	G	65
		elm leaf beetle	G	117

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
alder	<i>Alnus</i>
birch	<i>Betula</i>
crabapple	<i>Malus</i>
elm	<i>Ulmus</i>
filbert or hazelnut	<i>Corylus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult	May 01	May 20	foliage	discoloration (brownish spots)	visual inspection
nymph	Jun 01	Sep 30	foliage	discoloration (brownish spots)	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph	May 10 - May 20	240 - 360	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle
nymph, adult	Jul 10 - Jul 20	1200 - 1420	plants bloom: Abelia, golden rain tree, sourwood

Chemical Control*Reference use only. NOT a label substitute.**Select the appropriate insecticide/miticide for the correct life stage of the target pest.*

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C 24 hours
	Lepitect	BEE CAUTION	C 24 hours
	Orthene T,T & O WSP	BEE CAUTION	C 24 hours
azadirachtin	Aza-Direct		C 4 hours
	AzaGuard		C 4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W 12 hours
	Talstar P Professional	BEE CAUTION	C 12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C 12 hours
	Sevin SL	BEE CAUTION	C 12 hours
chlorantraniliprole	Acelepryn		4 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W 24 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C 12 hours
*deltamethrin	Suspend SC	BEE CAUTION	C
*dinotefuran	Safari 20 SG	BEE CAUTION	C 12 hours
*fenpropathrin	Tame 2.4EC	BEE CAUTION	W 24 hours
horticultural oil	Damoil		C 4 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C 12 hours
	Merit 75WSP	BEE CAUTION	C 12 hours
	Xytect 2F	BEE CAUTION	C

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

ALDER LACE BUG

Corythuca pergandei

Page 426 (Johnson & Lyon)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
malathion	Malathion 5 EC	BEE CAUTION	W	12 hours
	Malathion 8 Flowable	BEE CAUTION	C	12 hours
*permethrin	Astro	BEE CAUTION	C	12 hours
	Perm-UP 3.2EC	BEE CAUTION	C	12 hours
pyrethrin	PyGanic	OMRI listed	C	12 hours
	Pyrenone		C	12 hours
*thiamethoxam	Meridian 0.33G	BEE CAUTION	C	12 hours

Additional information on biology and control

The alder lace bug overwinters as an adult hidden in protected areas on or near last year's host. Wingless, 2 - 4mm long larvae withdraw cell contents with their piercing-sucking mouthparts leaving yellow patches visible on the upper leaf surface. The larvae look nothing like the sculptured, lacy adults. Shed skins and dark, shiny fecal spots on foliage can be diagnostic for this pest.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **STEM, TRUNK**

Host Plants: Common Name	Scientific Name
apple	<i>Malus</i>
cherry, flowering	<i>Prunus</i>
Ginkgo	<i>Ginkgo biloba</i>
hickory	<i>Carya</i>
linden	<i>Tilia</i>
mountain ash, European	<i>Sorbus aucuparia</i>
mulberry	<i>Morus</i>
peach	<i>Prunus persica</i>
poplar or aspen	<i>Populus</i>
sweetgum	<i>Liquidambar</i>
sycamore	<i>Platanus occidentalis</i>
walnut	<i>Juglans</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult (moth)	May 01	Jun 01	foliage, trunk	borer tunnels	pheromone traps

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult (moth)	May 10 - May 31	245 - 440	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle

Biological Control

	<u>Comments</u>
<i>Steinernema feltiae</i> (nematode)	Available commercially
<i>Steinernema carpocapsae</i> (nematode)	Available commercially
<i>Heterorhabditis bacteriophora</i> (nematode)	Available commercially

Chemical Control

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
<i>Reference use only. NOT a label substitute.</i>				
<i>Select the appropriate insecticide/miticide for the correct life stage of the target pest.</i>				
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

ANDROMEDA LACE BUG

Stephanitis takeyai

Page 424 (Johnson & Lyon)

GROWING SEASON

Annual cover sprays are suggested.

Frequency with which pest occurs: ANNUAL

Part of plant to treat: FOLIAGE

Host Plants: Common Name	Scientific Name
andromeda	<i>Pieris japonica</i>
Leucothoe	<i>Leucothoe</i>
snowbell	<i>Styrax</i>
spicebush	<i>Lindera benzoin</i>
willow	<i>Salix</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
nymph	May 15	Sep 30	foliage	discoloration (brownish spots)	visual inspection
adult	Jun 01	Sep 30	foliage	discoloration (brownish spots)	visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
egg, nymph	Jun 01 - Jun 10	400 - 550	plants bloom: Kousa dogwood, cranberry bush, beautybush
nymph	Jun 10 - Jun 20	550 - 620	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn
nymph, adult	Jun 20 - Sep 30	620 - 2500	plants bloom: Rhododendron maximum, Spiraea bumalda, Philadelphus

Chemical Control

Comments

Signal
Word

Agricultural
Restricted Entry
Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Lepitect	BEE CAUTION	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
chlorantraniliprole	Acelepryn			4 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W	24 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C	12 hours
*clothianidin	Arena .25 G		C	12 hours
*deltamethrin	Suspend SC	BEE CAUTION	C	
*dinotefuran	Safari 20 SG	BEE CAUTION	C	12 hours
*fenpropathrin	Tame 2.4EC	BEE CAUTION	W	24 hours
horticultural oil	Damoil		C	4 hours
	Sunspray Ultra-Fine Spray Oil		C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C	12 hours
	Merit 75WSP	BEE CAUTION	C	12 hours
	Xytect 2F	BEE CAUTION	C	
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
malathion	Malathion 5 EC	BEE CAUTION	W	12 hours
	Malathion 8 Flowable	BEE CAUTION	C	12 hours
*permethrin	Astro	BEE CAUTION	C	12 hours
	Perm-UP 3.2EC	BEE CAUTION	C	12 hours
pyrethrin	PyGanic	OMRI listed	C	12 hours
	Pyrenone		C	12 hours
*thiamethoxam	Meridian 0.33G	BEE CAUTION	C	12 hours

Additional information on biology and control

The andromeda lace bug overwinters as eggs inserted into the lower surface of the foliage. The majority of the eggs are inserted along the mid-vein of the leaf. The spikey, wingless, 2 - 4mm long nymphs withdraw cell contents using their piercing sucking mouthparts leaving yellow patches on the upper leaf surfaces. Dark, shiny fecal spots and shed skins on lower leaf surfaces can be diagnostic for this insect. There can be up to four generations each year.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

APPLE AND THORN SKELETONIZER**

Choreutis pariana

Page 216 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
apple	<i>Malus</i>
birch	<i>Betula</i>
cherry, flowering	<i>Prunus</i>
crabapple	<i>Malus</i>
hawthorn	<i>Crataegus</i>
mountain ash, European	<i>Sorbus aucuparia</i>
willow	<i>Salix</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
larva (caterpillar)	Jun 01	Sep 01	foliage	defoliation	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
larva	May 01 - May 10	145 - 230	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry
larva	May 10 - Aug 10	230 - 1935	Remainder of season between the beginning and end phenology
larva	Aug 10 - Aug 20	1935 - 2175	plant fruit in color: Mountain ash, cranberry bush

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
B. thuringiensis kurstaki	Biobit HP	<i>Most effective against young larvae.</i>	C	4 hours
	DiPel DF	<i>Most effective against young larvae.</i>	C	4 hours
chlorantraniliprole	Acelepryn			4 hours
*clothianidin + bifenthrin	Aloft GC G	<i>BEE CAUTION</i>	C	12 hours
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
*permethrin	Astro	<i>BEE CAUTION</i>	C	12 hours
	Perm-UP 3.2EC	<i>BEE CAUTION</i>	C	12 hours
pyrethrin	Pyrenone		C	12 hours
spinosad	Conserve SC	<i>Most effective against young larvae.</i>	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
almond, dwarf flowering	<i>Prunus glandulosa</i>
cherry, black	<i>Prunus serotina</i>
crabapple	<i>Malus</i>
firethorn	<i>Pyracantha</i>
hawthorn	<i>Crataegus</i>
quince, flowering	<i>Chaenomeles</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph	May 15	Jul 15	foliage	distortion	visual inspection
adult	Jun 01	Jul 15	foliage	distortion	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph, adult	May 01 - May 10	140 - 230	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry
nymph, adult	May 10 - Jun 10	230 - 560	Remainder of season between the beginning and end phenology
nymph, adult	Jun 10 - Jun 20	560 - 740	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn

Biological Control

	<u>Comments</u>
<i>Orius sp. (predator)</i>	Available commercially; occurs naturally
<i>Hippodamia convergens (lady beetle - predator)</i>	Available commercially; occurs naturally
<i>Diaeretiella rapae (wasp, aphid parasite)</i>	occurs naturally
<i>Deraeocoris nebulosus (mirid bug - predator)</i>	occurs naturally
<i>Chrysoperla sp. (green lacewing - predator)</i>	Available commercially; occurs naturally
<i>Aphidoletes aphidimyza (midge, aphid predator)</i>	Available commercially; occurs naturally
<i>Aphidius matricariae (wasp, aphid parasite)</i>	Available commercially; occurs naturally

Chemical Control

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
<i>Reference use only. NOT a label substitute.</i>			
<i>Select the appropriate insecticide/miticide for the correct life stage of the target pest.</i>			
*abamectin	Mauget Abacide 2	BEE CAUTION	W
acephate	Acephate 97 WDG	BEE CAUTION	C 24 hours
	Lepitect	BEE CAUTION	C 24 hours
	Orthene T,T & O WSP	BEE CAUTION	C 24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C 12 hours
azadirachtin	Aza-Direct		C 4 hours
	AzaGuard		C 4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W 12 hours
	Talstar P Professional	BEE CAUTION	C 12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

APPLE APHID***Aphis pomi*

Page 292, 300 (Johnson & Lyon)

Chemical Control*Reference use only. NOT a label substitute.**Select the appropriate insecticide/miticide for the correct life stage of the target pest.*

		<u>Comments</u>	<u>Signal</u>	<u>Agricultural</u>
			<u>Word</u>	<u>Restricted Entry</u>
				<u>Interval (REI)^</u>
carbaryl	Carbaryl 4L	<i>BEE CAUTION</i>	C	12 hours
	Sevin SL	<i>BEE CAUTION</i>	C	12 hours
chlorantraniliprole	Acelepryn			4 hours
*chlorpyrifos	Chlorpyrifos 4E AG	<i>Non-residential, BEE CAUTION</i>	W	24 hours
*clothianidin + bifenthrin	Aloft GC G	<i>BEE CAUTION</i>	C	12 hours
*clothianidin	Arena 50 WDG		C	12 hours
*deltamethrin	Suspend SC	<i>BEE CAUTION</i>	C	
*dinotefuran	Safari 20 SG	<i>BEE CAUTION</i>	C	12 hours
*fenpropathrin	Tame 2.4EC	<i>BEE CAUTION</i>	W	24 hours
flonicamid	Aria		C	12 hours
horticultural oil	Damoil		C	4 hours
	Sunspray Ultra-Fine Spray Oil		C	4 hours
*imidacloprid	Mallet 75 WSP	<i>BEE CAUTION</i>	C	12 hours
	Merit 75WSP	<i>BEE CAUTION</i>	C	12 hours
	Xytect 2F	<i>BEE CAUTION</i>	C	
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
malathion	Malathion 5 EC	<i>BEE CAUTION</i>	W	12 hours
	Malathion 8 Flowable	<i>BEE CAUTION</i>	C	12 hours
*permethrin	Astro	<i>BEE CAUTION</i>	C	12 hours
pymetrozine	Endeavor		C	12 hours
pyrethrin	PyGanic	<i>OMRI listed</i>	C	12 hours
	Pyrenone		C	12 hours
*thiamethoxam	Meridian 0.33G	<i>BEE CAUTION</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

DORMANT SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE, STEMS**

Host Plants: Common Name	Scientific Name
apple	<i>Malus</i>
bayberry	<i>Myrica pensylvanica</i>
blueberry	<i>Vaccinium</i>
cherry, black	<i>Prunus serotina</i>
cherry, flowering	<i>Prunus</i>
chestnut, hybrids	<i>Castanea</i>
Cotoneaster	<i>Cotoneaster</i>
dogwood	<i>Cornus</i>
elm	<i>Ulmus</i>
filbert or hazelnut	<i>Corylus</i>
hawthorn	<i>Crataegus</i>
honeysuckle	<i>Lonicera</i>
linden	<i>Tilia</i>
Magnolia	<i>Magnolia</i>
maple	<i>Acer</i>
mulberry	<i>Morus</i>
oak	<i>Quercus</i>
plum	<i>Prunus cerasifera</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph	Mar 01	Apr 10	bark, foliage	discoloration, twig dieback	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph	Mar 01 - Apr 10	0 - 40	None Offered

Chemical Control

Comments

Signal Agricultural Restricted Entry
Word Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

horticultural oil	Damoil	C	4 hours
	Sunspray Ultra-Fine Spray Oil	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

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*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

APPLE MEALYBUG**

Phenacoccus aceris

Page 324 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE, STEMS**

<u>Host Plants: Common Name</u>	<u>Scientific Name</u>
apple	<i>Malus</i>
bayberry	<i>Myrica pensylvanica</i>
blueberry	<i>Vaccinium</i>
cherry, black	<i>Prunus serotina</i>
cherry, flowering	<i>Prunus</i>
chestnut, hybrids	<i>Castanea</i>
Cotoneaster	<i>Cotoneaster</i>
dogwood	<i>Cornus</i>
elm	<i>Ulmus</i>
filbert or hazelnut	<i>Corylus</i>
hawthorn	<i>Crataegus</i>
honeysuckle	<i>Lonicera</i>
laurel, mountain	<i>Kalmia latifolia</i>
linden	<i>Tilia</i>
Magnolia	<i>Magnolia</i>
maple	<i>Acer</i>
mulberry	<i>Morus</i>
oak	<i>Quercus</i>
peach	<i>Prunus persica</i>
plum	<i>Prunus cerasifera</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph, adult	May 15	Sep 30	bark, foliage	discoloration, twig dieback	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
immature, adult	May 01 - May 10	145 - 230	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry
immature, adult	May 10 - Jul 31	230 - 1675	Remainder of season between the beginning and end phenology
immature, adult	Aug 01 - Aug 10	1700 - 1935	plant bloom: Pee Gee Hydrangea blooms turn pink

Biological Control

Cryptolaemus montrouzieri (lady beetle predator)

Comments

Available commercially; occurs naturally

Chrysoperla sp. (green lacewing - predator)

Available commercially; occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

Comments

<u>Signal</u>	<u>Agricultural Restricted Entry</u>
<u>Word</u>	<u>Interval (REI)^</u>

acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

Chemical Control*Reference use only. NOT a label substitute.**Select the appropriate insecticide/miticide for the correct life stage of the target pest.*

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C	12 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C	12 hours
*clothianidin	Arena 50 WDG		C	12 hours
*deltamethrin	Suspend SC	BEE CAUTION	C	
*dinotefuran	Safari 20 SG	BEE CAUTION	C	12 hours
*fenpropathrin	Tame 2.4EC	BEE CAUTION	W	24 hours
fenpyroximate	Akari 5SC	Suppression	W	12 hours
flonicamid	Aria		C	12 hours
horticultural oil	Damoil		C	4 hours
	Sunspray Ultra-Fine Spray Oil		C	4 hours
*imidacloprid	Merit 75WSP	BEE CAUTION	C	12 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
malathion	Malathion 5 EC	BEE CAUTION	W	12 hours
	Malathion 8 Flowable	BEE CAUTION	C	12 hours
*permethrin	Astro	BEE CAUTION	C	12 hours
	Perm-UP 3.2EC	BEE CAUTION	C	12 hours
pyrethrin	PyGanic	OMRI listed	C	12 hours
*thiamethoxam	Meridian 0.33G	BEE CAUTION	C	12 hours

Additional information on biology and control

This page may contain additional information in the future.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

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ARBORVITAE LEAFMINER(S)

Argyresthia sp

Page 42 (Johnson & Lyon) Page

11 (Adams & Packauskas)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
arborvitae	<i>Thuja</i>
eastern redcedar	<i>Juniperus virginiana</i>
Juniper	<i>Juniperus</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
adult (moth)	Jun 10	Jul 10	foliage		visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
larva	May 10 - May 20	150 - 260	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle
larva/adult	May 20 - May 31	260 - 425	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark
larva/adult	Jun 01 - Jun 10	440 - 565	plants bloom: Kousa dogwood, cranberry bush, beautybush
adult	Jun 10 - Jun 20	565 - 740	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn
adult	Jul 10 - Jul 20	1200 - 1420	plants bloom: Abelia, golden rain tree, sourwood

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		Comments	Signal Word	Agricultural Restricted Entry Interval (REI)^
*abamectin	Mauget Abacide 2	BEE CAUTION	W	
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Lepitect	BEE CAUTION	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C	12 hours
*diflubenzuron	Dimilin 25W	Effective against immatures. Bee caution.	C	12 hours
*dinotefuran	Safari 20 SG	BEE CAUTION	C	12 hours
*emamectin benzoate	Tree-age	BEE CAUTION	W	
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C	12 hours
	Merit 75WSP	BEE CAUTION	C	12 hours
	Xylect 2F	BEE CAUTION	C	
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
*permethrin	Astro	BEE CAUTION	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

Comments

Signal **Agricultural**
Word **Restricted Entry**
 Interval (REI)^

	Perm-UP 3.2EC	<i>BEE CAUTION</i>	C	12 hours
pyrethrin	PyGanic	<i>OMRI listed</i>	C	12 hours
*thiamethoxam	Meridian 0.33G	<i>BEE CAUTION</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide **ESA approved common name ^for agricultural applications only.

ARBORVITAE WEEVIL**

Phyllobius intrusus

Page 240, 244 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

<u>Host Plants: Common Name</u>	<u>Scientific Name</u>
arborvitae	<i>Thuja</i>
cedar	<i>Cedrus</i>
falsecypress	<i>Chamaecyparis</i>
Juniper	<i>Juniperus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult	Jun 01	Aug 31	foliage	defoliation (leafnotching)	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult	May 10 - May 20	150 - 260	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
pyrethrin	Pyrenone		C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

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**ESA approved common name

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GROWING SEASON

Apply thorough treatment only when pest stage found.

Host Plants: Common Name	Scientific Name
ash	<i>Fraxinus</i>
lilac	<i>Syringa</i>
mountain ash, European	<i>Sorbus aucuparia</i>
privet	<i>Ligustrum</i>

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	Agricultural Restricted Entry Interval (REI)^
*abamectin	Mauget Abacide 2	BEE CAUTION	W	
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W	24 hours
*emamectin benzoate	Tree-age	BEE CAUTION	W	
*permethrin	Astro	BEE CAUTION	C	12 hours
	Perm-UP 3.2EC	BEE CAUTION	C	12 hours

Additional information on biology and control

See "lilac borer / ash borer" for details

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

ASH PLANT BUGS**

Tropidosteptes sp

Page 402 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
ash	<i>Fraxinus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph	May 15	Sep 30	foliage	discoloration (brownish spots)	visual inspection
adult	Jun 01	Sep 30	foliage	discoloration (brownish spots)	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph	May 10 - May 20	230 - 310	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle
nymph	May 20 - May 31	310 - 425	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark
nymph	Jun 01 - Jun 10	440 - 565	plants bloom: Kousa dogwood, cranberry bush, beautybush
nymph, adult	Jul 01 - Jul 31	990 - 1675	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*abamectin	Mauget Abacide 2 <i>BEE CAUTION</i>	W	
acetamiprid	TriStar 8.5 SL <i>BEE CAUTION</i>	C	12 hours
azadirachtin	Aza-Direct AzaGuard <i>BEE CAUTION</i>	C C	4 hours 4 hours
*bifenthrin	Onyx Pro Talstar P Professional <i>BEE CAUTION</i>	W C	12 hours 12 hours
carbaryl	Carbaryl 4L Sevin SL <i>BEE CAUTION</i>	C C	12 hours 12 hours
*chlorpyrifos	Chlorpyrifos 4E AG <i>Non-residential, BEE CAUTION</i>	W	24 hours
*clothianidin + bifenthrin	Aloft GC G <i>BEE CAUTION</i>	C	12 hours
*deltamethrin	Suspend SC <i>BEE CAUTION</i>	C	
flonicamid	Aria <i>BEE CAUTION</i>	C	12 hours
horticultural oil	Damoil <i>BEE CAUTION</i>	C	4 hours
*imidacloprid	Merit 75WSP <i>BEE CAUTION</i>	C	12 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate M-Pede <i>BEE CAUTION</i>	W W	12 hours 12 hours
lambda-cyhalothrin	Demand CS <i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC <i>BEE CAUTION</i>	C	24 hours
malathion	Malathion 8 Flowable <i>BEE CAUTION</i>	C	12 hours
*permethrin	Astro <i>BEE CAUTION</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

Comments

Signal **Agricultural**
Word **Restricted Entry**
 Interval (REI)^

	Perm-UP 3.2EC	<i>BEE CAUTION</i>	C	12 hours
pyrethrin	Pyrenone		C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

***restricted use pesticide**

****ESA approved common name**

^for agricultural applications only.

ASIAN LONGHORNED BEETLE**

Anoplophora glabripennis

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **RARE**

Part of plant to treat: **TRUNK, BRANCH**

<u>Host Plants: Common Name</u>	<u>Scientific Name</u>
birch	<i>Betula</i>
elm	<i>Ulmus</i>
horsechestnut	<i>Aesculus hippocastanum</i>
katsura	<i>Ceridiphyllum</i>
maple	<i>Acer</i>
mountain ash, European	<i>Sorbus aucuparia</i>
poplar or aspen	<i>Populus</i>
sycamore	<i>Platanus occidentalis</i>
willow	<i>Salix</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult (beetle)	Jul 01	Oct 31	foliage, trunk	defoliation (leaf notching)	visual inspection
larva in stems	Nov 01	Jun 30	trunk, branch	borer tunnels	visual inspection

Non Chemical Control

Remove and destroy badly infested branch & tree parts.

Additional information on biology and control

As of January 2019, the Asian longhorned beetle (ALB) has not been found in Connecticut. The closest known populations are Worcester MA and New York City. While they prefer to attack maple, birch, elm, willow and horsechestnut, they will also attack poplar, sycamore, mimosa, katsura, ash and mountain ash. Goldenrain tree is also a host. Adults emerge from trees in the summer, starting after 1600 degree days, when Rose of Sharon begins to bloom. Adults are 1-1.5” long, have a shiny black body with white spots on the wing covers and long, black and white striped antennae. The beetles mate, and females chew pits in the bark of host trees to lay eggs. Eggs hatch in 10 - 15 days, and the larvae first feed on the conducting tissue under the bark. As larvae grow they move deeper into the heartwood of the host tree. Larvae are white and wormlike, and grow to about 2” in length. Egg-laying ends with the first frost, and adults die soon after. Larvae are the only stage of ALB that overwinters, staying inside the tree's heartwood, where they are protected from weather and predators. The larvae will pupate in the spring, and be ready to emerge as adults in the summer. This lifecycle usually takes 1 year, but if an egg hatches late in the growing season, it may take 2 years to develop. If you suspect that you have found ALB in Connecticut, you must notify the Connecticut Agricultural Experiment Station at (203) 974 8474 or email photos to CAES.StateEntomologist@ct.gov.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
burning bush, winged euonymus	<i>Euonymus alatus</i>
maple	<i>Acer</i>
Rhododendron	<i>Rhododendron</i>
viburnum	<i>Viburnum</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult	Jun 10	Jul 31	foliage	some notching	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult	Jun 10 - Jun 20	563 - 737	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn
adult	Jun 20 - Jul 20	737 - 1417	Remainder of season between the beginning and end phenology
adult	Jul 20 - Jul 31	1417 - 1673	plants bloom: butterfly bush, Clethra alnifolia, false spirea

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C	12 hours
malathion	Malathion 5 EC	BEE CAUTION	W	12 hours
	Malathion 8 Flowable	BEE CAUTION	C	12 hours
pyrethrin	Pyrenone		C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

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ASIATIC OAK WEEVIL**

Cyrtopistomus castaneus

Page 240, 244 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE**

<u>Host Plants: Common Name</u>	<u>Scientific Name</u>
apple	<i>Malus</i>
beechn	<i>Fagus</i>
dogwood	<i>Cornus</i>
hickory	<i>Carya</i>
oak	<i>Quercus</i>
redbud	<i>Cercis canadensis</i>
spicebush	<i>Lindera benzoin</i>
sweetgum	<i>Liquidambar</i>
sycamore	<i>Platanus occidentalis</i>
tuliptree, yellow poplar	<i>Liriodendron tulipifera</i>
viburnum	<i>Viburnum</i>
willow	<i>Salix</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult	Jun 01	Sep 15	foliage	defoliation (leaf notching)	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult	Jun 01 - Jun 10	437 - 563	plants bloom: Kousa dogwood, cranberry bush, beautybush
adult	Jun 10 - Sep 01	563 - 2418	Remainder of season between the beginning and end phenology
adult	Sep 01 - Sep 10	2418 - 2576	plant fruit in color: sweet autumn clematis, Polygonum aubertii

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C 24 hours
	Orthene T,T & O WSP	BEE CAUTION	C 24 hours
azadirachtin	Aza-Direct		C 4 hours
	AzaGuard		C 4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W 12 hours
	Talstar P Professional	BEE CAUTION	C 12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C 12 hours
	Sevin SL	BEE CAUTION	C 12 hours
pyrethrin	Pyrenone		C 12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

DORMANT SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**Part of plant to treat: **STEM, TRUNK**

Host Plants: Common Name	Scientific Name
andromeda	<i>Pieris japonica</i>
Azalea	<i>Azalea</i>
blueberry	<i>Vaccinium</i>
poplar or aspen	<i>Populus</i>
Rhododendron	<i>Rhododendron</i>
willow	<i>Salix</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph	Mar 01	Apr 10	bark	discoloration, dieback	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult	Mar 01 - Apr 10	0 - 41	None Offered

Chemical Control**Comments**

Signal Agricultural
Restricted Entry
Word Interval (REI)^

*Reference use only. NOT a label substitute.**Select the appropriate insecticide/miticide for the correct life stage of the target pest.*

horticultural oil	Damoil	C	4 hours
	Sunspray Ultra-Fine SprayOil	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

AZALEA BARK SCALE**

Eriococcus azaleae

Page 336 (Johnson & Lyon)

DELAYED DORMANT

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **STEM, TRUNK**

Host Plants: Common Name	Scientific Name
andromeda	<i>Pieris japonica</i>
Azalea	<i>Azalea</i>
blueberry	<i>Vaccinium</i>
poplar or aspen	<i>Populus</i>
Rhododendron	<i>Rhododendron</i>
willow	<i>Salix</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph	Apr 10	Apr 20	bark	discoloration, twig dieback	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult	Apr 10 - Apr 20	41 - 96	None Offered

Chemical Control

Comments

Signal Agricultural
Word Restricted Entry
 Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

horticultural oil	Damoil	C	4 hours
	Sunspray Ultra-Fine SprayOil	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**Part of plant to treat: **STEM, TRUNK**

Host Plants: Common Name	Scientific Name
andromeda	<i>Pieris japonica</i>
Azalea	<i>Azalea</i>
blueberry	<i>Vaccinium</i>
poplar or aspen	<i>Populus</i>
Rhododendron	<i>Rhododendron</i>
willow	<i>Salix</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult	May 15	Jun 15	bark	discoloration, twig dieback	visual inspection
crawler	Jul 01	Jul 31	bark	discoloration, twig dieback	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
egg	Jun 20 - Jul 15	724 - 1272	plants bloom: Rhododendron maximum, Spiraea bumalda, Philadelphus
crawler	Jul 01 - Jul 31	960 - 1659	plants bloom: Ceanothus americanus, Clematis jackmanii, Tilia cordata

Biological Control*Lindorus lophanthae* (lady beetle - scale predator)*Cryptolaemus montrouzieri* (lady beetle predator)*Chrysoperla* sp. (green lacewing - predator)*Chilocorus stigma* (lady beetle - predator)**Comments**

Available commercially

Available commercially; occurs naturally

Available commercially; occurs naturally

occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Lepitect	Effective against immatures. Bee caution.	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C	12 hours
*bifenthrin	Talstar P Professional	Effective against immatures. Bee caution.	C	12 hours
carbaryl	Carbaryl 4L	Effective against immatures. Bee caution.	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C	12 hours
*deltamethrin	Suspend SC	Effective against immatures. Bee caution.	C	
*dinotefuran	Safari 20 SG	BEE CAUTION	C	12 hours
flonicamid	Aria		C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

AZALEA BARK SCALE**

Eriococcus azaleae

Page 336 (Johnson & Lyon)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
horticultural oil	Damoil		C	4 hours
	Sunspray Ultra-Fine Spray Oil	<i>Only effective against immatures.</i>	C	4 hours
*imidacloprid	Merit 75WSP	<i>BEE CAUTION</i>	C	12 hours
	Xytect 2F	<i>BEE CAUTION</i>	C	
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
lambda-cyhalothrin	Demand CS	<i>Effective against immatures. Bee caution.</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>Effective against immatures. Bee caution.</i>	C	24 hours
malathion	Malathion 5 EC	<i>Effective against immatures. Bee caution.</i>	W	12 hours
	Malathion 8 Flowable	<i>Effective against immatures. Bee caution.</i>	C	12 hours
pyriproxyfen	Distance IGR	<i>most effective against immature stages</i>	C	12 hours

Additional information on biology and control

Physically this insect resembles a mealybug, but it is a scale in the family Eriococcidae. The insects do produce honey dew like the soft scales. There is one generation per year in Connecticut. The partially grown scales overwinter in cracks, crevices and crotches of twigs and branches. Eggs are laid in the spring and hatch in late June through July. Crawlers are present from late June through July. Under the white lacy covering, the female scale is a dark purple. Males are half the size of the 3mm long females.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
Azalea	<i>Azalea</i>
Rhododendron	<i>Rhododendron</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph	May 15	Sep 30	foliage	discoloration (brownish spots)	visual inspection
adult	Jun 01	Sep 30	foliage	discoloration (brownish spots)	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
egg, immature	Jun 01 - Jun 10	400 - 550	plants bloom: Kousa dogwood, cranberry bush, beautybush
immature	Jun 10 - Jun 20	551 - 617	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn
immature, adult	Jun 20 - Sep 01	618 - 2500	rest of season

Chemical Control*Reference use only. NOT a label substitute.**Select the appropriate insecticide/miticide for the correct life stage of the target pest.*

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C 24 hours
	Lepitect	BEE CAUTION	C 24 hours
	Orthene T,T & O WSP	BEE CAUTION	C 24 hours
azadirachtin	Aza-Direct		C 4 hours
	AzaGuard		C 4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W 12 hours
	Talstar P Professional	BEE CAUTION	C 12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C 12 hours
	Sevin SL	BEE CAUTION	C 12 hours
chlorantraniliprole	Acelepryn		4 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W 24 hours
*clothianidin	Arena .25 G		C 12 hours
*deltamethrin	Suspend SC	BEE CAUTION	C
*dinotefuran	Safari 20 SG	BEE CAUTION	C 12 hours
*fenpropathrin	Tame 2.4EC	BEE CAUTION	W 24 hours
horticultural oil	Damoil		C 4 hours
	Sunspray Ultra-Fine Spray Oil		C 4 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C 12 hours
	Merit 75WSP	BEE CAUTION	C 12 hours
	Xytect 2F	BEE CAUTION	C
insecticidal soap	Des-X Insecticidal Soap Concentrate		W 12 hours
	M-Pede		W 12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

AZALEA LACE BUG**

Stephanitis pyroides

Page 424 (Johnson & Lyon)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
malathion	Malathion 5 EC	BEE CAUTION	W	12 hours
	Malathion 8 Flowable	BEE CAUTION	C	12 hours
*permethrin	Astro	BEE CAUTION	C	12 hours
	Perm-UP 3.2EC	BEE CAUTION	C	12 hours
pyrethrin	PyGanic	OMRI listed	C	12 hours
	Pyrenone		C	12 hours
*thiamethoxam	Meridian 0.33G	BEE CAUTION	C	12 hours

Additional information on biology and control

The azalea lace bug overwinters as eggs glued along the lower midvein on foliage. Spikey, wingless, 2 - 4 mm long nymphs feed from the undersides of leaves removing chlorophyll and leaving behind dark, shiny fecal spots. Adults are very sculptured with two lacy wings. There are multiple generations per year. If not treated early, leaves will be brown and fall before the end of the season. Damage is more severe on plants grown in sunny locations.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
Azalea	<i>Azalea</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult (moth)	Jun 01	Jul 01	foliage		visual inspection
larva (caterpillar)	Jun 15	Jul 15	foliage	discoloration (mining), leaf-folding	visual inspection
adult	Aug 01	Sep 01	foliage		visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult	Jun 01 - Jun 30	450 - 800	plants bloom: Kousa dogwood, cranberry bush, beautybush
larva, adult	Jul 10 - Jul 20	1260 - 1500	plants bloom: Abelia, golden rain tree, sourwood

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	<i>BEE CAUTION</i>	C	24 hours
	Lepitect	<i>BEE CAUTION</i>	C	24 hours
	Orthene T,T & O WSP	<i>BEE CAUTION</i>	C	24 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
*bifenthrin	Onyx Pro	<i>BEE CAUTION</i>	W	12 hours
	Talstar P Professional	<i>BEE CAUTION</i>	C	12 hours
carbaryl	Carbaryl 4L	<i>BEE CAUTION</i>	C	12 hours
	Sevin SL	<i>BEE CAUTION</i>	C	12 hours
*clothianidin	Arena .25 G		C	12 hours
*diflubenzuron	Dimilin 25W	<i>Effective against immatures. Bee caution.</i>	C	12 hours
*dinotefuran	Safari 20 SG	<i>BEE CAUTION</i>	C	12 hours
*emamectin benzoate	Tree-age	<i>BEE CAUTION</i>	W	
*fenpropathrin	Tame 2.4EC	<i>BEE CAUTION</i>	W	24 hours
*imidacloprid	Mallet 75 WSP	<i>BEE CAUTION</i>	C	12 hours
	Merit 75WSP	<i>BEE CAUTION</i>	C	12 hours
	Xytext 2F	<i>BEE CAUTION</i>	C	
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
*permethrin	Astro	<i>BEE CAUTION</i>	C	12 hours
	Perm-UP 3.2EC	<i>BEE CAUTION</i>	C	12 hours
*thiamethoxam	Meridian 0.33G	<i>BEE CAUTION</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

AZALEA LEAFMINER**

Caloptilia azaleela

Page 202 (Johnson & Lyon)

Page 11 (Adams & Packauskas)

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

***restricted use pesticide**

****ESA approved common name**

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **RARE**Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
andromeda	<i>Pieris japonica</i>
Azalea	<i>Azalea</i>
Rhododendron	<i>Rhododendron</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
nymph	Jun 01	Sep 30	foliage	discoloration, leaf drop	visual inspection, sticky cards
adult	Jun 01	Sep 30	foliage	discoloration, leaf drop	visual inspection, sticky cards

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
immature	Jun 01 - Jun 10	450 - 540	plants bloom: Kousa dogwood, cranberry bush, beautybush
nymph	Jun 10 - Jun 20	540 - 725	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn
immature, adult	Jul 10 - Jul 20	1250 - 1500	plants bloom: Abelia, golden rain tree, sourwood
immature, adult	Aug 10 - Aug 20	2032 - 2150	plant fruit in color: Mountain ash, cranberry bush

Biological Control*Encarsia formosa* (parasitic wasp)*Delphastus catalinae* (lady beetle - predator)*Chrysoperla sp.* (green lacewing - predator)**Comments**

Available commercially

Available commercially

Available commercially; occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C	12 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours
buprofezin	Talus 70DF	Only effective against immatures.	W	12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W	24 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C	12 hours
*clothianidin	Arena .25 G		C	12 hours
	Arena 50 WDG		C	12 hours
fenazaquin	Magus	BEE CAUTION	W	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

AZALEA WHITEFLY**

Pealius azaleae

Page 318 (Johnson & Lyon)

<u>Chemical Control</u>		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
<i>Reference use only. NOT a label substitute.</i>				
<i>Select the appropriate insecticide/miticide for the correct life stage of the target pest.</i>				
fenpyroximate	Akari 5SC	<i>Supression</i>	W	12 hours
flonicamid	Aria		C	12 hours
horticultural oil	Damoil		C	4 hours
	Sunspray Ultra-Fine Spray Oil		C	4 hours
*imidacloprid	Mallet 75 WSP	<i>BEE CAUTION</i>	C	12 hours
	Merit 75WSP	<i>BEE CAUTION</i>	C	12 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
malathion	Malathion 5 EC	<i>BEE CAUTION</i>	W	12 hours
	Malathion 8 Flowable	<i>BEE CAUTION</i>	C	12 hours
*permethrin	Astro	<i>BEE CAUTION</i>	C	12 hours
	Perm-UP 3.2EC	<i>BEE CAUTION</i>	C	12 hours
pymetrozine	Endeavor		C	12 hours
pyrethrin	PyGanic	<i>OMRI listed</i>	C	12 hours
	Pyrenone		C	12 hours
pyriproxyfen	Distance IGR	<i>most effective against immature stages</i>	C	12 hours
spiromesifen	Forbid 4F	<i>most effective against immature stages</i>	C	
*thiamethoxam	Meridian 0.33G	<i>BEE CAUTION</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

DORMANT SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **RARE**Part of plant to treat: **FOLIAGE, STEMS**

Host Plants: Common Name	Scientific Name
arborvitae	<i>Thuja</i>
buckeye, Ohio	<i>Aesculus glabra</i>
cedar	<i>Cedrus</i>
crabapple	<i>Malus</i>
eastern redcedar	<i>Juniperus virginiana</i>
elm	<i>Ulmus</i>
hemlock	<i>Tsuga</i>
honeylocust	<i>Gleditsia triacanthos</i>
maple	<i>Acer</i>
oak	<i>Quercus</i>
pine	<i>Pinus</i>
spruce	<i>Picea</i>
sycamore	<i>Platanus occidentalis</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
egg	Jan 01	Mar 31	stem, branch		visual inspection

Additional information on biology and control

Hatching in early spring, this caterpillar weaves itself a bag out of silk and bits of leaves from its host plant. The caterpillar will carry the bag along with it as it moves and feeds, and will add to it as it grows. Larvae mature by late summer and pupate directly inside the bag. Only the males emerge as small black hairy clear-winged moths. Females are flightless and never leave their bags. Males fly to females' bags to mate. Females lay eggs in the fall, and the eggs will overwinter inside the female's bag. Chemical controls work best early in the season when caterpillars are small. Physically removing and destroying bags in the fall and winter will prevent eggs from hatching in the spring.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

BAGWORM**

Thyridopteryx ephemeraeformis
Page 176, 178 (Johnson & Lyon)

DELAYED DORMANT

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **RARE**

Part of plant to treat: **FOLIAGE, STEMS**

<u>Host Plants: Common Name</u>	<u>Scientific Name</u>
buckeye, Ohio	<i>Aesculus glabra</i>
cedar	<i>Cedrus</i>
crabapple	<i>Malus</i>
eastern redcedar	<i>Juniperus virginiana</i>
elm	<i>Ulmus</i>
hemlock	<i>Tsuga</i>
honeylocust	<i>Gleditsia triacanthos</i>
maple	<i>Acer</i>
oak	<i>Quercus</i>
pine	<i>Pinus</i>
spruce	<i>Picea</i>
sycamore	<i>Platanus occidentalis</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
	Apr 01	Jun 01	stem, branch		visual inspection

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

*emamectin benzoate Tree-age

BEE CAUTION

Signal Agricultural
Restricted Entry
Word Interval (REI)^

W

Additional information on biology and control

Hand remove and destroy bags to remove the over-wintering eggs.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
arborvitae	<i>Thuja</i>
buckeye, Ohio	<i>Aesculus glabra</i>
cedar	<i>Cedrus</i>
crabapple	<i>Malus</i>
eastern redcedar	<i>Juniperus virginiana</i>
elm	<i>Ulmus</i>
hemlock	<i>Tsuga</i>
honeylocust	<i>Gleditsia triacanthos</i>
maple	<i>Acer</i>
oak	<i>Quercus</i>
pine, eastern white	<i>Pinus strobus</i>
spruce	<i>Picea</i>
sycamore	<i>Platanus occidentalis</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
larva (caterpillar)	Jun 10	Jun 30	foliage	defoliation	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
larva	Jun 10 - Jun 20	563 - 600	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn
larva	Jun 20 - Jul 10	600 - 1160	plants bloom: Ceanothus americanus, Clematis jackmanii, Tilia cordata

Chemical Control

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
<i>Reference use only. NOT a label substitute.</i>				
<i>Select the appropriate insecticide/miticide for the correct life stage of the target pest.</i>				
acephate	Acephate 97 WDG	<i>BEE CAUTION</i>	C	24 hours
	Lepitect	<i>BEE CAUTION</i>	C	24 hours
	Orthene T,T & O WSP	<i>BEE CAUTION</i>	C	24 hours
acetamiprid	TriStar 8.5 SL	<i>BEE CAUTION</i>	C	12 hours
B. thuringiensis aizawai	XenTari	<i>Most effective against young larvae.</i>	C	4 hours
B. thuringiensis kurstaki	Biobit HP	<i>Most effective against young larvae.</i>	C	4 hours
	DiPel DF	<i>Most effective against young larvae.</i>	C	4 hours
*bifenthrin	Onyx Pro	<i>BEE CAUTION</i>	W	12 hours
	Talstar P Professional	<i>BEE CAUTION</i>	C	12 hours
carbaryl	Carbaryl 4L	<i>BEE CAUTION</i>	C	12 hours
	Sevin SL	<i>BEE CAUTION</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

BAGWORM***Thyridopteryx ephemeraeformis*

Page 176, 178 (Johnson & Lyon)

Chemical Control*Reference use only. NOT a label substitute.**Select the appropriate insecticide/miticide for the correct life stage of the target pest.*

		<u>Comments</u>	<u>Signal Word</u>	Agricultural Restricted Entry Interval (REI)^
chlorantraniliprole	Acelepryn			4 hours
*chlorpyrifos	Chlorpyrifos 4E AG	<i>Non-residential, BEE CAUTION</i>	W	24 hours
*clothianidin + bifenthrin	Aloft GC G	<i>BEE CAUTION</i>	C	12 hours
*deltamethrin	Suspend SC	<i>BEE CAUTION</i>	C	
*diflubenzuron	Dimilin 25W	<i>Effective against immatures. Bee caution.</i>	C	12 hours
*emamectin benzoate	Tree-age	<i>BEE CAUTION</i>	W	
indoxacarb	Provaunt	<i>BEE CAUTION</i>	C	
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
malathion	Malathion 5 EC	<i>BEE CAUTION</i>	W	12 hours
	Malathion 8 Flowable	<i>BEE CAUTION</i>	C	12 hours
*permethrin	Astro	<i>BEE CAUTION</i>	C	12 hours
	Perm-UP 3.2EC	<i>BEE CAUTION</i>	C	12 hours
pyrethrin	PyGanic	<i>OMRI listed</i>	C	12 hours
	Pyrenone		C	12 hours
spinosad	Conserve SC	<i>Most effective against young larvae.</i>	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **BUD, FOLIAGE**

Host Plants: Common Name	Scientific Name
fir	<i>Abies</i>
spruce	<i>Picea</i>
spruce, Colorado	<i>Picea pungens</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
nymph	May 01	Jul 01	needles buds	distortion	visual inspection
adult	May 15	Jul 01	needles buds	distortion	visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
nymph, adult	Apr 20 - Apr 30	from - 58	plants bloom: boxelder, star magnolia, periwinkle, Norway maple
nymph, adult	May 01 - May 10	to - 120	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry

Biological Control

	Comments
<i>Orius sp. (predator)</i>	Available commercially; occurs naturally
<i>Hippodamia convergens (lady beetle - predator)</i>	Available commercially; occurs naturally
<i>Deraeocoris nebulosus (mirid bug - predator)</i>	occurs naturally
<i>Chrysoperla sp. (green lacewing - predator)</i>	Available commercially; occurs naturally
<i>Aphidoletes aphidimyza (midge, aphid predator)</i>	Available commercially; occurs naturally
<i>Aphidius matricariae (wasp, aphid parasite)</i>	Available commercially; occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	Comments	Signal Word	Agricultural Restricted Entry Interval (REI)^
*abamectin	Mauget Abacide 2	BEE CAUTION	W
acephate	Acephate 97 WDG	BEE CAUTION	C 24 hours
	Lepitect	BEE CAUTION	C 24 hours
	Orthene T,T & O WSP	BEE CAUTION	C 24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C 12 hours
azadirachtin	Aza-Direct		C 4 hours
	AzaGuard		C 4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W 12 hours
	Talstar P Professional	BEE CAUTION	C 12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C 12 hours
	Sevin SL	BEE CAUTION	C 12 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C 12 hours
*clothianidin	Arena 50 WDG		C 12 hours
*deltamethrin	Suspend SC	BEE CAUTION	C

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

BALSAM TWIG APHID**

Mindarus abietinus

Page 80 (Johnson & Lyon)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal</u>	<u>Agricultural</u>
			<u>Word</u>	<u>Restricted Entry</u>
				<u>Interval (REI)^</u>
*dinotefuran	Safari 20 SG	<i>BEE CAUTION</i>	C	12 hours
*fenpropathrin	Tame 2.4EC	<i>BEE CAUTION</i>	W	24 hours
flonicamid	Aria		C	12 hours
horticultural oil	Damoil		C	4 hours
*imidacloprid	Mallet 75 WSP	<i>BEE CAUTION</i>	C	12 hours
	Merit 75WSP	<i>BEE CAUTION</i>	C	12 hours
	Xytect 2F	<i>BEE CAUTION</i>	C	
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
malathion	Malathion 5 EC	<i>BEE CAUTION</i>	W	12 hours
*permethrin	Astro	<i>BEE CAUTION</i>	C	12 hours
pymetrozine	Endeavor		C	12 hours
pyrethrin	Pyrenone		C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **RARE**

Part of plant to treat: **FOLIAGE?**

Host Plants: Common Name	Scientific Name
basswood	<i>Tilia americana</i>
linden	<i>Tilia</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult, nymph	May 15	Sep 30	foliage	discoloration, distortion	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph, adult	Apr 20 - Apr 30	96 - 137	plants bloom: boxelder, star magnolia, periwinkle, Norway maple
nymph, adult	May 01 - May 10	144 - 228	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry
nymph, adult	May 10 - May 20	228 - 311	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle

Biological Control

	<u>Comments</u>
<i>Orius sp. (predator)</i>	Available commercially; occurs naturally
<i>Hippodamia convergens (lady beetle - predator)</i>	Available commercially; occurs naturally
<i>Deraeocoris nebulosus (mirid bug - predator)</i>	occurs naturally
<i>Chrysoperla sp. (green lacewing - predator)</i>	Available commercially; occurs naturally
<i>Aphidoletes aphidimyza (midge, aphid predator)</i>	Available commercially; occurs naturally
<i>Aphidius matricariae (wasp, aphid parasite)</i>	Available commercially; occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*abamectin	Mauget Abacide 2	BEE CAUTION	W
acephate	Acephate 97 WDG	BEE CAUTION	C 24 hours
	Lepitect	BEE CAUTION	C 24 hours
	Orthene T,T & O WSP	BEE CAUTION	C 24 hours
	TriStar 8.5 SL	BEE CAUTION	C 12 hours
azadirachtin	Aza-Direct		C 4 hours
	AzaGuard		C 4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W 12 hours
	Talstar P Professional	BEE CAUTION	C 12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C 12 hours
	Sevin SL	BEE CAUTION	C 12 hours
chlorantraniliprole	Acelepryn		4 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C 12 hours
*clothianidin	Arena 50 WDG		C 12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

BASSWOOD APHID

Eucallipterus tiliae

Page 302 (Johnson & Lyon)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*deltamethrin	Suspend SC	BEE CAUTION	C	
*dinotefuran	Safari 20 SG	BEE CAUTION	C	12 hours
*fenpropathrin	Tame 2.4EC	BEE CAUTION	W	24 hours
flonicamid	Aria		C	12 hours
horticultural oil	Damoil		C	4 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C	12 hours
	Merit 75WSP	BEE CAUTION	C	12 hours
	Xytect 2F	BEE CAUTION	C	
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
malathion	Malathion 5 EC	BEE CAUTION	W	12 hours
	Malathion 8 Flowable	BEE CAUTION	C	12 hours
*permethrin	Astro	BEE CAUTION	C	12 hours
pymetrozine	Endeavor		C	12 hours
pyrethrin	Pyrenone		C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **RARE**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
basswood	<i>Tilia americana</i>
linden	<i>Tilia</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult	May 15	Sep 30	foliage	discoloration (brownish spots)	visual inspection
nymph	Jun 01	Sep 30	foliage	discoloration (brownish spots)	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph, adult	May 10 - May 20	228 - 311	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle
nymph, adult	Jul 10 - Jul 20	1196 - 1417	plants bloom: Abelia, golden rain tree, sourwood

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Lepitect	BEE CAUTION	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
chlorantraniliprole	Acelepryn			4 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W	24 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C	12 hours
*clothianidin	Arena .25 G		C	12 hours
*deltamethrin	Suspend SC	BEE CAUTION	C	
*dinotefuran	Safari 20 SG	BEE CAUTION	C	12 hours
*fenpropathrin	Tame 2.4EC	BEE CAUTION	W	24 hours
horticultural oil	Damoil		C	4 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C	12 hours
	Merit 75WSP	BEE CAUTION	C	12 hours
	Xylect 2F	BEE CAUTION	C	
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

BASSWOOD LACE BUG**

Gargaphia tiliae

Page 426 (Johnson & Lyon)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

<u>Chemical Control</u>		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
malathion	Malathion 5 EC	BEE CAUTION	W	12 hours
	Malathion 8 Flowable	BEE CAUTION	C	12 hours
*permethrin	Astro	BEE CAUTION	C	12 hours
	Perm-UP 3.2EC	BEE CAUTION	C	12 hours
pyrethrin	PyGanic	OMRI listed	C	12 hours
	Pyrenone		C	12 hours
*thiamethoxam	Meridian 0.33G	BEE CAUTION	C	12 hours

Additional information on biology and control

The basswood or linden lace bug overwinters as an adult in bark cracks and crevices or nearby in debris on the ground. Pale creamy to yellow nymphs have dark horizontal stripes just behind the pronotum and again near the rear of the body. Lacy winged, 4 -5 mm long adults have dark bodies with red eyes. The last antennal segment is dark.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**Part of plant to treat: **TRUNK, BRANCH**

Host Plants: Common Name	Scientific Name
beech	<i>Fagus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult, nymph	Jan 01	Dec 31	bark	discoloration, leaf drop, beech bark disease	visual inspection
nymph (crawler)	Aug 15	Sep 30	bark	discoloration, leaf drop, beech bark disease	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
crawler	Aug 01 - Sep 30	1700 - 2862	Not applicable

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Lepitect	Effective against immatures. Bee caution.	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C	12 hours
carbaryl	Carbaryl 4L	Effective against immatures. Bee caution.	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C	12 hours
*deltamethrin	Suspend SC	Effective against immatures. Bee caution.	C	
*dinotefuran	Safari 20 SG	BEE CAUTION	C	12 hours
flonicamid	Aria		C	12 hours
horticultural oil	Damoil		C	4 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede	Only effective against immatures.	W	12 hours
lambda-cyhalothrin	Demand CS	Effective against immatures. Bee caution.	C	
*lambda-cyhalothrin	Scimitar GC	Effective against immatures. Bee caution.	C	24 hours
malathion	Malathion 5 EC	Effective against immatures. Bee caution.	W	12 hours
	Malathion 8 Flowable	Effective against immatures. Bee caution.	C	12 hours
pyriproxyfen	Distance IGR	most effective against immature stages	C	12 hours

Additional information on biology and control

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

BEECH SCALE**

Cryptococcus fagisuga

Page 332 (Johnson & Lyon)

This insect is responsible for creating infection sites for the bark disease, *Nectria coccinea* var. *faginata* on native and European beech. This disease occurs in conjunction with infestation by the beech scale. Feeding punctures made by the white woolly scales kill the living bark and produce cracks through which the causal fungus enters the tree. The fungus causes a canker which may be sunken, with small orange lumps of fungal tissue on the surface. Leaves are usually yellow and small, and the tree lacks vigor. When cankers are large enough to encircle the twig, branch, or trunk, the foliage wilts, and the parts of the tree distal to the canker die. Infection usually does not occur when the insects are removed soon after infestation. (From 'The Plant Pest Handbook', Published by The Connecticut Agricultural Experiment Station) Fertilize trees in the spring and water well during drought to maintain tree vigor. Control the scale to prevent further infection."

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **RARE**

Part of plant to treat: **STEM**

Host Plants: Common Name	Scientific Name
alder	<i>Alnus</i>
beech	<i>Fagus</i>
birch	<i>Betula</i>
hornbeam	<i>Carpinus caroliniana</i>

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
larva	Jul 01 - Jul 10	989 - 1196	plants bloom: Ceanothus americanus, Clematis jackmanii, Tilia cordata
larva	Jul 10 - Jul 20	1196 - 1417	plants bloom: Abelia, golden rain tree, sourwood
larva	Jul 20 - Jul 31	1417 - 1673	plants bloom: butterfly bush, Clethra alnifolia, false spirea

Non Chemical Control

Remove and destroy badly infested branch & tree parts.

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*abamectin	Mauget Abacide 2	<i>BEE CAUTION</i>	W	
*chlorpyrifos	Chlorpyrifos 4E AG	<i>Non-residential, BEE CAUTION</i>	W	24 hours
*clothianidin	Arena .25 G		C	12 hours
*thiamethoxam	Meridian 0.33G	<i>BEE CAUTION</i>	C	12 hours

Additional information on biology and control

This half inch long native cerambycid beetle has four yellow markings on its black pronotum. Elytra are a light brown with faint oblique white bands. Adults fly from May through August throughout Northeastern North America. Larvae girdle live branches of hosts.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

BIRCH LACE BUG

Corythuca pallipes

Page 426 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
beech	<i>Fagus</i>
birch	<i>Betula</i>
hophornbeam	<i>Ostrya virginiana</i>
maple	<i>Acer</i>
mountain ash, European	<i>Sorbus aucuparia</i>
willow	<i>Salix</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult	May 15	Sep 30	foliage	discoloration (brownish spots)	visual inspection
nymph	Jun 01	Sep 30	foliage	discoloration (brownish spots)	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph, adult	May 10 - May 31	250 - 500	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle
nymph, adult	Jul 10 - Jul 30	1266 - 1600	plants bloom: Abelia, golden rain tree, sourwood

Chemical Control

Comments

Signal
Word **Agricultural**
Restricted Entry
Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

acephate	Acephate 97 WDG	<i>BEE CAUTION</i>	C	24 hours
	Lepitect	<i>BEE CAUTION</i>	C	24 hours
	Orthene T,T & O WSP	<i>BEE CAUTION</i>	C	24 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
*bifenthrin	Onyx Pro	<i>BEE CAUTION</i>	W	12 hours
	Talstar P Professional	<i>BEE CAUTION</i>	C	12 hours
carbaryl	Carbaryl 4L	<i>BEE CAUTION</i>	C	12 hours
	Sevin SL	<i>BEE CAUTION</i>	C	12 hours
chlorantraniliprole	Acelepryn			4 hours
*chlorpyrifos	Chlorpyrifos 4E AG	<i>Non-residential, BEE CAUTION</i>	W	24 hours
*clothianidin + bifenthrin	Aloft GC G	<i>BEE CAUTION</i>	C	12 hours
*clothianidin	Arena .25 G		C	12 hours
*deltamethrin	Suspend SC	<i>BEE CAUTION</i>	C	
*dinotefuran	Safari 20 SG	<i>BEE CAUTION</i>	C	12 hours
*fenpropathrin	Tame 2.4EC	<i>BEE CAUTION</i>	W	24 hours
horticultural oil	Damoil		C	4 hours
*imidacloprid	Mallet 75 WSP	<i>BEE CAUTION</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	Agricultural Restricted Entry Interval (REI)^
	Merit 75WSP	<i>BEE CAUTION</i>	C	12 hours
	Xytect 2F	<i>BEE CAUTION</i>	C	
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
malathion	Malathion 5 EC	<i>BEE CAUTION</i>	W	12 hours
	Malathion 8 Flowable	<i>BEE CAUTION</i>	C	12 hours
*permethrin	Astro	<i>BEE CAUTION</i>	C	12 hours
	Perm-UP 3.2EC	<i>BEE CAUTION</i>	C	12 hours
pyrethrin	PyGanic	<i>OMRI listed</i>	C	12 hours
	Pyrenone		C	12 hours
*thiamethoxam	Meridian 0.33G	<i>BEE CAUTION</i>	C	12 hours

Additional information on biology and control

The birch lace bug overwinters as adults on fallen leaves or in other protected areas near its host. Eggs laid in the spring are inserted into leaf tissue near the veins. There are two generations per year.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

BIRCH LEAFMINER***Fenusa pusilla*

Page 184, 296 (Johnson & Lyon)

Page 12 (Adams & Packauskas)

GROWING SEASON**Annual cover sprays are suggested.**Frequency with which pest occurs: **ANNUAL**Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
birch	<i>Betula</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult (sawfly)	May 01	Jun 15	foliage		visual inspection, sticky cards
larva	May 20	Jul 01	foliage	discoloration (mining)	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult, larva	May 01 - May 10	from - 150	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry
adult, larva	May 10 - May 20	- -	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle
(adult?), larva	May 20 - May 31	- -	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark
(adult?), larva	Jun 01 - Jun 10	- -	plants bloom: Kousa dogwood, cranberry bush, beautybush
(adult?), larva	Jun 10 - Jun 20	to - 740	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn
(adult?), larva	Jul 01 - Jul 10	989 - 1196	plants bloom: Ceanothus americanus, Clematis jackmanii, Tilia cordata

Chemical Control**Comments****Signal Word****Agricultural Restricted Entry Interval (REI)^***Reference use only. NOT a label substitute.**Select the appropriate insecticide/miticide for the correct life stage of the target pest.*

*abamectin	Mauget Abacide 2	<i>BEE CAUTION</i>	W	
acephate	Acephate 97 WDG	<i>BEE CAUTION</i>	C	24 hours
	Lepitect	<i>BEE CAUTION</i>	C	24 hours
	Orthene T,T & O WSP	<i>BEE CAUTION</i>	C	24 hours
azadirachtin	Aza-Direct		C	4 hours
*bifenthrin	Onyx Pro	<i>BEE CAUTION</i>	W	12 hours
	Talstar P Professional	<i>BEE CAUTION</i>	C	12 hours
carbaryl	Carbaryl 4L	<i>BEE CAUTION</i>	C	12 hours
	Sevin SL	<i>BEE CAUTION</i>	C	12 hours
chlorantraniliprole	Acelepryn			4 hours
*clothianidin	Arena .25 G		C	12 hours
*dinotefuran	Safari 20 SG	<i>BEE CAUTION</i>	C	12 hours
*emamectin benzoate	Tree-age	<i>BEE CAUTION</i>	W	
*fenpropathrin	Tame 2.4EC	<i>BEE CAUTION</i>	W	24 hours
*imidacloprid	Mallet 75 WSP	<i>BEE CAUTION</i>	C	12 hours
	Merit 75WSP	<i>BEE CAUTION</i>	C	12 hours
	Xytect 2F	<i>BEE CAUTION</i>	C	

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	Agricultural Restricted Entry Interval (REI)^
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
malathion	Malathion 5 EC	BEE CAUTION	W	12 hours
	Malathion 8 Flowable	BEE CAUTION	C	12 hours
*permethrin	Astro	BEE CAUTION	C	12 hours
	Perm-UP 3.2EC	BEE CAUTION	C	12 hours
phosmet	Imidan 70W	BEE CAUTION	W	24 hours
spinosad	Conserve SC	Most effective against young larvae.	C	4 hours
*thiamethoxam	Meridian 0.33G	BEE CAUTION	C	12 hours

Additional information on biology and control

Systemics, such as acephate and imidacloprid can be applied at any time but contacts such as bifenthrin, cyfluthrin and permethrin need to be applied when adults are present. See Control: Stage and Timing.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

BIRCH SKELETONIZER***Bucculatrix canadensisella*

Page 220 (Johnson & Lyon)

GROWING SEASON**Apply thorough treatment only when pest stage found.**Frequency with which pest occurs: **OCCASIONAL**Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
birch	<i>Betula</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
larva	Jun 01	Sep 30	foliage	skeletonized leaf, defoliation	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
larva, adult	Jul 15 - Jul 31	1266 - 1580	plants bloom: Abelia, golden rain tree, sourwood

Chemical Control**Comments**

Signal
Word **Agricultural**
Restricted Entry
Interval (REI)^

*Reference use only. NOT a label substitute.**Select the appropriate insecticide/miticide for the correct life stage of the target pest.*

*abamectin	Mauget Abacide 2	<i>BEE CAUTION</i>	W	
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
B. thuringiensis kurstaki	DiPel DF	<i>Most effective against young larvae.</i>	C	4 hours
*bifenthrin	Onyx Pro	<i>BEE CAUTION</i>	W	12 hours
	Talstar P Professional	<i>BEE CAUTION</i>	C	12 hours
chlorantraniliprole	Acelepryn			4 hours
*deltamethrin	Suspend SC	<i>BEE CAUTION</i>	C	
*imidacloprid	Merit 75WSP	<i>BEE CAUTION</i>	C	12 hours
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
*permethrin	Astro	<i>BEE CAUTION</i>	C	12 hours
	Perm-UP 3.2EC	<i>BEE CAUTION</i>	C	12 hours
pyrethrin	Pyrenone		C	12 hours
spinosad	Conserve SC	<i>Most effective against young larvae.</i>	C	4 hours
*thiamethoxam	Meridian 0.33G	<i>BEE CAUTION</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

DELAYED DORMANT

Apply thorough treatment only when pest stage found.

Host Plants: Common Name

oak, black

Scientific Name

Quercus velutina

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult	Mar 15	Apr 15	terminal shoots	twig (exit hole), dieback	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult in stem	Mar 15 - Apr 15	5 - 44	plants bloom: silver maple, Cornelian cherry, pussy willow

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

Comments

BEE CAUTION

Signal Agricultural Restricted Entry
Word Interval (REI)^

*emamectinbenzoate Tree-age

W

Additional information on biology and control

As of May 2018, the possibly native black oak stem gall wasp, *Zapatella davisae*, formerly *Callirhytis ceropteroides*, has been found in southeast Connecticut. The life cycle involves tiny female wasps emerging from pin-sized holes on black oak twigs throughout May. Only female wasps emerge from the galls. There is one generation per year in New England. Larvae feed and develop in chambers within the twig that begins to swell in late July forming the galls. Galls cause disruption in xylem and phloem, causing branch dieback. Epicormic growth is produced as the season progresses. Trees may die from the top down over multiple years of infestation. Research by Davis and Elkinton, UMass, showed that one injection of either emamectin benzoate or imidacloprid in March did result in fewer gall cavities and lower branch mortality over a one year period. Chalcid parasitoids have reduced damaged caused by this gall wasp on Long Island. Maintaining trees in good health: watering during drought, managing other insect pests and diseases, and fertilizing where a soil test recommends it, can help trees survive an attack by this gall wasp. (Cape Cod Cooperative Extension, 2012)

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

BLACK OAK STEM GALL WASP

Zapatella davisae

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **TERMINAL SHOOTS**

Host Plants: Common Name

oak, black

Scientific Name

Quercus velutina

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>	<u>Signal</u>	<u>Word</u>
adult	Apr 15	May 15	terminal shoots	twig (exit hole), dieback	visual inspection	Agricultural Restricted Entry	Interval (REI)^
<u>Chemical Control</u>							
<i>Reference use only. NOT a label substitute.</i>							
<i>Select the appropriate insecticide/miticide for the correct life stage of the target pest.</i>							
carbaryl	Carbaryl 4L			<i>BEE CAUTION</i>		C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **RARE**

Part of plant to treat: **TRUNK NEAR GROUND LEVEL**

Host Plants: Common Name	Scientific Name
pine	<i>Pinus</i>
pine, eastern white	<i>Pinus strobus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
all stages	Jan 01	Dec 31	trunk near ground level	dieback	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult, egg	May 01 - May 10	133 - 187	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry
adult (beetle)	Jun 01 - Jun 10	437 - 563	plants bloom: Kousa dogwood, cranberry bush, beautybush

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*abamectin	Mauget Abacide 2	W	
*permethrin	Astro	C	12 hours

Additional information on biology and control

The 3/8” long, black, turpentine beetle, family Scolytidae, overwinters as an adult in bark. Eggs are laid in the basal six feet of tree trunks. Legless creamy white larvae feed on the inner bark or phloem. Stressed trees are attacked first but occasionally healthy trees are attacked as well. White pitch tubes that age into irregular-shaped pitch masses on lower trunks, signal this beetle’s attack.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

BLACK VINE WEEVIL (ADULT)**

Otiorhynchus sulcatus

Page 54, 240, 242 (Johnson & Lyon)

Page 22 (Adams & Packauskas)

GROWING SEASON

Annual cover sprays are suggested.

Frequency with which pest occurs: ANNUAL

Part of plant to treat: FOLIAGE

Host Plants: Common Name	Scientific Name
andromeda	<i>Pieris japonica</i>
arborvitae	<i>Thuja</i>
Azalea	<i>Azalea</i>
Euonymus	<i>Euonymus</i>
hemlock	<i>Tsuga</i>
laurel, mountain	<i>Kalmia latifolia</i>
Rhododendron	<i>Rhododendron</i>
yew	<i>Taxus</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
adult	May 20	Jul 10	foliage	notched foliage	visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
adult	May 20 - May 31	150 - 400	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark
adult	Jun 01 - Jun 10	400 - 540	Remainder of season between the beginning and end phenology
adult	Jul 01 - Jul 10	960 - 1160	plants bloom: Ceanothus americanus, Clematis jackmanii, Tilia cordata

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		Comments	Signal Word	Agricultural Restricted Entry Interval (REI)^
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W	24 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C	12 hours
*clothianidin	Arena .25 G		C	12 hours
*fenpropathrin	Tame 2.4EC	BEE CAUTION	W	24 hours
horticultural oil	Damoil		C	4 hours
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
*permethrin	Astro	BEE CAUTION	C	12 hours
	Perm-UP 3.2EC	BEE CAUTION	C	12 hours
pyrethrin	Pyrenone		C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

BLACK VINE WEEVIL (ADULT)**

Otiorhynchus sulcatus

Page 54, 240, 242 (Johnson & Lyon)

Page 22 (Adams & Packauskas)

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

***restricted use pesticide**

****ESA approved common name**

^for agricultural applications only.

BLACK VINE WEEVIL (LARVA)**

Otiorhynchus sulcatus

Page 54, 240, 242 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: ANNUAL

Part of plant to treat: ROOT ZONE

Host Plants: Common Name	Scientific Name
Rhododendron	<i>Rhododendron</i>
yew	<i>Taxus</i>

Biological Control

Steinernema feltiae (nematode)

Comments

Available commercially

Steinernema carpocapsae (nematode)

Available commercially

Heterorhabditis bacteriophora (nematode)

Available commercially

Chemical Control

Comments

Signal Word	Agricultural Restricted Entry Interval (REI)^
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Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Lepitect	apply drench when soil is not frozen or waterlogged.	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
chlorantraniliprole	Acelepryn			4 hours
*clothianidin	Arena .25 G	OMRI listed, effective against immatures	C	12 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C	12 hours

Additional information on biology and control

Black vine weevil larvae are difficult to control. The listed insecticides will only work if they reach the target.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

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GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **NEW FOLIAGE**

Host Plants: Common Name	Scientific Name
apple	<i>Malus</i>
boxelder	<i>Acer negundo</i>
maple	<i>Acer</i>
plum	<i>Prunus cerasifera</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult	May 01	Nov 01	foliage, seeds	distortion, nuisance	visual inspection
nymph	Jun 01	Sep 15	foliage, seeds	distortion, nuisance	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph, adult	Jun 20 - Jun 30	737 - 967	plants bloom: Rhododendron maximum, Spiraea bumalda, Philadelphus
nymph, adult	Jul 01 - Sep 10	989 - 2576	Remainder of season between the beginning and end phenology
nymph, adult	Sep 10 - Sep 15	2576 - 2672	plants bloom: Pee Gee Hydrangea, Sevin-son Flower

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	<i>BEE CAUTION</i>	C 24 hours
	Orthene T,T & O WSP	<i>BEE CAUTION</i>	C 24 hours
azadirachtin	Aza-Direct		C 4 hours
	AzaGuard		C 4 hours
*bifenthrin	Onyx Pro	<i>BEE CAUTION</i>	W 12 hours
	Talstar P Professional	<i>BEE CAUTION</i>	C 12 hours
carbaryl	Carbaryl 4L	<i>BEE CAUTION</i>	C 12 hours
	Sevin SL	<i>BEE CAUTION</i>	C 12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	<i>Non-residential, BEE CAUTION</i>	W 24 hours
*clothianidin + bifenthrin	Aloft GC G	<i>BEE CAUTION</i>	C 12 hours
*deltamethrin	Suspend SC	<i>BEE CAUTION</i>	C
*imidacloprid	Merit 75WSP	<i>BEE CAUTION</i>	C 12 hours
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C 24 hours
*permethrin	Perm-UP 3.2EC	<i>BEE CAUTION</i>	C 12 hours
pyrethrin	PyGanic	<i>OMRI listed</i>	C 12 hours
	Pyrenone		C 12 hours

Additional information on biology and control

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

BOXELDER BUG**

Boisea trivittatus

Page 398 (Johnson & Lyon)

These distinctive red and black insects are well known for their habit of clustering on the sunny side of light-colored houses in the fall. They overwinter as adults in homes and other structures. Adults and nymphs feed on boxelder maple foliage and developing seeds throughout the summer into the fall.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

***restricted use pesticide**

****ESA approved common name**

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
boxwood	<i>Buxus spp.</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult (fly)	May 15	Jun 20	foliage		visual inspection, sticky cards
larva	Jul 01	Sep 30	foliage	discoloration (mining)	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult	Jun 01 - Jun 15	448 - 700	plants bloom: Kousa dogwood, cranberry bush, beautybush

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
abamectin	Avid 0.15 EC		W	12 hours
acephate	Acephate 97 WDG	<i>BEE CAUTION</i>	C	24 hours
	Lepitect	<i>BEE CAUTION</i>	C	24 hours
	Orthene T,T & O WSP	<i>BEE CAUTION</i>	C	24 hours
acetamiprid	TriStar 8.5 SL	<i>BEE CAUTION</i>	C	12 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
*bifenthrin	Onyx Pro	<i>BEE CAUTION</i>	W	12 hours
	Talstar P Professional	<i>BEE CAUTION</i>	C	12 hours
carbaryl	Carbaryl 4L	<i>BEE CAUTION</i>	C	12 hours
	Sevin SL	<i>BEE CAUTION</i>	C	12 hours
*clothianidin	Arena .25 G		C	12 hours
*dinotefuran	Safari 20 SG	<i>BEE CAUTION</i>	C	12 hours
*emamectin benzoate	Tree-age	<i>BEE CAUTION</i>	W	
*imidacloprid	Mallet 75 WSP	<i>BEE CAUTION</i>	C	12 hours
	Merit 75WSP	<i>BEE CAUTION</i>	C	12 hours
	Xytect 2F	<i>BEE CAUTION</i>	C	
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
malathion	Malathion 5 EC	<i>BEE CAUTION</i>	W	12 hours
	Malathion 8 Flowable	<i>BEE CAUTION</i>	C	12 hours
*permethrin	Astro	<i>BEE CAUTION</i>	C	12 hours
pyrethrin	PyGanic	<i>OMRI listed</i>	C	12 hours
spinosad	Conserve SC	<i>Most effective against young larvae.</i>	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

BOXWOOD LEAFMINER**

Monarthropalpus flavus

Page 204 (Johnson & Lyon)

Page 12 (Adams & Packauskas)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

Comments

Signal **Agricultural**
Word **Restricted Entry**
 Interval (REI)^

*thiamethoxam	Meridian 0.33G	BEE CAUTION	C	12 hours
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Additional information on biology and control

Adult midges are active for a brief period in the spring, which is the only time foliar (non-systemic) sprays are effective. Females oviposit into new leaves, causing stippling scars. Eggs hatch and the larvae develop between the leaf's epidermal layers, eventually causing the leaf to 'blister.' There are often multiple larvae inside each leaf. Systemics, such as acephate and imidacloprid can be applied at any time soils are not frozen or water logged but contacts such as bifenthrin, carbaryl and permethrin need to be applied when adults are present. See Control: Stage and Timing.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

DORMANT SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
boxwood	<i>Buxus spp.</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
egg	Mar 01	Sep 10	foliage		visual inspection (magnification)

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
egg	Mar 01 - Apr 10	0 - 41	None Offered

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
horticultural oil	Damoil	C	4 hours
	Sunspray Ultra-Fine SprayOil	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

BOXWOOD MITE

Eurytetranychus buxi

Page 475, 476 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
boxwood	<i>Buxus spp.</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
immature	May 01	Oct 31	foliage	discoloration (stippling)	visual inspection (magnification)
adult	May 15	Oct 31	foliage	discoloration (stippling)	visual inspection (magnification)

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
immature, adult	May 10 - May 20	from - 245	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle
immature, adult	May 20 - May 31	- - -	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark
immature, adult	Jun 01 - Jun 10	- - -	plants bloom: Kousa dogwood, cranberry bush, beautybush
adult	Jun 10 - Jun 20	to - 600	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn

Biological Control

Stethorus punctillum (lady beetle - predator)

Phytoseiulus persimilis (predatory mite)

Orius sp. (predator)

Neoseiulus cucumeris (predatory mite)

Comments

Available commercially; occurs naturally

Available commercially; occurs naturally

Available commercially; occurs naturally

Available commercially; occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

Comments

Signal Word	Agricultural Restricted Entry Interval (REI)^
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abamectin	Avid 0.15 EC		W	12 hours
bifenazate	Floramite SC	<i>BEE CAUTION</i>	C	12 hours
*bifenthrin	Onyx Pro	<i>BEE CAUTION</i>	W	12 hours
etoxazole	Tetrasan 5 WDG		C	12 hours
fenazaquin	Magus	<i>BEE CAUTION</i>	W	12 hours
fenpyroximate	Akari 5SC		W	12 hours
hexythiazox	Hexygon DF	<i>most effective against immature stages</i>	C	12 hours
horticultural oil	Damoil		C	4 hours
	Sunspray Ultra-Fine Spray Oil		C	4 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
pyrethrin	PyGanic	<i>OMRI listed</i>	C	12 hours
spiromesifen	Forbid 4F	<i>most effective against immature stages</i>	C	

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**Part of plant to treat: **EXPANDING FOLIAGE**

Host Plants: Common Name	Scientific Name
boxwood	<i>Buxus spp.</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
nymph	May 01	Jun 01	foliage	distortion	visual inspection
adult	May 20	Sep 30	foliage	distortion	visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
nymph	May 15 - May 31	290 - 440	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark

Chemical Control*Reference use only. NOT a label substitute.**Select the appropriate insecticide/miticide for the correct life stage of the target pest.*

		Comments	Signal Word	Agricultural Restricted Entry Interval (REI)^
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C	12 hours
	azadirachtin			
*bifenthrin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W	24 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C	12 hours
*clothianidin	Arena .25 G		C	12 hours
*dinotefuran	Safari 20 SG	BEE CAUTION	C	12 hours
fenpyroximate	Akari 5SC		W	12 hours
horticultural oil	Damoil		C	4 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C	12 hours
	Xytect 2F	BEE CAUTION	C	
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
pyrethrin	PyGanic	OMRI listed	C	12 hours
	Pyrenone		C	12 hours

Additional information on biology and control

This page may contain additional information in the future.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

BRONZE BIRCH BORER**

Agrilus anxius

Page 272 (Johnson & Lyon)

Page 14 (Adams & Packauskas)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **TRUNK, BRANCH**

Host Plants: Common Name	Scientific Name
birch	<i>Betula</i>
poplar or aspen	<i>Populus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult exit holes, bark rippling	Jan 01	Dec 31	bark	branch dieback	visual inspection
adult (beetle)	May 20	Aug 20	bark		visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
larva	May 01 - Sep 30	135 - 2850	plants bloom: Kousa dogwood, cranberry bush, beautybush
adult	Jun 01 - Jun 10	from - 440	plants bloom: Kousa dogwood, cranberry bush, beautybush
adult	Jun 10 - Jun 20	to - 800	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W	24 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C	12 hours
*dinotefuran	Safari 20 SG	BEE CAUTION	C	12 hours
*emamectin benzoate	Tree-age	BEE CAUTION	W	
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C	12 hours
	Merit 75WSP	BEE CAUTION	C	12 hours
*permethrin	Astro	BEE CAUTION	C	12 hours
	Perm-UP 3.2EC	BEE CAUTION	C	12 hours

Additional information on biology and control

Black, up to ½” long beetles, with bronze iridescence, emerge from trunks in late May and early June. Exit holes are D-shaped and slightly smaller than those of the emerald ash borer. Adults feed on foliage, mate and lay eggs in bark crevices. Cream colored, elongated, flat larvae tend to move in a spiral underneath the bark, causing girdling and swelling of the infected branch or trunk. Bronze birch borer is a threat to non-native birch varieties such as European white birch. Maintaining good health in birches can prevent bronze birch borer attack. Systemics, such as acephate and imidacloprid, can be applied against larvae anytime during the growing season when the soil is not waterlogged or frozen.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
cherry, black	<i>Prunus serotina</i>
crabapple	<i>Malus</i>
tree of heaven	<i>Ailanthus altissima</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult	Apr 20	May 20	foliage	discoloration (stippling)	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult, nymph	May 01 - Jun 30	133 - 940	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	<i>BEE CAUTION</i>	C	24 hours
	Lepitect	<i>BEE CAUTION</i>	C	24 hours
acetamiprid	TriStar 8.5 SL	<i>BEE CAUTION</i>	C	12 hours
*bifenthrin	Talstar P Professional	<i>BEE CAUTION</i>	C	12 hours
carbaryl	Carbaryl 4L	<i>BEE CAUTION</i>	C	12 hours
*clothianidin + bifenthrin	Aloft GC G	<i>BEE CAUTION</i>	C	12 hours
flonicamid	Aria		C	12 hours
*imidacloprid	Merit 75WSP	<i>BEE CAUTION</i>	C	12 hours
malathion	Malathion 8 Flowable	<i>BEE CAUTION</i>	C	12 hours
pyrethrin	PyGanic	<i>OMRI listed</i>	C	12 hours

Additional information on biology and control

As of January 2018, the brown marmorated stinkbug is found throughout Connecticut and is both a nuisance and agricultural pest. Adults invade homes in the winter. Based on CAES Information office data, it is most often associated with crabapples in the home landscape. It is a serious pest of tree fruit in central Connecticut (Mary Concklin, UConn, personal communication).

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

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CALICO SCALE

Eulecanium cerasorum

Page 354 (Johnson & Lyon)

DORMANT SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **RARE**

Part of plant to treat: **TWIG BARK**

<u>Host Plants: Common Name</u>	<u>Scientific Name</u>
bayberry	<i>Myrica pensylvanica</i>
buckeye, Ohio	<i>Aesculus glabra</i>
cherry, black	<i>Prunus serotina</i>
crabapple	<i>Malus</i>
dogwood	<i>Cornus</i>
elm	<i>Ulmus</i>
firethorn	<i>Pyracantha</i>
maple	<i>Acer</i>
peach	<i>Prunus persica</i>
pear	<i>Pyrus calleryana</i>
sweetgum	<i>Liquidambar</i>
zelkova, Japanese	<i>Zelkova serrata</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph	Mar 01	Apr 15	twig bark	decline	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph	Mar 10 - Apr 10	2 - 30	None Offered

Additional information on biology and control

This soft scale, named because of its coloring like that of a calico cat, overwinters as a second instar nymph on twigs. In heavy infestations twigs and foliage become dark and sticky with honeydew and the resulting sooty mold. Crawlers are present in mid-June to July. Crawlers migrate to feed on leaves during the growing season. Second instar nymphs migrate back to twigs in the fall so they can remain on the deciduous host. There is thought to be only one generation per year in Connecticut.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **RARE**

Part of plant to treat: **TWIG BARK**

Host Plants: Common Name	Scientific Name
bayberry	<i>Myrica pensylvanica</i>
buckeye, Ohio	<i>Aesculus glabra</i>
cherry, black	<i>Prunus serotina</i>
cherry, flowering	<i>Prunus</i>
crabapple	<i>Malus</i>
dogwood	<i>Cornus</i>
elm	<i>Ulmus</i>
firethorn	<i>Pyracantha</i>
maple	<i>Acer</i>
peach	<i>Prunus persica</i>
pear	<i>Pyrus calleryana</i>
sweetgum	<i>Liquidambar</i>
zelkova, Japanese	<i>Zelkova serrata</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
crawler, ?nymph	Jun 01	Sep 30	foliage, stems	discoloration, dieback	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
crawler	Jun 10 - Jun 20	563 - 737	plants bloom: Kousa dogwood, cranberry bush, beautybush
crawler, nymph	Jun 20 - Jun 30	737 - 940	plants bloom: Rhododendron maximum, Spiraea bumalda, Philadelphus
nymph	Jul 01 - Jul 10	960 - 1162	plants bloom: Ceanothus americanus, Clematis jackmanii, Tilia cordata

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
buprofezin	Talus 70DF	Only effective against immatures.	W	12 hours
carbaryl	Carbaryl 4L	Effective against immatures. Bee caution.	C	12 hours
*clothianidin	Arena .25 G	apply drench when soil is not frozen or waterlogged.	C	12 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C	12 hours
	Merit 75WSP	BEE CAUTION	C	12 hours
lambda-cyhalothrin	Demand CS	Effective against immatures. Bee caution.	C	
malathion	Malathion 8 Flowable	Effective against adults only.	C	12 hours
pyriproxyfen	Distance IGR	Only effective against immatures.	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

CANKERWORMS**

Geometridae

Page 142, 144 (Johnson & Lyon)

Page 25 (Adams & Packauskas)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

<u>Host Plants: Common Name</u>	<u>Scientific Name</u>
almond, dwarf flowering	<i>Prunus glandulosa</i>
apple	<i>Malus</i>
beech	<i>Fagus</i>
cherry, black	<i>Prunus serotina</i>
crabapple	<i>Malus</i>
elm	<i>Ulmus</i>
linden	<i>Tilia</i>
maple	<i>Acer</i>
oak	<i>Quercus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
larva (caterpillar)	May 01	Jun 01	foliage	defoliation	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
larva	May 01 - May 10	from - 148	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry
larva	May 10 - May 20	- - -	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle
larva	May 20 - May 31	to - 400	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark

Biological Control

Podisus maculiventris (spined soldier bug - predator)

Comments

Available commercially; occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C 24 hours
	Lepitect	BEE CAUTION	C 24 hours
	Orthene T,T & O WSP	BEE CAUTION	C 24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C 12 hours
azadirachtin	Aza-Direct		C 4 hours
	AzaGuard		C 4 hours
B. thuringiensis aizawai	XenTari	Most effective against young larvae.	C 4 hours
	Biobit HP	Most effective against young larvae.	C 4 hours
B. thuringiensis kurstaki	DiPel DF	Most effective against young larvae.	C 4 hours
	Onyx Pro	BEE CAUTION	W 12 hours
*bifenthrin	Talstar P Professional	BEE CAUTION	C 12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C 12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

Chemical Control*Reference use only. NOT a label substitute.**Select the appropriate insecticide/miticide for the correct life stage of the target pest.*

<u>Chemical Control</u>		<u>Comments</u>	<u>Signal Word</u>	Agricultural Restricted Entry Interval (REI)^
	Sevin SL	<i>BEE CAUTION</i>	C	12 hours
chlorantraniliprole	Acelepryn			4 hours
*chlorpyrifos	Chlorpyrifos 4E AG	<i>Non-residential, BEE CAUTION</i>	W	24 hours
*clothianidin + bifenthrin	Aloft GC G	<i>BEE CAUTION</i>	C	12 hours
*deltamethrin	Suspend SC	<i>BEE CAUTION</i>	C	
*diflubenzuron	Dimilin 25W	<i>Effective against immatures. Bee caution.</i>	C	12 hours
indoxacarb	Provaunt	<i>BEE CAUTION</i>	C	
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
*permethrin	Astro	<i>BEE CAUTION</i>	C	12 hours
	Perm-UP 3.2EC	<i>BEE CAUTION</i>	C	12 hours
phosmet	Imidan 70W	<i>BEE CAUTION</i>	W	24 hours
pyrethrin	PyGanic	<i>OMRI listed</i>	C	12 hours
	Pyrenone		C	12 hours
spinosad	Conserve SC	<i>Most effective against young larvae.</i>	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

CARPENTERWORM**

Prionoxystus robiniae

Page 256, 282 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **STEM, TRUNK**

Host Plants: Common Name	Scientific Name
ash	<i>Fraxinus</i>
birch	<i>Betula</i>
elm	<i>Ulmus</i>
maple	<i>Acer</i>
oak	<i>Quercus</i>
pear	<i>Pyrus calleryana</i>
willow	<i>Salix</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
exit hole(s), frass	Jan 01	Dec 31	bark	discoloration, dieback, tree death	visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
larva	Jun 01 - Jun 10	437 - 563	plants bloom: Kousa dogwood, cranberry bush, beautybush
larva	Jun 10 - Jun 30	563 - 967	Remainder of season between the beginning and end phenology
larva	Jul 01 - Jul 10	989 - 1196	plants bloom: Ceanothus americanus, Clematis jackmanii, Tilia cordata

Biological Control

Steinernema feltiae (nematode)

Steinernema carpocapsae (nematode)

Comments

Available commercially

Available commercially

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Lepitect	BEE CAUTION	C	24 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours
*clothianidin + bifenthrin	Aloft GCG	BEE CAUTION	C	12 hours

Additional information on biology and control

Northern red oak show the greatest amount of damage.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
hawthorn	<i>Crataegus</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
adult (sawfly)	May 15	Jun 30	foliage		visual inspection, sticky cards
larva	Jun 01	Aug 01	foliage	discoloration (mining)	visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
adult, larva	May 10 - May 20	from - 295	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle
adult, larva	May 20 - Jun 10	- - -	Remainder of season between the beginning and end phenology
adult, larva	Jun 10 - Jun 20	to - 610	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*abamectin	Mauget Abacide 2	BEE CAUTION	W	
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Lepitect	BEE CAUTION	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
	Aza-Direct		C	4 hours
azadirachtin	AzaGuard		C	4 hours
	Onyx Pro	BEE CAUTION	W	12 hours
*bifenthrin	Talstar P Professional	BEE CAUTION	C	12 hours
	Safari 20 SG	BEE CAUTION	C	12 hours
*dinotefuran	Tree-age	BEE CAUTION	W	
*emamectin benzoate	Mallet 75 WSP	BEE CAUTION	C	12 hours
*imidacloprid	Merit 75WSP	BEE CAUTION	C	12 hours
	Xytect 2F	BEE CAUTION	C	
	Demand CS	BEE CAUTION	C	
lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
*lambda-cyhalothrin	Astro	BEE CAUTION	C	12 hours
	Perm-UP 3.2EC	BEE CAUTION	C	12 hours
*permethrin	Meridian 0.33G	BEE CAUTION	C	12 hours
*thiamethoxam				

Additional information on biology and control

Systemics, such as acephate and imidacloprid can be applied at any time the soil is not waterlogged or frozen but contacts such as bifenthrin and permethrin need to be applied when adults are

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

CHERRY AND HAWTHORN LEAFMINER

Profenusa canadensis

Page 188 (Johnson & Lyon)

present. See Control: Stage and Timing.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

***restricted use pesticide**

****ESA approved common name**

^for agricultural applications only.

DORMANT SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
fir	<i>Abies</i>
hemlock	<i>Tsuga</i>
spruce	<i>Picea</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph (crawler)	Sep 15	Apr 01	foliage	discoloration, twig dieback	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
egg	Mar 01 - Apr 10	0 - 41	None Offered

Chemical Control

Comments

Signal Agricultural
Word Restricted Entry
Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

horticultural oil	Damoil	C	4 hours
	Sunspray Ultra-Fine SprayOil	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

CIRCULAR HEMLOCK SCALE

Nuculaspis tsugae

Page 102 (Johnson & Lyon)

DELAYED DORMANT

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
hemlock	<i>Tsuga</i>
spruce	<i>Picea</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph	Apr 01	Apr 20	foliage	discoloration, twig dieback	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
egg	Apr 01 - Apr 20	28 - 96	plants bloom: silver maple, Cornelian cherry, pussy willow

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
horticultural oil	Damoil	C	4 hours
	Sunspray Ultra-Fine SprayOil	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
hemlock	<i>Tsuga</i>
spruce	<i>Picea</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult	Apr 01	Sep 15	foliage	discoloration, twig dieback	visual inspection
nymph	May 15	Aug 01	foliage	discoloration, twig dieback	visual inspection
nymph	Sep 01	Nov 01	foliage	discoloration, twig dieback	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
crawler	Jun 20 - Jun 30	737 - 967	plants bloom: Rhododendron maximum, Spiraea bumalda, Philadelphus
crawler	Jul 01 - Jul 10	989 - 1196	plants bloom: Ceanothus americanus, Clematis jackmanii, Tilia cordata
crawler	Jul 10 - Jul 20	1196 - 1417	plants bloom: Abelia, golden rain tree, sourwood
crawler	Sep 01 - Sep 10	2418 - 2576	plant fruit in color: sweet autumn clematis, Polygonum aubertii

Biological Control

	<u>Comments</u>
<i>Lindorus lophanthae</i> (lady beetle - scale predator)	Available commercially
<i>Chilocorus stigma</i> (lady beetle - predator)	occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	C	24 hours
	Lepitect	C	24 hours
	Orthene T,T & O WSP	C	24 hours
acetamiprid	TriStar 8.5 SL	C	12 hours
buprofezin	Talus 70DF	W	12 hours
carbaryl	Carbaryl 4L	C	12 hours
	Sevin SL	C	12 hours
	*deltamethrin	Suspend SC	C
*dinotefuran	Safari 20 SG	C	12 hours
flonicamid	Aria	C	12 hours
horticultural oil	Damoil	C	4 hours
	Sunspray Ultra-Fine Spray Oil	C	4 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate	W	12 hours
	M-Pede	W	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

CIRCULAR HEMLOCK SCALE

Nuculaspis tsugae

Page 102 (Johnson & Lyon)

<u>Chemical Control</u>		<u>Comments</u>	<u>Signal Word</u>	Agricultural Restricted Entry Interval (REI)^
<i>Reference use only. NOT a label substitute.</i>				
<i>Select the appropriate insecticide/miticide for the correct life stage of the target pest.</i>				
lambda-cyhalothrin	Demand CS	<i>Effective against immatures. Bee caution.</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>Effective against immatures. Bee caution.</i>	C	24 hours
malathion	Malathion 5 EC	<i>Effective against immatures. Bee caution.</i>	W	12 hours
	Malathion 8 Flowable	<i>Effective against immatures. Bee caution.</i>	C	12 hours
pyrethrin	PyGanic	<i>OMRI listed, effective against immatures</i>	C	12 hours
pyriproxyfen	Distance IGR	<i>Only effective against immatures.</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

DORMANT SEASON

Apply thorough treatment only when pest stage found.

Host Plants: Common Name	Scientific Name
apple	<i>Malus</i>
boxwood	<i>Buxus spp.</i>
burning bush, winged euonymus	<i>Euonymus alatus</i>
crabapple	<i>Malus</i>
elm	<i>Ulmus</i>
holly	<i>Ilex</i>
horsechestnut	<i>Aesculus hippocastanum</i>
maple	<i>Acer</i>
mulberry	<i>Morus</i>
peach	<i>Prunus persica</i>
pear	<i>Pyrus calleryana</i>
pine	<i>Pinus</i>
poplar or aspen	<i>Populus</i>
Weigelia	<i>Weigelia</i>
Wisteria	<i>Wisteria</i>
yew	<i>Taxus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
egg	Mar 01	Apr 15	foliage		visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
egg	Mar 01 - Apr 15	0 - 69	None Offered

Chemical Control

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
	<i>Reference use only. NOT a label substitute.</i>		
	<i>Select the appropriate insecticide/miticide for the correct life stage of the target pest.</i>		
horticultural oil	Damoil	C	4 hours
	Sunspray Ultra-Fine Spray Oil	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

COMSTOCK MEALYBUG**

Pseudococcus comstocki

Page 326 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **WHOLE PLANT**

<u>Host Plants: Common Name</u>	<u>Scientific Name</u>
apple	<i>Malus</i>
boxwood	<i>Buxus spp.</i>
burning bush, winged euonymus	<i>Euonymus alatus</i>
crabapple	<i>Malus</i>
elm	<i>Ulmus</i>
holly	<i>Ilex</i>
horsechestnut	<i>Aesculus hippocastanum</i>
maple	<i>Acer</i>
mulberry	<i>Morus</i>
peach	<i>Prunus persica</i>
pear	<i>Pyrus calleryana</i>
pine	<i>Pinus</i>
poplar or aspen	<i>Populus</i>
privet	<i>Ligustrum</i>
Weigelia	<i>Weigelia</i>
Wisteria	<i>Wisteria</i>
yew	<i>Taxus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph (crawler)	May 01	Sep 30	bark, foliage	discoloration, leaf drop	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult, crawler	Jun 01 - Jun 10	437 - 563	plants bloom: Kousa dogwood, cranberry bush, beautybush
adult, crawler	Aug 01 - Aug 10	1700 - 1933	plant bloom: Pee Gee Hydrangea blooms turn pink

Biological Control

Cryptolaemus montrouzieri (lady beetle predator)

Comments

Available commercially; occurs naturally

Chrysoperla sp. (green lacewing - predator)

Available commercially; occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal</u>	<u>Agricultural Restricted Entry</u>
			<u>Word</u>	<u>Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C	12 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

Chemical Control*Reference use only. NOT a label substitute.**Select the appropriate insecticide/miticide for the correct life stage of the target pest.*

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
	Talstar P Professional	<i>BEE CAUTION</i>	C	12 hours
buprofezin	Talus 70DF	<i>Only effective against immatures.</i>	W	12 hours
carbaryl	Carbaryl 4L	<i>BEE CAUTION</i>	C	12 hours
	Sevin SL	<i>BEE CAUTION</i>	C	12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	<i>Non-residential, BEE CAUTION</i>	W	24 hours
*clothianidin + bifenthrin	Aloft GC G	<i>BEE CAUTION</i>	C	12 hours
*clothianidin	Arena .25 G		C	12 hours
	Arena 50 WDG		C	12 hours
*deltamethrin	Suspend SC	<i>BEE CAUTION</i>	C	
*dinotefuran	Safari 20 SG	<i>BEE CAUTION</i>	C	12 hours
*fenpropathrin	Tame 2.4EC	<i>BEE CAUTION</i>	W	24 hours
fenpyroximate	Akari 5SC	<i>Suppression</i>	W	12 hours
flonicamid	Aria		C	12 hours
horticultural oil	Damoil		C	4 hours
	Sunspray Ultra-Fine Spray Oil		C	4 hours
*imidacloprid	Mallet 75 WSP	<i>BEE CAUTION</i>	C	12 hours
	Merit 75WSP	<i>BEE CAUTION</i>	C	12 hours
	Xytect 2F	<i>BEE CAUTION</i>	C	
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
malathion	Malathion 5 EC	<i>BEE CAUTION</i>	W	12 hours
	Malathion 8 Flowable	<i>BEE CAUTION</i>	C	12 hours
*permethrin	Astro	<i>BEE CAUTION</i>	C	12 hours
	Perm-UP 3.2EC	<i>BEE CAUTION</i>	C	12 hours
phosmet	Imidan 70W	<i>BEE CAUTION</i>	W	24 hours
pyrethrin	PyGanic	<i>OMRI listed</i>	C	12 hours
*thiamethoxam	Meridian 0.33G	<i>BEE CAUTION</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

COOLEY SPRUCE GALL ADELGID**

Adelges cooleyi

Page 76, 112 (Johnson & Lyon)

DORMANT SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **BASE OF BUD**

Host Plants: Common Name	Scientific Name
douglas fir	<i>Pseudotsuga menziesii</i>
spruce, Colorado	<i>Picea pungens</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph	Mar 01	Apr 15	twig bark (spruce)		visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph	Mar 01 - Apr 10	0 - 41	None Offered

Chemical Control

Comments

Signal Agricultural
Word Restricted Entry
Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

horticultural oil	Damoil	C	4 hours
	Sunspray Ultra-Fine SprayOil	C	4 hours

Additional information on biology and control

WARNING: use of oil on blue colored conifers will cause color to change.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**Part of plant to treat: **BASE OF EXPANDING BUD**

Host Plants: Common Name	Scientific Name
douglas fir	<i>Pseudotsuga menziesii</i>
spruce, Colorado	<i>Picea pungens</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph	May 01	Sep 30	twig bark (spruce)	gall	visual inspection
nymph	Jun 15	Sep 30	foliage (Douglas-fir)	discoloration, distortion	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph, adult	May 01 - May 10	120 - 190	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry
nymph, adult	Jul 20 - Jul 31	1500 - 1775	plants bloom: butterfly bush, Clethra alnifolia, false spirea
nymph, adult	Aug 01 - Aug 10	1500 - 1775	plant bloom: Pee Gee Hydrangea blooms turn pink
nymph, adult	Sep 15 - Oct 10	1850 - 1950	None Offered

Chemical Control**Comments**

Signal **Agricultural**
Word **Restricted Entry**
Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

acetamiprid	TriStar 8.5 SL	BEE CAUTION	C	12 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C	12 hours
*clothianidin	Arena .25 G		C	12 hours
*deltamethrin	Suspend SC	BEE CAUTION	C	
horticultural oil	Damoil		C	4 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C	12 hours
	Merit 75WSP	BEE CAUTION	C	12 hours
	Xytect 2F	BEE CAUTION	C	
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
*thiamethoxam	Meridian 0.33G	BEE CAUTION	C	12 hours

Additional information on biology and control

WARNING: use of oil on blue colored conifers will cause color to change.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

COTTONY CAMELLIA (TAXUS) SCALE**

Pulvinaria floccifera

Page 344 (Johnson & Lyon)

DORMANT SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE, STEMS**

Host Plants: Common Name	Scientific Name
beautyberry	<i>Callicarpa</i>
burning bush, winged euonymus	<i>Euonymus alatus</i>
holly	<i>Ilex</i>
Hydrangea	<i>Hydrangea</i>
maple, Japanese	<i>Acer palmatum</i>
winterberry, common	<i>Ilex verticillata</i>
yew	<i>Taxus</i>

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
immature	Mar 01 - Apr 10	0 - 40	None Offered

Chemical Control

Comments

Signal Agricultural
Word Restricted Entry
Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

horticultural oil	Damoil	C	4 hours
	Sunspray Ultra-Fine Spray Oil	C	4 hours

Additional information on biology and control

Cottony camellia/taxus scale overwinters as a second instar mostly on twigs. Females produce long white cottony egg masses on the undersides of host leaves in the late spring. Crawler treatments should be applied after the eggs have hatched around mid-June, between 800 and 1400 degree days. Crawlers will disperse to new areas, insert their mouthparts, and begin to feed. Once settled, the young scales never move again. There is one generation per year. Black sooty mold grows on the honeydew that falls on the foliage below where scales are feeding.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE, STEMS**

Host Plants: Common Name	Scientific Name
Azalea	<i>Azalea</i>
beautyberry	<i>Callicarpa</i>
Euonymus	<i>Euonymus</i>
holly	<i>Ilex</i>
Hydrangea	<i>Hydrangea</i>
maple, Japanese	<i>Acer palmatum</i>
Rhododendron	<i>Rhododendron</i>
winterberry, common	<i>Ilex verticillata</i>
yew	<i>Taxus</i>

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
crawler	Jun 20 - Jul 10	from - 800	plants bloom: Ceanothus americanus, Clematis jackmanii, Tilia cordata
crawler	Jul 10 - Jul 20	to - 1400	plants bloom: Abelia, golden rain tree, sourwood

Biological Control

	<u>Comments</u>
<i>Lindorus lophanthae</i> (lady beetle - scale predator)	Available commercially
<i>Cryptolaemus montrouzieri</i> (lady beetle predator)	Available commercially; occurs naturally
<i>Chrysoperla sp.</i> (green lacewing - predator)	Available commercially; occurs naturally
<i>Chilocorus stigma</i> (lady beetle - predator)	occurs naturally

Chemical Control

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
<i>Reference use only. NOT a label substitute.</i>			
<i>Select the appropriate insecticide/miticide for the correct life stage of the target pest.</i>			
acephate	Acephate 97 WDG	BEE CAUTION	C 24 hours
	Lepitect	Effective against immatures. Bee caution.	C 24 hours
	Orthene T,T & O WSP	BEE CAUTION	C 24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C 12 hours
*bifenthrin	Onyx Pro	Effective against immatures. Bee caution.	W 12 hours
	Talstar P Professional	Effective against immatures. Bee caution.	C 12 hours
buprofezin	Talus 70DF	Only effective against immatures.	W 12 hours
carbaryl	Carbaryl 4L	Effective against immatures. Bee caution.	C 12 hours
	Sevin SL	BEE CAUTION	C 12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W 24 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C 12 hours
*clothianidin	Arena .25 G		C 12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

COTTONY CAMELLIA (TAXUS) SCALE**

Pulvinaria floccifera

Page 344 (Johnson & Lyon)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*deltamethrin	Suspend SC	<i>Effective against immatures. Bee caution.</i>	C	
*dinotefuran	Safari 20 SG	<i>BEE CAUTION</i>	C	12 hours
flonicamid	Aria		C	12 hours
horticultural oil	Damoil		C	4 hours
	Sunspray Ultra-Fine Spray Oil		C	4 hours
*imidacloprid	Mallet 75 WSP	<i>BEE CAUTION</i>	C	12 hours
	Merit 75WSP	<i>BEE CAUTION</i>	C	12 hours
	Xytect 2F	<i>BEE CAUTION</i>	C	
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede	<i>Only effective against immatures.</i>	W	12 hours
lambda-cyhalothrin	Demand CS	<i>Effective against immatures. Bee caution.</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>Effective against immatures. Bee caution.</i>	C	24 hours
malathion	Malathion 5 EC	<i>Effective against immatures. Bee caution.</i>	W	12 hours
	Malathion 8 Flowable	<i>Effective against immatures. Bee caution.</i>	C	12 hours
pyrethrin	PyGanic	<i>OMRI listed, effective against immatures</i>	C	12 hours
pyriproxyfen	Distance IGR	<i>Only effective against immatures.</i>	C	12 hours
*thiamethoxam	Meridian 0.33G	<i>BEE CAUTION</i>	C	12 hours

Additional information on biology and control

See Dormant Season page for additional information on pest biology.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

DORMANT SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **STEM**

Host Plants: Common Name	Scientific Name
andromeda	<i>Pieris japonica</i>
blackgum, tupelo	<i>Nyssa sylvatica</i>
dogwood	<i>Cornus</i>
holly	<i>Ilex</i>
honeysuckle	<i>Lonicera</i>
maple	<i>Acer</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph	Mar 01	Apr 15	bark	twig death	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph	Mar 01 - Apr 10	0 - 40	None Offered

Chemical Control

Comments

Signal Agricultural
Restricted Entry
Word Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

horticultural oil	Damoil	C	4 hours
	Sunspray Ultra-Fine SprayOil	C	4 hours

Additional information on biology and control

Cottony maple leaf scale overwinters as partially grown nymphs on twigs and branches. Mature females migrate to leaves in May and produce long white cottony egg masses on the undersides of host leaves. Egg hatch generally occurs about mid-June, with mobile nymphs or ‘crawlers’ dispersing onto new parts of the plant. Crawlers will settle, insert their mouthparts, and begin to feed. In the fall the young scales migrate back to twigs to overwinter. There is one generation per year.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

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COTTONY MAPLE LEAF SCALE

Pulvinaria acericola

Page 340, 342, 346 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
andromeda	<i>Pieris japonica</i>
blackgum, tupelo	<i>Nyssa sylvatica</i>
dogwood	<i>Cornus</i>
holly	<i>Ilex</i>
honeysuckle	<i>Lonicera</i>
maple	<i>Acer</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
adult	May 15	Sep 30	foliage	discoloration, leaf drop	visual inspection
nymph (crawler)	Jun 20	Jul 30	foliage	discoloration, leaf drop	visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
nymph	Jun 20 - Jun 30	from - 800	plants bloom: Rhododendron maximum, Spiraea bumalda, Philadelphus
nymph, adult	Jul 01 - Jul 20	- - -	Remainder of season between the beginning and end phenology
nymph, adult	Jul 20 - Jul 30	to - 1265	plants bloom: butterfly bush, Clethra alnifolia, false spirea

Biological Control

Lindorus lophanthae (lady beetle - scale predator)

Cryptolaemus montrouzieri (lady beetle predator)

Chrysoperla sp. (green lacewing - predator)

Chilocorus stigma (lady beetle - predator)

Comments

Available commercially

Available commercially; occurs naturally

Available commercially; occurs naturally

occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Lepitect	Effective against immatures. Bee caution.	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C	12 hours
*bifenthrin	Talstar P Professional	Effective against immatures. Bee caution.	C	12 hours
buprofezin	Talus 70DF	Only effective against immatures.	W	12 hours
carbaryl	Carbaryl 4L	Effective against immatures. Bee caution.	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W	24 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

COTTONY MAPLE LEAF SCALE

Pulvinaria acericola

Page 340, 342, 346 (Johnson & Lyon)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*clothianidin	Arena .25 G		C	12 hours
*deltamethrin	Suspend SC	<i>Effective against immatures. Bee caution.</i>	C	
*dinotefuran	Safari 20 SG	<i>BEE CAUTION</i>	C	12 hours
flonicamid	Aria		C	12 hours
horticultural oil	Damoil		C	4 hours
	Sunspray Ultra-Fine Spray Oil		C	4 hours
*imidacloprid	Mallet 75 WSP	<i>BEE CAUTION</i>	C	12 hours
	Merit 75WSP	<i>BEE CAUTION</i>	C	12 hours
	Xytect 2F	<i>BEE CAUTION</i>	C	
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede	<i>Only effective against immatures.</i>	W	12 hours
lambda-cyhalothrin	Demand CS	<i>Effective against immatures. Bee caution.</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>Effective against immatures. Bee caution.</i>	C	24 hours
malathion	Malathion 5 EC	<i>Effective against immatures. Bee caution.</i>	W	12 hours
	Malathion 8 Flowable	<i>Effective against immatures. Bee caution.</i>	C	12 hours
pyrethrin	PyGanic	<i>OMRI listed, effective against immatures</i>	C	12 hours
pyriproxyfen	Distance IGR	<i>Only effective against immatures.</i>	C	12 hours
*thiamethoxam	Meridian 0.33G	<i>BEE CAUTION</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

COTTONY MAPLE SCALE**

Pulvinaria innumerabilis
Page 340, 346 (Johnson & Lyon)

DORMANT SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **STEM**

<u>Host Plants: Common Name</u>	<u>Scientific Name</u>
beech	<i>Fagus</i>
cherry, flowering	<i>Prunus</i>
dogwood	<i>Cornus</i>
elm	<i>Ulmus</i>
Euonymus	<i>Euonymus</i>
hackberry	<i>Celtis occidentalis</i>
hawthorn	<i>Crataegus</i>
honeysuckle	<i>Gleditsia triacanthos</i>
lilac	<i>Syringa</i>
linden	<i>Tilia</i>
maple	<i>Acer</i>
mulberry	<i>Morus</i>
oak	<i>Quercus</i>
peach	<i>Prunus persica</i>
pear	<i>Pyrus calleryana</i>
plum	<i>Prunus cerasifera</i>
poplar or aspen	<i>Populus</i>
rose	<i>Rosa</i>
spirea	<i>Spiraea</i>
sycamore	<i>Platanus occidentalis</i>
willow	<i>Salix</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph	Mar 01	Apr 15	twig bark	twig death	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph	Mar 01 - Apr 10	0 - 41	None Offered

Chemical Control

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
	<i>Reference use only. NOT a label substitute.</i>		
	<i>Select the appropriate insecticide/miticide for the correct life stage of the target pest.</i>		
horticultural oil	Damoil	C	4 hours
	Sunspray Ultra-Fine SprayOil	C	4 hours

Additional information on biology and control

Cottony maple scale overwinters as immature females on twigs. Females produce long white cottony egg masses on the undersides of host leaves in late May. Egg hatch occurs around late June, with mobile nymphs or 'crawlers' dispersing onto either leaf surface for the summer. Males

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

mature in the early fall and mate with immature females. Females migrate to bark to spend the winter. Unfertilized females produce only male offspring. There is one generation per year.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

***restricted use pesticide**

****ESA approved common name**

^for agricultural applications only.

COTTONY MAPLE SCALE**

Pulvinaria innumerabilis
Page 340, 346 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE**

<u>Host Plants: Common Name</u>	<u>Scientific Name</u>
beech	<i>Fagus</i>
cherry, flowering	<i>Prunus</i>
dogwood	<i>Cornus</i>
elm	<i>Ulmus</i>
Euonymus	<i>Euonymus</i>
hackberry	<i>Celtis occidentalis</i>
hawthorn	<i>Crataegus</i>
honeysuckle	<i>Gleditsia triacanthos</i>
lilac	<i>Syringa</i>
linden	<i>Tilia</i>
maple	<i>Acer</i>
mulberry	<i>Morus</i>
oak	<i>Quercus</i>
peach	<i>Prunus persica</i>
pear	<i>Pyrus calleryana</i>
plum	<i>Prunus cerasifera</i>
poplar or aspen	<i>Populus</i>
rose	<i>Rosa</i>
spirea	<i>Spiraea</i>
sycamore	<i>Platanus occidentalis</i>
willow	<i>Salix</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph (crawler)	Jun 20	Sep 30	foliage	discoloration, dieback	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
immature	Apr 20 - Apr 30	from - 7	plants bloom: boxelder, star magnolia, periwinkle, Norway maple
immature	May 01 - May 10	to - 178	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry
egg, crawler	Jun 20 - Jun 30	from - 802	plants bloom: Rhododendron maximum, Spiraea bumalda, Philadelphus
crawler	Jul 01 - Jul 10	- -	plants bloom: Ceanothus americanus, Clematis jackmanii, Tilia cordata
crawler	Jul 10 - Jul 31	to - 1265	plants bloom: Abelia, golden rain tree, sourwood

Biological Control

Lindorus lophanthae (lady beetle - scale predator)
Cryptolaemus montrouzieri (lady beetle predator)
Chrysoperla sp. (green lacewing - predator)

Comments

Available commercially
Available commercially; occurs naturally
Available commercially; occurs naturally

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

Biological Control*Chilocorus stigma (lady beetle - predator)***Comments***occurs naturally***Chemical Control***Reference use only. NOT a label substitute.**Select the appropriate insecticide/miticide for the correct life stage of the target pest.*

		<u>Comments</u>	<u>Signal</u>	<u>Agricultural</u>
			<u>Word</u>	<u>Restricted Entry</u>
				<u>Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Lepitect	Effective against immatures. Bee caution.	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C	12 hours
*bifenthrin	Talstar P Professional	Effective against immatures. Bee caution.	C	12 hours
buprofezin	Talus 70DF	Only effective against immatures.	W	12 hours
carbaryl	Carbaryl 4L	Effective against immatures. Bee caution.	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W	24 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C	12 hours
*clothianidin	Arena .25 G		C	12 hours
*deltamethrin	Suspend SC	Effective against immatures. Bee caution.	C	
*dinotefuran	Safari 20 SG	BEE CAUTION	C	12 hours
flonicamid	Aria		C	12 hours
horticultural oil	Damoil		C	4 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C	12 hours
	Merit 75WSP	BEE CAUTION	C	12 hours
	Xytect 2F	BEE CAUTION	C	
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede	Only effective against immatures.	W	12 hours
lambda-cyhalothrin	Demand CS	Effective against immatures. Bee caution.	C	
*lambda-cyhalothrin	Scimitar GC	Effective against immatures. Bee caution.	C	24 hours
malathion	Malathion 5 EC	Effective against immatures. Bee caution.	W	12 hours
	Malathion 8 Flowable	Effective against immatures. Bee caution.	C	12 hours
pyriproxyfen	Distance IGR	Only effective against immatures.	C	12 hours
*thiamethoxam	Meridian 0.33G	BEE CAUTION	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

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CRYPTOMERIA SCALE

Aspidiotus cryptomeriae

DORMANT SEASON

Apply thorough treatment only when pest stage found.

Host Plants: Common Name

Scientific Name

cedar, atlas	<i>Cedrus atlanticus</i>
cryptomeria	<i>Cryptomeria</i>
douglas fir	<i>Pseudotsuga menziesii</i>
falsecypress	<i>Chamaecyparis</i>
hemlock	<i>Tsuga</i>
pine	<i>Pinus</i>
spruce	<i>Picea</i>
yew	<i>Taxus</i>

Additional information on biology and control

The cryptomeria, or ‘fried hard egg’ scale is native to Japan and can have two generations a year in Connecticut. Crawlers are present from June into July and again in late August into September. This elongated, somewhat transparent scale overwinters as a second instar on the undersides of needles.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

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GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **NEEDLES**

Host Plants: Common Name	Scientific Name
cedar, atlas	<i>Cedrus atlanticus</i>
cryptomeria	<i>Cryptomeria</i>
douglas fir	<i>Pseudotsuga menziesii</i>
falsecypress	<i>Chamaecyparis</i>
fir	<i>Abies</i>
hemlock	<i>Tsuga</i>
pine	<i>Pinus</i>
spruce	<i>Picea</i>
yew	<i>Taxus</i>

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
crawler	Jun 15 - Jul 31	630 - 2380	plants bloom: Abelia, golden rain tree, sourwood

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	<i>BEE CAUTION</i>	C	24 hours
buprofezin	Talus 70DF	<i>Only effective against immatures.</i>	W	12 hours
*dinotefuran	Safari 20 SG	<i>BEE CAUTION</i>	C	12 hours
malathion	Malathion 8 Flowable	<i>Effective against immatures. Bee caution.</i>	C	12 hours
pyrethrin	PyGanic	<i>OMRI listed, effective against immatures</i>	C	12 hours
pyriproxyfen	Distance IGR	<i>Only effective against immatures.</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

CURRANT BORER**

Synanthedon tipuliformis

DELAYED DORMANT

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **STEM**

Host Plants: Common Name	Scientific Name
elder	<i>Sambucus</i>

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
larva	Apr 01 - Apr 20	28 -	96 plants bloom: silver maple, Cornelian cherry, pussy willow

Non Chemical Control

Remove and destroy infested plant parts.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Frequency with which pest occurs: OCCASIONAL

Part of plant to treat: STEM

Host Plants: Common Name	Scientific Name
elder	Sambucus

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
larva	Apr 20 - Apr 30	96 - 137	plants bloom: boxelder, star magnolia, periwinkle, Norway maple
larva	May 01 - Jun 10	144 - 563	Remainder of season between the beginning and end phenology
larva	Jun 10 - Jun 20	563 - 737	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn

Non Chemical Control

Remove and destroy infested plant parts.

Chemical Control

Comments

Signal Agricultural
Word Restricted Entry
Interval (REI)^

*Reference use only. NOT a label substitute.
Select the appropriate insecticide/miticide for the correct life stage of the target pest.*

chlorantraniliprole	Acelepryn	4 hours
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Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide **ESA approved common name ^for agricultural applications only.

DOGWOOD BORER**

Synanthedon scitula

Page 262 (Johnson & Lyon)

Page 15 (Adams & Packauskas)

GROWING SEASON

Annual cover sprays are suggested.

Frequency with which pest occurs: ANNUAL

Part of plant to treat: TRUNK, STEM

Host Plants: Common Name	Scientific Name
apple	<i>Malus</i>
bayberry	<i>Myrica pensylvanica</i>
beech	<i>Fagus</i>
birch	<i>Betula</i>
blueberry	<i>Vaccinium</i>
cherry, black	<i>Prunus serotina</i>
chestnut, hybrids	<i>Castanea</i>
dogwood	<i>Cornus</i>
filbert or hazelnut	<i>Corylus</i>
mountain ash, European	<i>Sorbus aucuparia</i>
oak	<i>Quercus</i>
pine	<i>Pinus</i>
plum	<i>Prunus cerasifera</i>
willow	<i>Salix</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
adult (clearwing moth)	May 15	Sep 30	bark		pheromone traps
larva	Jul 01	Oct 30	trunk, branch	discoloration, dieback	visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
adult	May 01 - May 10	148 - 700	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry
adult, egg	May 10 - May 20	148 - 700	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle
adult	Jun 01 - Jun 10	148 - 700	plants bloom: Kousa dogwood, cranberry bush, beautybush
adult	Jun 10 - Sep 30	700 - 2500	rest of season

Biological Control

	Comments
<i>Steinernema feltiae</i> (nematode)	Available commercially
<i>Steinernema carpocapsae</i> (nematode)	Available commercially
<i>Heterorhabditis bacteriophora</i> (nematode)	Available commercially

Chemical Control

	Comments	Signal Word	Agricultural Restricted Entry Interval (REI)^
<i>Reference use only. NOT a label substitute.</i>			
<i>Select the appropriate insecticide/miticide for the correct life stage of the target pest.</i>			
*abamectin	Mauget Abacide 2	BEE CAUTION	W
*bifenthrin	Onyx Pro	BEE CAUTION	W 12 hours
	Talstar P Professional	BEE CAUTION	C 12 hours
chlorantraniliprole	Acelepryn		4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

<u>Chemical Control</u>		<u>Comments</u>	<u>Signal Word</u>	Agricultural Restricted Entry Interval (REI)^
*chlorpyrifos	Chlorpyrifos 4E AG	<i>Non-residential, BEE CAUTION</i>	W	24 hours
*clothianidin + bifenthrin	Aloft GC G	<i>BEE CAUTION</i>	C	12 hours
*emamectin benzoate	Tree-age	<i>BEE CAUTION</i>	W	
*permethrin	Astro	<i>BEE CAUTION</i>	C	12 hours
	Perm-UP 3.2EC	<i>BEE CAUTION</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

DOGWOOD CLUBGALL MIDGE**

Resseliella clavula

Page 436 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **YOUNG LEAVES AND SHOOTS**

Host Plants: Common Name	Scientific Name
dogwood	<i>Cornus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult	Jun 01	Jul 01	foliage		visual inspection, sticky cards
larva	Jul 01	Sep 30	leaf petiole	distortion, gall	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult	Jun 20 - Jun 30	737 - 967	plants bloom: Rhododendron maximum, Spiraea bumalda, Philadelphus
adult	Jun 30 - Jul 31	967 - 1673	Remainder of season between the beginning and end phenology
adult	Aug 01 - Aug 10	1700 - 1933	plant bloom: Pee Gee Hydrangea blooms turn pink

Non Chemical Control

Remove and destroy badly infested branch & tree parts.

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*bifenthrin	Talstar P Professional	<i>BEE CAUTION</i>	C	12 hours
carbaryl	Carbaryl 4L	<i>BEE CAUTION</i>	C	12 hours
	Sevin SL	<i>BEE CAUTION</i>	C	12 hours
*deltamethrin	Suspend SC	<i>BEE CAUTION</i>	C	
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
spinosad	Conserve SC	<i>Most effective against young larvae.</i>	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
dogwood	<i>Cornus</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
larva	Jul 01	Jul 31	foliage	defoliation	visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
larva	Jul 01 - Jul 10	1151 - 1500	plants bloom: Ceanothus americanus, Clematis jackmanii, Tilia cordata
larva	Jul 10 - Jul 20	1151 - 1500	plants bloom: Abelia, golden rain tree, sourwood
larva	Jul 20 - Jul 31	1500 - 1673	plants bloom: butterfly bush, Clethra alnifolia, false spirea

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	Comments	Signal Word	Agricultural Restricted Entry Interval (REI)^
*abamectin	Mauget Abacide 2	BEE CAUTION	W
acephate	Acephate 97 WDG	BEE CAUTION	C 24 hours
	Lepitect	BEE CAUTION	C 24 hours
	Orthene T,T & O WSP	BEE CAUTION	C 24 hours
azadirachtin	Aza-Direct		C 4 hours
	AzaGuard		C 4 hours
*bifenthrin	Talstar P Professional	BEE CAUTION	C 12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C 12 hours
	Sevin SL	BEE CAUTION	C 12 hours
	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W 24 hours
*deltamethrin	Suspend SC	BEE CAUTION	C
*emamectin benzoate	Tree-age	BEE CAUTION	W
horticultural oil	Damoil		C 4 hours
	Sunspray Ultra-Fine Spray Oil		C 4 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C 12 hours
	Merit 75WSP	BEE CAUTION	C 12 hours
	Xytect 2F	BEE CAUTION	C
insecticidal soap	Des-X Insecticidal Soap Concentrate		W 12 hours
	M-Pede	Only effective against immatures.	W 12 hours
lambda-cyhalothrin	Demand CS	BEE CAUTION	C
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C 24 hours
*permethrin	Perm-UP 3.2EC	BEE CAUTION	C 12 hours
spinosad	Conserve SC	Most effective against young larvae.	C 4 hours
*thiamethoxam	Meridian 0.33G	BEE CAUTION	C 12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

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DOGWOOD SAWFLY

Macremphytus tarsatus

Page 126 (Johnson & Lyon)

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

***restricted use pesticide**

****ESA approved common name**

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **STEM**

Host Plants: Common Name	Scientific Name
dogwood	<i>Cornus</i>
Rhododendron	<i>Rhododendron</i>
sourwood	<i>Oxydendrum arboreum</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult (beetle)	Jun 01	Jul 15	bark, foliage	distortion	visual inspection
larva	Aug 01	Jun 01	twig, main stem	twig (exit hole), dieback	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult?	Jun 01 - Jun 10	437 - 563	plants bloom: Kousa dogwood, cranberry bush, beautybush
adult?	Jun 10 - Jun 20	563 - 737	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn
adult?	Jun 20 - Jun 30	737 - 967	plants bloom: Rhododendron maximum, Spiraea bumalda, Philadelphus

Chemical Control

Comments

Signal **Agricultural**
Word **Restricted Entry**
Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

*bifenthrin	Onyx Pro	<i>BEE CAUTION</i>	W	12 hours
	Talstar P Professional	<i>BEE CAUTION</i>	C	12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	<i>Non-residential, BEE CAUTION</i>	W	24 hours
*clothianidin + bifenthrin	Aloft GC G	<i>BEE CAUTION</i>	C	12 hours
*clothianidin	Arena .25 G		C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

DUSKY BIRCH SAWFLY

Croesus latitarsus

Page page 128 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
birch	<i>Betula</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
adult (sawfly)	May 01	May 31	foliage just after bud break		visual inspection, sticky cards
larva	May 31	Jul 15	foliage	defoliation	visual inspection
adult (sawfly)	Jul 15	Sep 01	foliage		visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
adult, egg	Jun 01 - Jun 30	408 - 940	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn
larva	Aug 01 - Sep 30	1685 - 2850	plants bloom: butterfly bush, Clethra alnifolia, false spirea

Chemical Control

Comments

Signal Word **Agricultural Restricted Entry Interval (REI)^**

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

*abamectin	Mauget Abacide 2	<i>BEE CAUTION</i>	W	
acephate	Acephate 97 WDG	<i>BEE CAUTION</i>	C	24 hours
	Lepitect	<i>BEE CAUTION</i>	C	24 hours
horticultural oil	Sunspray Ultra-Fine Spray Oil		C	4 hours
*imidacloprid	Xytect 2F	<i>BEE CAUTION</i>	C	
spinosad	Conserve SC	<i>Most effective against young larvae.</i>	C	4 hours
*thiamethoxam	Meridian 0.33G	<i>BEE CAUTION</i>	C	12 hours

Additional information on biology and control

Dusky birch sawfly overwinters as a prepupae in the soil. First generation adults emerge in May. Females use their saw-like ovipositor to lay eggs in leaf tissue. The black headed larvae have a yellow body with longitudinal rows of black spots in the later stages. Larvae feed from the edge of the leaf and maintain a unique “S” shape to their body. A second generation of adults emerges in mid-July with caterpillars feeding into the fall.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

DELAYED DORMANT

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **STEM**

Host Plants: Common Name	Scientific Name
pine	<i>Pinus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult	Mar 01	Apr 20	debris at base of tree		visual inspection of deb

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult	Apr 01 - Apr 20	28 -	96 plants bloom: silver maple, Cornelian cherry, pussy willow

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

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EASTERN PINE WEEVIL**

Pissodes nemorensis

Page 54, 56 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **STEM**

<u>Host Plants: Common Name</u>	<u>Scientific Name</u>
cedar, atlas	<i>Cedrus atlanticus</i>
pine	<i>Pinus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult	May 01	Sep 30	branch	discoloration	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult	Apr 20 - Apr 30	96 - 137	plants bloom: boxelder, star magnolia, periwinkle, Norway maple
adult	May 01 - May 10	144 - 228	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C	12 hours
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
pyrethrin	PyGanic	OMRI listed	C	12 hours
	Pyrenone		C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

DORMANT SEASON**Annual cover sprays are suggested.**Frequency with which pest occurs: **ANNUAL**Part of plant to treat: **BASE OF EXPANDING BUD**

Host Plants: Common Name	Scientific Name
spruce	<i>Picea</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph	Mar 01	Apr 15	twig bark		visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
immature	Mar 01 - Apr 10	0 - 41	None Offered

Non Chemical Control

Remove highly susceptible white spruce.

Do not grow highly susceptible white spruce.

Chemical Control**Comments**

<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
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*Reference use only. NOT a label substitute.**Select the appropriate insecticide/miticide for the correct life stage of the target pest.*

horticultural oil	Damoil	C	4 hours
	Sunspray Ultra-Fine Spray Oil	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

EASTERN SPRUCE GALL ADELGID**

Adelges abietis

Page 76, 114 (Johnson & Lyon)

Page 35 (Adams & Packauskas)

GROWING SEASON

Annual cover sprays are suggested.

Frequency with which pest occurs: **ANNUAL**

Part of plant to treat: **BASE OF EXPANDING BUD**

Host Plants: Common Name	Scientific Name
spruce	<i>Picea</i>
spruce, Norway	<i>Picea abies</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph	May 01	Sep 01	twig bark	gall	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>		
nymph	Apr 15 - Apr 30	from - 20	plants bloom: boxelder, star magnolia, periwinkle, Norway maple		
nymph	May 01 - May 10	- - -	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry		
nymph	May 10 - May 20	to - 350	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle		
nymph, adult	Aug 01 - Aug 10	from - 1600	plant bloom: Pee Gee Hydrangea blooms turn pink		
nymph, adult	Aug 10 - Aug 20	to - 2100	plant fruit in color: Mountain ash, cranberry bush		
nymph, adult?	Sep 20 - Oct 10	2600 - 3000	None Offered		

Non Chemical Control

Remove highly susceptible white spruce.

Do not grow highly susceptible white spruce.

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C	12 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W	24 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C	12 hours
*clothianidin	Arena .25 G		C	12 hours
*deltamethrin	Suspend SC	BEE CAUTION	C	
horticultural oil	Damoil		C	4 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C	12 hours
	Merit 75WSP	BEE CAUTION	C	12 hours
	Xytect 2F	BEE CAUTION	C	
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

EASTERN SPRUCE GALL ADELGID**

Adelges abietis

Page 76, 114 (Johnson & Lyon)

Page 35 (Adams & Packauskas)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

Comments

Signal **Agricultural**
Word **Restricted Entry**
 Interval (REI)^

*thiamethoxam	Meridian 0.33G	BEE CAUTION	C	12 hours
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Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

EASTERN TENT CATERPILLAR**

Malacosoma americanum

Page 168 (Johnson & Lyon)

Page 26 (Adams & Packauskas)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

<u>Host Plants: Common Name</u>	<u>Scientific Name</u>
ash	<i>Fraxinus</i>
birch	<i>Betula</i>
blackgum, tupelo	<i>Nyssa sylvatica</i>
cherry, black	<i>Prunus serotina</i>
chokecherry	<i>Prunus virginiana</i>
crabapple	<i>Malus</i>
maple	<i>Acer</i>
oak	<i>Quercus</i>
peach	<i>Prunus persica</i>
plum	<i>Prunus cerasifera</i>
poplar or aspen	<i>Populus</i>
sweetgum	<i>Liquidambar</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
larva	Apr 15	May 15	foliage	defoliation	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
larva	May 01 - May 15	135 - 240	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry
larva	May 15 - May 30	240 - 380	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark

Biological Control

Podisus maculiventris (spined soldier bug - predator)

Comments

Available commercially; occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C 24 hours
	Lepitect	BEE CAUTION	C 24 hours
	Orthene T,T & O WSP	BEE CAUTION	C 24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C 12 hours
azadirachtin	Aza-Direct		C 4 hours
	AzaGuard		C 4 hours
B. thuringiensis aizawai	XenTari	Most effective against young larvae.	C 4 hours
B. thuringiensis kurstaki	Biobit HP	Most effective against young larvae.	C 4 hours
	DiPel DF	Most effective against young larvae.	C 4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W 12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

Chemical Control*Reference use only. NOT a label substitute.**Select the appropriate insecticide/miticide for the correct life stage of the target pest.*

		<u>Comments</u>	<u>Signal Word</u>	Agricultural Restricted Entry Interval (REI)^
	Talstar P Professional	BEE CAUTION	C	12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
chlorantraniliprole	Acelepryn			4 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W	24 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C	12 hours
*deltamethrin	Suspend SC	BEE CAUTION	C	
*diflubenzuron	Dimilin 25W	Effective against immatures. Bee caution.	C	12 hours
*emamectin benzoate	Tree-age	BEE CAUTION	W	
indoxacarb	Provaunt	BEE CAUTION	C	
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
malathion	Malathion 5 EC	BEE CAUTION	W	12 hours
	Malathion 8 Flowable	BEE CAUTION	C	12 hours
*permethrin	Astro	BEE CAUTION	C	12 hours
	Perm-UP 3.2EC	BEE CAUTION	C	12 hours
phosmet	Imidan 70W	BEE CAUTION	W	24 hours
pyrethrin	Pyrenone		C	12 hours
spinosad	Conserve SC	Most effective against young larvae.	C	4 hours
*thiamethoxam	Meridian 0.33G	BEE CAUTION	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

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ELDER BORER

Desmocerus palliatus

GROWING SEASON

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **STEM**

<u>Host Plants: Common Name</u>	<u>Scientific Name</u>
elder	<i>Sambucus</i>

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
larva	May 01 - Sep 30	144 - 2862	all season

Non Chemical Control

Remove and destroy badly infested branch & tree parts.

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*chlorpyrifos	Chlorpyrifos 4E AG	<i>Non-residential, BEE CAUTION</i>	W	24 hours
*clothianidin	Arena .25 G		C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

DELAYED DORMANT

Annual cover sprays are suggested.

Frequency with which pest occurs: **ANNUAL**

Part of plant to treat: **STEM, TRUNK**

Host Plants: <u>Common Name</u>	<u>Scientific Name</u>
elm	<i>Ulmus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult	Apr 01	May 01	bark	vector Dutch Elm Disease, tree death	visual inspection, pheromone traps

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult	Apr 01 - Apr 20	28 -	96 plants bloom: silver maple, Cornelian cherry, pussy willow

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

ELM BARK BEETLES

Scolytidae

Page 248 (Johnson & Lyon)

Page 16 (Adams & Packauskas)

GROWING SEASON

Annual cover sprays are suggested.

Frequency with which pest occurs: ANNUAL

Part of plant to treat: STEM, TRUNK

Host Plants: Common Name	Scientific Name
elm	<i>Ulmus</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
adult	May 01	Sep 30	bark, foliage	vector Dutch Elm Disease, tree death	visual inspection, pheromone traps

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
immature, adult	Apr 20 - Apr 30	7 - 120	plants bloom: boxelder, star magnolia, periwinkle, Norway maple
adult	Jul 20 - Jul 20	1110 - 1400	plants bloom: Abelia, golden rain tree, sourwood

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		Comments	Signal Word	Agricultural Restricted Entry Interval (REI)^
*abamectin	Mauget Abacide 2	BEE CAUTION	W	
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C	12 hours
*emamectin benzoate	Tree-age	BEE CAUTION	W	
*permethrin	Astro	BEE CAUTION	C	12 hours
	Perm-UP 3.2EC	BEE CAUTION	C	12 hours
pyrethrin	Pyrenone		C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**Part of plant to treat: **FOLIAGE**

Host Plants: <u>Common Name</u>	<u>Scientific Name</u>
elm	<i>Ulmus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
larva	May 15	Jun 15	foliage	defoliation	visual inspection
larva	Aug 01	Sep 30	foliage	defoliation	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
larva	May 20 - May 31	from - 300	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark
larva	Jun 01 - Jun 10	to - 533	plants bloom: Kousa dogwood, cranberry bush, beautybush

Chemical Control*Reference use only. NOT a label substitute.**Select the appropriate insecticide/miticide for the correct life stage of the target pest.*

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
chlorantraniliprole	Acelepryn			4 hours
*deltamethrin	Suspend SC	BEE CAUTION	C	
*imidacloprid	Merit 75WSP	BEE CAUTION	C	12 hours
indoxacarb	Provaunt	BEE CAUTION	C	
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
*permethrin	Perm-UP 3.2EC	BEE CAUTION	C	12 hours
pyrethrin	Pyrenone		C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

ELM COCKSCOMBGALL APHID***Colopha ulmicola*

Page 464 (Johnson & Lyon)

GROWING SEASON**Apply thorough treatment only when pest stage found.**Frequency with which pest occurs: **OCCASIONAL**Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
elm	<i>Ulmus</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
adult, nymph	Apr 01	Jun 30	foliage	leaf distortion (gall)	visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
adult, ?nymph	Apr 20 - Apr 30	100 - 140	plants bloom: boxelder, star magnolia, periwinkle, Norway maple
adult, ?nymph	May 01 - Jun 10	140 - 560	Remainder of season between the beginning and end phenology
adult, ?nymph	Jun 10 - Jun 20	560 - 740	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn

Biological Control*Hippodamia convergens* (lady beetle - predator)*Diaeretiella rapae* (wasp, aphid parasite)*Chrysoperla* sp. (green lacewing - predator)**Comments**

Available commercially; occurs naturally

occurs naturally

Available commercially; occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

Comments

Signal	Agricultural Restricted Entry
Word	Interval (REI)^

*abamectin	Mauget Abacide 2	BEE CAUTION	W	
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Lepitect	BEE CAUTION	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
	TriStar 8.5 SL	BEE CAUTION	C	12 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours
chlorantraniliprole	Acelepryn			4 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W	24 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C	12 hours
*clothianidin	Arena 50 WDG		C	12 hours
*deltamethrin	Suspend SC	BEE CAUTION	C	
*dinotefuran	Safari 20 SG	BEE CAUTION	C	12 hours
*fenpropathrin	Tame 2.4EC	BEE CAUTION	W	24 hours
flonicamid	Aria		C	12 hours
horticultural oil	Damoil		C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

Chemical Control*Reference use only. NOT a label substitute.**Select the appropriate insecticide/miticide for the correct life stage of the target pest.*

<u>Chemical Control</u>		<u>Comments</u>	<u>Signal Word</u>	Agricultural Restricted Entry Interval (REI)^
*imidacloprid	Mallet 75 WSP	<i>BEE CAUTION</i>	C	12 hours
	Merit 75WSP	<i>BEE CAUTION</i>	C	12 hours
	Xytect 2F	<i>BEE CAUTION</i>	C	
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
malathion	Malathion 5 EC	<i>BEE CAUTION</i>	W	12 hours
	Malathion 8 Flowable	<i>BEE CAUTION</i>	C	12 hours
pymetrozine	Endeavor		C	12 hours
pyrethrin	PyGanic	<i>OMRI listed</i>	C	12 hours
	Pyrenone		C	12 hours
*thiamethoxam	Meridian 0.33G	<i>BEE CAUTION</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

restricted use pesticide***ESA approved common name****^for agricultural applications only.**

ELM FLEA BEETLE***Altica carinata*

Page 228 (Johnson & Lyon)

GROWING SEASON**Apply thorough treatment only when pest stage found.**Frequency with which pest occurs: **OCCASIONAL**Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
elm	<i>Ulmus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult	May 01	Jun 30	foliage	defoliation	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult	May 01 - May 10	144 - 228	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry
adult	May 10 - May 20	228 - 311	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle
adult	May 20 - May 31	311 - 423	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark
adult	Jun 01 - Jun 10	437 - 563	plants bloom: Kousa dogwood, cranberry bush, beautybush

Chemical Control**Comments**

Signal **Agricultural**
Word **Restricted Entry**
Interval (REI)^

*Reference use only. NOT a label substitute.**Select the appropriate insecticide/miticide for the correct life stage of the target pest.*

azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C	12 hours
*deltamethrin	Suspend SC	BEE CAUTION	C	
horticultural oil	Damoil		C	4 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede	Only effective against immatures.	W	12 hours
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
pyrethrin	Pyrenone		C	12 hours
*thiamethoxam	Meridian 0.33G	BEE CAUTION	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

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GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
elm	<i>Ulmus</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
adult, nymph	Jun 01	Aug 01	foliage	distortion	visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
nymph, adult	Jul 10 - Jul 20	710 - 1500	plants bloom: Abelia, golden rain tree, sourwood
nymph, adult	Jul 20 - Jul 31	1500 - 1673	plants bloom: butterfly bush, Clethra alnifolia, false spirea

Biological Control

	Comments
<i>Orius sp.</i> (predator)	Available commercially; occurs naturally
<i>Hippodamia convergens</i> (lady beetle - predator)	Available commercially; occurs naturally
<i>Diaeretiella rapae</i> (wasp, aphid parasite)	occurs naturally
<i>Deraeocoris nebulosus</i> (mirid bug - predator)	occurs naturally
<i>Chrysoperla sp.</i> (green lacewing - predator)	Available commercially; occurs naturally
<i>Aphidoletes aphidimyza</i> (midge, aphid predator)	Available commercially; occurs naturally
<i>Aphidius matricariae</i> (wasp, aphid parasite)	Available commercially; occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	Comments	Signal Word	Agricultural Restricted Entry Interval (REI)^
*abamectin	Mauget Abacide 2	BEE CAUTION	W
acephate	Acephate 97 WDG	BEE CAUTION	C 24 hours
	Lepitect	BEE CAUTION	C 24 hours
	Orthene T,T & O WSP	BEE CAUTION	C 24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C 12 hours
azadirachtin	Aza-Direct		C 4 hours
	AzaGuard		C 4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W 12 hours
	Talstar P Professional	BEE CAUTION	C 12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C 12 hours
	Sevin SL	BEE CAUTION	C 12 hours
chlorantraniliprole	Acelepryn		4 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W 24 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C 12 hours
*clothianidin	Arena 50 WDG		C 12 hours
*deltamethrin	Suspend SC	BEE CAUTION	C

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

ELM LEAF APHID**

Tinocallis ulmifolii

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*dinotefuran	Safari 20 SG	<i>BEE CAUTION</i>	C	12 hours
*fenpropathrin	Tame 2.4EC	<i>BEE CAUTION</i>	W	24 hours
flonicamid	Aria		C	12 hours
horticultural oil	Damoil		C	4 hours
*imidacloprid	Mallet 75 WSP	<i>BEE CAUTION</i>	C	12 hours
	Merit 75WSP	<i>BEE CAUTION</i>	C	12 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
malathion	Malathion 5 EC	<i>BEE CAUTION</i>	W	12 hours
	Malathion 8 Flowable	<i>BEE CAUTION</i>	C	12 hours
pymetrozine	Endeavor		C	12 hours
pyrethrin	Pyrenone		C	12 hours
*thiamethoxam	Meridian 0.33G	<i>BEE CAUTION</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

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GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
elm	<i>Ulmus</i>
zelkova, Japanese	<i>Zelkova serrata</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult	May 15	Sep 30	foliage	defoliation	visual inspection
larva	Jun 01	Aug 01	foliage	defoliation	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult	May 20 - May 31	from - 363	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark
adult, egg	Jun 01 - Jun 10	- - -	plants bloom: Kousa dogwood, cranberry bush, beautybush
egg, larva	Jun 10 - Jun 20	- - -	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn
larva	Jun 20 - Jun 30	to - 912	plants bloom: Rhododendron maximum, Spiraea bumalda, Philadelphus

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*abamectin	Mauget Abacide 2	<i>BEE CAUTION</i>	W	
acephate	Acephate 97 WDG	<i>BEE CAUTION</i>	C	24 hours
	Lepitect	<i>BEE CAUTION</i>	C	24 hours
	Orthene T,T & O WSP	<i>BEE CAUTION</i>	C	24 hours
	Aza-Direct		C	4 hours
azadirachtin	AzaGuard		C	4 hours
	Onyx Pro	<i>BEE CAUTION</i>	W	12 hours
*bifenthrin	Talstar P Professional	<i>BEE CAUTION</i>	C	12 hours
	Carbaryl 4L	<i>BEE CAUTION</i>	C	12 hours
carbaryl	Sevin SL	<i>BEE CAUTION</i>	C	12 hours
	Chlorpyrifos 4E AG	<i>Non-residential, BEE CAUTION</i>	W	24 hours
*chlorpyrifos				
*clothianidin + bifenthrin	Aloft GC G	<i>BEE CAUTION</i>	C	12 hours
*clothianidin	Arena .25 G		C	12 hours
*deltamethrin	Suspend SC	<i>BEE CAUTION</i>	C	
*dinotefuran	Safari 20 SG	<i>BEE CAUTION</i>	C	12 hours
horticultural oil	Damoil		C	4 hours
*imidacloprid	Mallet 75 WSP	<i>BEE CAUTION</i>	C	12 hours
	Merit 75WSP	<i>BEE CAUTION</i>	C	12 hours
	Xytect 2F	<i>BEE CAUTION</i>	C	

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

ELM LEAF BEETLE**

Pyrrhalta luteola

Page 222 (Johnson & Lyon)

Page 23 (Adams & Packauskas)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal</u>	<u>Agricultural</u>
			<u>Word</u>	<u>Restricted Entry</u>
				<u>Interval (REI)^</u>
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede	<i>Only effective against immatures.</i>	W	12 hours
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
phosmet	Imidan 70W	<i>BEE CAUTION</i>	W	24 hours
pyrethrin	Pyrenone		C	12 hours
spinosad	Conserve SC	<i>Most effective against young larvae.</i>	C	4 hours
*thiamethoxam	Meridian 0.33G	<i>BEE CAUTION</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

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GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
elm	<i>Ulmus</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
adult (sawfly)	May 01	Jun 01	foliage		visual inspection, sticky cards
larva	Jun 01	Jun 15	foliage	discoloration (mining)	visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
adult	May 10 - May 20	from - 263	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle
adult	May 20 - May 31	- - -	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark
adult, larva	Jun 01 - Jun 10	to - 530	plants bloom: Kousa dogwood, cranberry bush, beautybush

Chemical Control**Comments**

Signal
Word **Agricultural**
Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

*abamectin	Mauget Abacide 2	<i>BEE CAUTION</i>	W	
acephate	Acephate 97 WDG	<i>BEE CAUTION</i>	C	24 hours
	Lepitect	<i>BEE CAUTION</i>	C	24 hours
	Orthene T,T & O WSP	<i>BEE CAUTION</i>	C	24 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
*bifenthrin	Onyx Pro	<i>BEE CAUTION</i>	W	12 hours
	Talstar P Professional	<i>BEE CAUTION</i>	C	12 hours
*clothianidin	Arena .25 G		C	12 hours
*diflubenzuron	Dimilin 25W	<i>Effective against immatures. Bee caution.</i>	C	12 hours
*dinotefuran	Safari 20 SG	<i>BEE CAUTION</i>	C	12 hours
*emamectin benzoate	Tree-age	<i>BEE CAUTION</i>	W	
*imidacloprid	Mallet 75 WSP	<i>BEE CAUTION</i>	C	12 hours
	Merit 75WSP	<i>BEE CAUTION</i>	C	12 hours
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
*permethrin	Astro	<i>BEE CAUTION</i>	C	12 hours
	Perm-UP 3.2EC	<i>BEE CAUTION</i>	C	12 hours
spinosad	Conserve SC	<i>Most effective against young larvae.</i>	C	4 hours
*thiamethoxam	Meridian 0.33G	<i>BEE CAUTION</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

ELONGATE HEMLOCK SCALE**

Fiorinia externa

Page 104 (Johnson & Lyon)

Page 44 (Adams & Packauskas)

DORMANT SEASON

Annual cover sprays are suggested.

Frequency with which pest occurs: **ANNUAL**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
fir	<i>Abies</i>
hemlock	<i>Tsuga</i>
spruce	<i>Picea</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
egg	Mar 01	Apr 15	foliage		visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult	Mar 01 - Apr 10	0 - 41	None Offered

Chemical Control

Comments

<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
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Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

horticultural oil	Damoil	C	4 hours
	Sunspray Ultra-Fine SprayOil	C	4 hours

Additional information on biology and control

This hard scale is often seen in conjunction with the circular hemlock scale. Elongate hemlock scale normally has only one generation per year in New England, but can have two in the Mid-Atlantic region. Fertile females and eggs overwinter. Crawlers are present throughout the spring and summer due to overlapping life stages. Crawlers settle under the thin waxy cuticle of young needles and begin to develop, females through three stages, males five. The males ultimately emerge as tiny 2-winged insects that may be mistaken for wasp parasitoids as they move around mature brown female scales. The white waxy male cover may sometimes be mistaken for hemlock woolly adelgid activity.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Annual cover sprays are suggested.

Frequency with which pest occurs: **ANNUAL**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
fir	<i>Abies</i>
hemlock	<i>Tsuga</i>
spruce	<i>Picea</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
adult	May 01	Sep 30	foliage	discoloration, needle drop	visual inspection
nymph (crawler)	May 15	Jun 30	foliage	discoloration, needle drop	visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
crawler	May 20 - May 31	from - 360	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark
crawler, nymph	Jun 01 - Jun 10	- -	plants bloom: Kousa dogwood, cranberry bush, beautybush
crawler, nymph	Jun 10 - Jun 20	to - 700	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn
crawler	Jun 20 - Jun 30	700 - 970	plants bloom: Rhododendron maximum, Spiraea bumalda, Philadelphus

Biological Control

Aspidiotiphagus citrinus

Lindorus lophanthae (lady beetle - scale predator)

Chilocorus stigma (lady beetle - predator)

Comments

naturally occurring

Available commercially

occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	<i>BEE CAUTION</i>	C	24 hours
	Lepitect	<i>Effective against immatures. Bee caution.</i>	C	24 hours
	Orthene T,T & O WSP	<i>BEE CAUTION</i>	C	24 hours
acetamiprid	TriStar 8.5 SL	<i>BEE CAUTION</i>	C	12 hours
*bifenthrin	Onyx Pro	<i>Effective against immatures. Bee caution.</i>	W	12 hours
buprofezin	Talus 70DF	<i>Only effective against immatures.</i>	W	12 hours
carbaryl	Carbaryl 4L	<i>Effective against immatures. Bee caution.</i>	C	12 hours
	Sevin SL	<i>BEE CAUTION</i>	C	12 hours
*deltamethrin	Suspend SC	<i>Effective against immatures. Bee caution.</i>	C	
*dinotefuran	Safari 20 SG	<i>BEE CAUTION</i>	C	12 hours
flonicamid	Aria		C	12 hours
horticultural oil	Damoil		C	4 hours
	Sunspray Ultra-Fine SprayOil		C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

ELONGATE HEMLOCK SCALE**

Fiorinia externa

Page 104 (Johnson & Lyon)

Page 44 (Adams & Packauskas)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede	<i>Only effective against immatures.</i>	W	12 hours
lambda-cyhalothrin	Demand CS	<i>Effective against immatures. Bee caution.</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>Effective against immatures. Bee caution.</i>	C	24 hours
malathion	Malathion 5 EC	<i>Effective against immatures. Bee caution.</i>	W	12 hours
	Malathion 8 Flowable	<i>Effective against immatures. Bee caution.</i>	C	12 hours
pyrethrin	PyGanic	<i>OMRI listed, effective against immatures</i>	C	12 hours
pyriproxyfen	Distance IGR	<i>Only effective against immatures.</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **RARE**Part of plant to treat: **TRUNK, STEM, FOLIAGE**

Host Plants: Common Name	Scientific Name
ash	<i>Fraxinus</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
adult (beetle)	May 30	Aug 30	foliage	notched foliage	visual inspection
larva in stems	Sep 01	May 30	stem, trunk	borer tunnels	visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
adult (beetle)	Jun 01 - Jul 30	410 - 1660	Adults emerge when black locust begins blooming.

Biological Control*Tetrastichus planipennisi* (larval parasite)*Spathius agrili* (larval parasite)*Oobius agrili* (egg parasite)**Comments***being researched and released under specific conditions**being researched and released under specific conditions**being researched and released under specific conditions***Chemical Control**

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
			<u>Word</u>	
*bifenthrin	Talstar P Professional	BEE CAUTION	C	12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W	24 hours
*dinotefuran	Safari 20 SG	BEE CAUTION	C	12 hours
*emamectin benzoate	Tree-age	BEE CAUTION	W	
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C	12 hours
*permethrin	Perm-UP 3.2EC	BEE CAUTION	C	12 hours

Additional information on biology and control

This beetle is small, approximately ½” long, and a shiny metallic green when alive. Adults begin to emerge in late spring, around 450 degree days or when black locust begins to bloom. Exit holes are 1/16”, distinctively flat on one side and D-shaped. Adults feed on ash foliage, creating notches in leaf margins. Tiny flat eggs are laid in the cracks of bark. Emerging larvae tunnel underneath the bark, feeding on conducting tissue disrupting sugar flow to the roots and water to the foliage. The larvae feed in the conducting tissue for their entire development, creating distinctive serpentine galleries. The larvae are white, flat, segmented, and wormlike, growing to about ¾-1” in length. Larvae overwinter, and then pupate in the early spring. Heavy woodpecker activity on a stressed ash tree may be an indicator of an infestation of EAB larvae. As of January 2019, EAB has been found in all Connecticut counties and 135 of our 169 towns. Dr. Claire Rutledge, CAES, is releasing biological control organisms to combat this insect. When deciding whether or not to treat, realize that ash in Connecticut may be infected with ash yellows disease and therefore not be a good candidate for insecticide applications. Refer to Dr. Rich Cowles’ fact sheet “Guidelines for Preserving Trees in the Presence of the Emerald Ash Borer.”

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

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EUONYMUS SCALE**

Unaspis euonymi

Page 388 (Johnson & Lyon)

Page 44 (Adams & Packauskas)

DORMANT SEASON

Annual cover sprays are suggested.

Frequency with which pest occurs: **ANNUAL**

Part of plant to treat: **WHOLE PLANT**

Host Plants: Common Name	Scientific Name
Daphne	<i>Daphne</i>
Euonymus	<i>Euonymus</i>
honeysuckle	<i>Lonicera</i>
lilac	<i>Syringa</i>
privet	<i>Ligustrum</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult	Mar 01	Apr 15	bark, foliage	decline	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult	Mar 01 - Apr 10	0 - 41	None Offered

Chemical Control

Comments

Signal **Agricultural**
Word **Restricted Entry**
Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

horticultural oil	Damoil	C	4 hours
	Sunspray Ultra-Fine Spray Oil	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

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GROWING SEASON

Annual cover sprays are suggested.

Frequency with which pest occurs: **ANNUAL**

Part of plant to treat: **WHOLE PLANT**

Host Plants: Common Name	Scientific Name
Daphne	<i>Daphne</i>
Euonymus	<i>Euonymus</i>
honeysuckle	<i>Lonicera</i>
lilac	<i>Syringa</i>
privet	<i>Ligustrum</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph (crawler)	Jun 01	Aug 01	bark, foliage	decline	visual inspection
adult	Aug 01	Sep 30	bark, foliage	decline	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult, egg	May 01 - May 10	70 - 120	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry
egg, crawler	Jun 01 - Jun 15	533 - 820	plants bloom: Kousa dogwood, cranberry bush, beautybush
crawler	Jul 10 - Jul 20	1150 - 1388	plants bloom: Abelia, golden rain tree, sourwood

Biological Control

Lindorus lophanthae (lady beetle - scale predator)

Chrysoperla sp. (green lacewing - predator)

Chilocorus stigma (lady beetle - predator)

Comments

Available commercially

Available commercially; occurs naturally

occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Lepitect	Effective against immatures. Bee caution.	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C	12 hours
buprofezin	Talus 70DF	Only effective against immatures.	W	12 hours
carbaryl	Carbaryl 4L	Effective against immatures. Bee caution.	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W	24 hours
*deltamethrin	Suspend SC	Effective against immatures. Bee caution.	C	
*dinotefuran	Safari 20 SG	BEE CAUTION	C	12 hours
flonicamid	Aria		C	12 hours
horticultural oil	Damoil		C	4 hours
	Sunspray Ultra-Fine SprayOil		C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

EUONYMUS SCALE**

Unaspis euonymi

Page 388 (Johnson & Lyon)

Page 44 (Adams & Packauskas)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal</u>	<u>Agricultural</u>
			<u>Word</u>	<u>Restricted Entry</u>
				<u>Interval (REI)^</u>
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede	<i>Only effective against immatures.</i>	W	12 hours
lambda-cyhalothrin	Demand CS	<i>Effective against immatures. Bee caution.</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>Effective against immatures. Bee caution.</i>	C	24 hours
malathion	Malathion 5 EC	<i>Effective against immatures. Bee caution.</i>	W	12 hours
	Malathion 8 Flowable	<i>Effective against immatures. Bee caution.</i>	C	12 hours
pyrethrin	PyGanic	<i>OMRI listed, effective against immatures</i>	C	12 hours
pyriproxyfen	Distance IGR	<i>Only effective against immatures.</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

DORMANT SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **STEM**

Host Plants: Common Name	Scientific Name
elm	<i>Ulmus</i>
filbert or hazelnut	<i>Corylus</i>
maple	<i>Acer</i>
oak	<i>Quercus</i>
poplar or aspen	<i>Populus</i>
redbud	<i>Cercis canadensis</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph	Mar 01	Apr 15	twig bark	dieback	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult	Mar 01 - Apr 20	0 - 41	None Offered

Chemical Control

Comments

Signal Agricultural
Word Restricted Entry
 Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

horticultural oil	Damoil	C	4 hours
	Sunspray Ultra-Fine SprayOil	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

EUROPEAN FRUIT LECANIUM**

Parthenolecanium corni

Page 98, 354, 364 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
elm	<i>Ulmus</i>
filbert or hazelnut	<i>Corylus</i>
maple	<i>Acer</i>
oak	<i>Quercus</i>
poplar or aspen	<i>Populus</i>
redbud	<i>Cercis canadensis</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph (crawler)	Jul 01	Aug 01	twig bark, foliage	dieback	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
immature	May 01 - May 10	145 - 180	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry
crawler	Jul 01 - Jul 10	from - 1266	plants bloom: Ceanothus americanus, Clematis jackmanii, Tilia cordata
crawler	Jul 10 - Jul 20	- - -	plants bloom: Abelia, golden rain tree, sourwood
crawler	Jul 20 - Jul 31	to - 1645	plants bloom: butterfly bush, Clethra alnifolia, false spirea

Biological Control

Lindorus lophanthae (lady beetle - scale predator)

Cryptolaemus montrouzieri (lady beetle predator)

Chrysoperla sp. (green lacewing - predator)

Chilocorus stigma (lady beetle - predator)

Comments

Available commercially

Available commercially; occurs naturally

Available commercially; occurs naturally

occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C 24 hours
	Orthene T,T & O WSP	BEE CAUTION	C 24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C 12 hours
*bifenthrin	Talstar P Professional	Effective against immatures. Bee caution.	C 12 hours
carbaryl	Carbaryl 4L	Effective against immatures. Bee caution.	C 12 hours
	Sevin SL	BEE CAUTION	C 12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W 24 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C 12 hours
*clothianidin	Arena .25 G		C 12 hours
*deltamethrin	Suspend SC	Effective against immatures. Bee caution.	C

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

Comments

**Signal
Word** **Agricultural
Restricted Entry
Interval (REI)^**

*dinotefuran	Safari 20 SG	BEE CAUTION	C	12 hours
horticultural oil	Damoil		C	4 hours
	Sunspray Ultra-Fine Spray Oil		C	4 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C	12 hours
	Merit 75WSP	BEE CAUTION	C	12 hours
	Xytect 2F	BEE CAUTION	C	
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede	Only effective against immatures.	W	12 hours
lambda-cyhalothrin	Demand CS	Effective against immatures. Bee caution.	C	
*lambda-cyhalothrin	Scimitar GC	Effective against immatures. Bee caution.	C	24 hours
malathion	Malathion 5 EC	Effective against immatures. Bee caution.	W	12 hours
	Malathion 8 Flowable	Effective against immatures. Bee caution.	C	12 hours
pyriproxyfen	Distance IGR	Only effective against immatures.	C	12 hours
*thiamethoxam	Meridian 0.33G	BEE CAUTION	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

EUROPEAN PINE SAWFLY**

Neodiprion sertifer

Page 16, 18 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
pine	<i>Pinus</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
larva	Apr 15	May 15	foliage	defoliation	visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
larva	Apr 20 - Apr 30	from - 78	plants bloom: boxelder, star magnolia, periwinkle, Norway maple
larva	May 01 - May 20	- -	Remainder of season between the beginning and end phenology
larva	May 20 - May 31	to - 420	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*abamectin	Mauget Abacide 2	BEE CAUTION	W	
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Lepitect	BEE CAUTION	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
	TriStar 8.5 SL	BEE CAUTION	C	12 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
*bifenthrin	Talstar P Professional	BEE CAUTION	C	12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W	24 hours
*deltamethrin	Suspend SC	BEE CAUTION	C	
*diflubenzuron	Dimilin 25W	Effective against immatures. Bee caution.	C	12 hours
*dinotefuran	Safari 20 SG	Effective against immatures. Bee caution.	C	12 hours
*emamectin benzoate	Tree-age	BEE CAUTION	W	
horticultural oil	Damoil		C	4 hours
	Sunspray Ultra-Fine Spray Oil		C	4 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C	12 hours
	Merit 75WSP	BEE CAUTION	C	12 hours
	Xytect 2F	BEE CAUTION	C	
indoxacarb	Provaunt	BEE CAUTION	C	
insecticidal soap	Des-X Insecticidal Soap Concentrate	Only effective against immatures.	W	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

Comments

**Signal
Word**

**Agricultural
Restricted Entry
Interval (REI)^**

	M-Pede	<i>Only effective against immatures.</i>	W	12 hours
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
*permethrin	Astro	<i>BEE CAUTION</i>	C	12 hours
	Perm-UP 3.2EC	<i>BEE CAUTION</i>	C	12 hours
spinosad	Conserve SC	<i>Most effective against young larvae.</i>	C	4 hours
*thiamethoxam	Meridian 0.33G	<i>BEE CAUTION</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

EUROPEAN PINE SHOOT MOTH**

Rhyacionia buoliana

Page 48, 50 (Johnson & Lyon)

Page 17 (Adams & Packauskas)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **BUD**

Host Plants: <u>Common Name</u>	<u>Scientific Name</u>
pine	<i>Pinus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult	Apr 15	Jul 15	foliage		pheromone traps
larva	Apr 20	May 01	foliage	discoloration (mining)	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
larva	Apr 20 - Apr 30	34 - 121	plant bloom: Pee Gee Hydrangea blooms turn pink
adult?, larva	Jun 01 - Jun 10	437 - 563	plants bloom: Kousa dogwood, cranberry bush, beautybush
adult?, larva	Jun 10 - Jun 20	563 - 737	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn

Chemical Control

Comments

Signal **Agricultural**
Word **Restricted Entry**
Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

*abamectin	Mauget Abacide 2	<i>BEE CAUTION</i>	W	
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
carbaryl	Carbaryl 4L	<i>BEE CAUTION</i>	C	12 hours
	Sevin SL	<i>BEE CAUTION</i>	C	12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	<i>Non-residential, BEE CAUTION</i>	W	24 hours
*clothianidin + bifenthrin	Aloft GC G	<i>BEE CAUTION</i>	C	12 hours
*deltamethrin	Suspend SC	<i>BEE CAUTION</i>	C	
*diflubenzuron	Dimilin 25W	<i>Effective against immatures. Bee caution.</i>	C	12 hours
*imidacloprid	Merit 75WSP	<i>BEE CAUTION</i>	C	12 hours
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
malathion	Malathion 5 EC	<i>BEE CAUTION</i>	W	12 hours
	Malathion 8 Flowable	<i>BEE CAUTION</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

DORMANT SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **STEM**

<u>Host Plants: Common Name</u>	<u>Scientific Name</u>
almond, dwarf flowering	<i>Prunus glandulosa</i>
cherry, black	<i>Prunus serotina</i>
elm	<i>Ulmus</i>
mountain ash, European	<i>Sorbus aucuparia</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
egg	Mar 01	Apr 15	foliage		visual inspection (magnification)

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
egg	Mar 01 - Apr 10	0 - 41	None Offered

Chemical Control

Comments

Signal Agricultural Restricted Entry
Word Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

horticultural oil	Damoil	C	4 hours
	Sunspray Ultra-Fine Spray Oil	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

EUROPEAN RED MITE**

Panonychus ulmi

Page 472, 474 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
almond, dwarf flowering	<i>Prunus glandulosa</i>
cherry, black	<i>Prunus serotina</i>
elm	<i>Ulmus</i>
mountain ash, European	<i>Sorbus aucuparia</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
immature	May 01	Sep 30	foliage	discoloration (stippling)	visual inspection (magnification), plant tapping
adult	May 15	Sep 30	foliage	discoloration (stippling)	visual inspection (magnification), plant tapping

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
immature, adult	May 10 - May 20	from -	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle
egg, immature	May 20 - May 31	- -	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark
immature, adult	Jun 01 - Jun 10	to - 440	plants bloom: Kousa dogwood, cranberry bush, beautybush
immature, adult	Jun 10 - Jun 20	440 - 710	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn
immature, adult	Jun 20 - Jun 30	710 - 810	plants bloom: Rhododendron maximum, Spiraea bumalda, Philadelphus

Biological Control

Stethorus punctillum (lady beetle - predator)

Phytoseiulus persimilis (predatory mite)

Orius sp. (predator)

Neoseiulus cucumeris (predatory mite)

Comments

Available commercially; occurs naturally

Available commercially; occurs naturally

Available commercially; occurs naturally

Available commercially; occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

Comments

Signal Word	Agricultural Restricted Entry Interval (REI)^
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abamectin	Avid 0.15 EC		W	12 hours
bifenazate	Floramite SC	BEE CAUTION	C	12 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
etoxazole	Tetrasan 5 WDG		C	12 hours
fenazaquin	Magus	BEE CAUTION	W	12 hours
*fenpropathrin	Tame 2.4EC	BEE CAUTION	W	24 hours
fenpyroximate	Akari 5SC		W	12 hours
hexythiazox	Hexygon DF	most effective against immature stages	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

Comments

Signal **Agricultural**
Word **Restricted Entry**
 Interval (REI)^

horticultural oil	Damoil		C	4 hours
	Sunspray Ultra-Fine Spray Oil		C	4 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
malathion	Malathion 5 EC	<i>BEE CAUTION</i>	W	12 hours
	Malathion 8 Flowable	<i>BEE CAUTION</i>	C	12 hours
spiromesifen	Forbid 4F	<i>most effective against immature stages</i>	C	

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

***restricted use pesticide**

****ESA approved common name**

^for agricultural applications only.

FALL WEBWORM**

Hyphantria cunea

Page 160, 166 (Johnson & Lyon)

Page 27 (Adams & Packauskas)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
almond, dwarf flowering	<i>Prunus glandulosa</i>
apple	<i>Malus</i>
birch	<i>Betula</i>
blackgum, tupelo	<i>Nyssa sylvatica</i>
elm	<i>Ulmus</i>
hickory	<i>Carya</i>
holly	<i>Ilex</i>
maple	<i>Acer</i>
oak	<i>Quercus</i>
Rhododendron	<i>Rhododendron</i>
viburnum	<i>Viburnum</i>
walnut	<i>Juglans</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
larva	May 15	Sep 30	foliage	defoliation, webbing	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
larva	Jun 15 - Jul 20	from - 1266	plants bloom: Rhododendron maximum, Spiraea bumalda, Philadelphus
larva	Jul 20 - Aug 10	- -	- Remainder of season between the beginning and end phenology
larva	Aug 10 - Aug 20	to - 1917	plant fruit in color: Mountain ash, cranberry bush
larva	Aug 20 - Sep 30	1917 - 2850	rest of season

Biological Control

Podisus maculiventris (spined soldier bug - predator)

Comments

Available commercially; occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C	12 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
B. thuringiensis aizawai	XenTari	Most effective against young larvae.	C	4 hours
B. thuringiensis kurstaki	Biobit HP	Most effective against young larvae.	C	4 hours
	DiPel DF	Most effective against young larvae.	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
chlorantraniliprole	Acelepryn			4 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W	24 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C	12 hours
*deltamethrin	Suspend SC	BEE CAUTION	C	
*diflubenzuron	Dimilin 25W	Effective against immatures. Bee caution.	C	12 hours
*emamectin benzoate	Tree-age	BEE CAUTION	W	
indoxacarb	Provaunt	BEE CAUTION	C	
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
*permethrin	Astro	BEE CAUTION	C	12 hours
	Perm-UP 3.2EC	BEE CAUTION	C	12 hours
pyrethrin	Pyrenone		C	12 hours
spinosad	Conserve SC	Most effective against young larvae.	C	4 hours

Additional information on biology and control

The first generation of this pest is usually missed because populations are small.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

FALSE MEYER SCALE

Nuculaspis pseudomeyeri

DORMANT SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **UNCOMMON**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
arborvitae	<i>Thuja</i>
cedar	<i>Cedrus</i>
falsecypress	<i>Chamaecyparis</i>
Juniper	<i>Juniperus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph	Mar 01	Apr 01	foliage	discoloration, twig dieback	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph	Mar 15 - Apr 10	5 - 30	None Offered

Chemical Control

<u>Chemical Control</u>	<u>Comments</u>	<u>Signal</u>	<u>Agricultural Restricted Entry</u>
		<u>Word</u>	<u>Interval (REI)^</u>
horticultural oil	Damoil <i>Reference use only. NOT a label substitute.</i> <i>Select the appropriate insecticide/miticide for the correct life stage of the target pest.</i>	C	4 hours
	<i>WARNING: use of oil on blue colored conifers will cause color to change.</i>		

Additional information on biology and control

This scale is known in Japan, Korea, New York, Pennsylvania and Washington, DC. Not much has been published on its biology. Two generations are possible in Connecticut. Stimmel believes it overwinters as second instar nymphs. First generation crawlers occur in May. Second generation crawlers occur in late July - August. (Stimmel, J. *Nuculaspis pseudomeyeri* (Kuwana), a Scale Insect on Evergreen Conifers, Regulatory Horticulture, PA Dept. of Agriculture, Volume 28, 2002.)

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **UNCOMMON**Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
arborvitae	<i>Thuja</i>
cedar	<i>Cedrus</i>
falsecypress	<i>Chamaecyparis</i>
Juniper	<i>Juniperus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
crawler	Apr 15	Jun 15	foliage	discoloration, twig dieback	visual inspection
crawler	Jul 10	Aug 30	foliage	discoloration, twig dieback	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
crawler	Apr 15 - May 30	44 - 380	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark
crawler	Jul 15 - Aug 30	1272 - 2358	plants bloom: butterfly bush, Clethra alnifolia, false spirea

Chemical Control**Comments**

Signal **Agricultural**
Word **Restricted Entry**
 Interval (REI)^

*Reference use only. NOT a label substitute.**Select the appropriate insecticide/miticide for the correct life stage of the target pest.*

acephate	Acephate 97 WDG	<i>BEE CAUTION</i>	C	24 hours
	Lepitect	<i>Effective against immatures. Bee caution.</i>	C	24 hours
acetamiprid	TriStar 8.5 SL	<i>BEE CAUTION</i>	C	12 hours
buprofezin	Talus 70DF	<i>Only effective against immatures.</i>	W	12 hours
*dinotefuran	Safari 20 SG	<i>BEE CAUTION</i>	C	12 hours
flonicamid	Aria		C	12 hours
insecticidal soap	M-Pede	<i>Only effective against immatures.</i>	W	12 hours
pyriproxyfen	Distance IGR	<i>Only effective against immatures.</i>	C	12 hours

Additional information on biology and control

See Dormant Season page for additional information on pest biology.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

FLETCHER SCALE**

Parthenolecanium fletcheri

Page 98, 364 (Johnson & Lyon)

Page 46 (Adams & Packauskas)

DORMANT SEASON

Annual cover sprays are suggested.

Frequency with which pest occurs: ANNUAL

Part of plant to treat: STEM, FOLIAGE

Host Plants: Common Name	Scientific Name
arborvitae	<i>Thuja</i>
baldcypress	<i>Taxodium distichum</i>
yew	<i>Taxus</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
nymph	Mar 01	Apr 15	bark	decline	visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
nymph	Mar 01 - Apr 10	0 - 41	None Offered

Chemical Control

Comments

Signal Agricultural
Word Restricted Entry
Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

horticultural oil	Damoil	C	4 hours
	Sunspray Ultra-Fine SprayOil	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Annual cover sprays are suggested.

Frequency with which pest occurs: **ANNUAL**

Part of plant to treat: **STEM, FOLIAGE**

Host Plants: Common Name	Scientific Name
arborvitae	<i>Thuja</i>
baldcypress	<i>Taxodium distichum</i>
yew	<i>Taxus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult	May 01	Jun 15	bark	decline	visual inspection
nymph (crawler)	Jun 01	Sep 30	bark	decline	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph	May 01 - May 10	60 - 148	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry
crawler	Jun 01 - Jul 20	450 - 1388	Remainder of season between the beginning and end phenology
nymph	Sep 01 - Sep 10	2515 - 2800	plant fruit in color: sweet autumn clematis, Polygonum aubertii

Biological Control

Lindorus lophanthae (lady beetle - scale predator)
Cryptolaemus montrouzieri (lady beetle predator)
Chrysoperla sp. (green lacewing - predator)
Chilocorus stigma (lady beetle - predator)

Comments

Available commercially
 Available commercially; occurs naturally
 Available commercially; occurs naturally
 occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Lepitect	Effective against immatures. Bee caution.	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C	12 hours
*bifenthrin	Talstar P Professional	Effective against immatures. Bee caution.	C	12 hours
buprofezin	Talus 70DF	Only effective against immatures.	W	12 hours
carbaryl	Carbaryl 4L	Effective against immatures. Bee caution.	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W	24 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C	12 hours
*clothianidin	Arena .25 G		C	12 hours
*deltamethrin	Suspend SC	Effective against immatures. Bee caution.	C	
*dinotefuran	Safari 20 SG	BEE CAUTION	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

FLETCHER SCALE**

Parthenolecanium fletcheri

Page 98, 364 (Johnson & Lyon)

Page 46 (Adams & Packauskas)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
flonicamid	Aria		C	12 hours
horticultural oil	Damoil		C	4 hours
	Sunspray Ultra-Fine Spray Oil		C	4 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C	12 hours
	Merit 75WSP	BEE CAUTION	C	12 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede	Only effective against immatures.	W	12 hours
lambda-cyhalothrin	Demand CS	Effective against immatures. Bee caution.	C	
*lambda-cyhalothrin	Scimitar GC	Effective against immatures. Bee caution.	C	24 hours
malathion	Malathion 5 EC	Effective against immatures. Bee caution.	W	12 hours
	Malathion 8 Flowable	Effective against immatures. Bee caution.	C	12 hours
pyrethrin	PyGanic	OMRI listed, effective against immatures	C	12 hours
pyriproxyfen	Distance IGR	Only effective against immatures.	C	12 hours
*thiamethoxam	Meridian 0.33G	BEE CAUTION	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
blackgum, tupelo	<i>Nyssa sylvatica</i>
cherry, black	<i>Prunus serotina</i>
cherry, flowering	<i>Prunus</i>
elm	<i>Ulmus</i>
hawthorn	<i>Crataegus</i>
maple	<i>Acer</i>
oak	<i>Quercus</i>
sweetgum	<i>Liquidambar</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
larva	May 01	Jun 01	foliage	defoliation	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
larva	May 10 - May 20	from - 192	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle
larva	May 20 - May 31	to - 400	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark

Biological Control

Podisus maculiventris (spined soldier bug - predator)

Comments

Available commercially; occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C 24 hours
	Lepitect	BEE CAUTION	C 24 hours
	Orthene T,T & O WSP	BEE CAUTION	C 24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C 12 hours
azadirachtin	Aza-Direct		C 4 hours
	AzaGuard		C 4 hours
B. thuringiensis aizawai	XenTari	Most effective against young larvae.	C 4 hours
	Biobit HP	Most effective against young larvae.	C 4 hours
*bifenthrin	DiPel DF	Most effective against young larvae.	C 4 hours
	Onyx Pro	BEE CAUTION	W 12 hours
carbaryl	Talstar P Professional	BEE CAUTION	C 12 hours
	Carbaryl 4L	BEE CAUTION	C 12 hours
chlorantraniliprole	Sevin SL	BEE CAUTION	C 12 hours
	Acelepryn		4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

FOREST TENT CATERPILLAR**

Malacosoma disstria

Page 168, 170, 270, 500 (Johnson & Lyon)

<u>Chemical Control</u>		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
<i>Reference use only. NOT a label substitute.</i>				
<i>Select the appropriate insecticide/miticide for the correct life stage of the target pest.</i>				
*chlorpyrifos	Chlorpyrifos 4E AG	<i>Non-residential, BEE CAUTION</i>	W	24 hours
*clothianidin + bifenthrin	Aloft GC G	<i>BEE CAUTION</i>	C	12 hours
*deltamethrin	Suspend SC	<i>BEE CAUTION</i>	C	
*diflubenzuron	Dimilin 25W	<i>Effective against immatures. Bee caution.</i>	C	12 hours
*emamectin benzoate	Tree-age	<i>BEE CAUTION</i>	W	
indoxacarb	Provaunt	<i>BEE CAUTION</i>	C	
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
malathion	Malathion 5 EC	<i>BEE CAUTION</i>	W	12 hours
	Malathion 8 Flowable	<i>BEE CAUTION</i>	C	12 hours
*permethrin	Astro	<i>BEE CAUTION</i>	C	12 hours
	Perm-UP 3.2EC	<i>BEE CAUTION</i>	C	12 hours
pyrethrin	PyGanic	<i>OMRI listed</i>	C	12 hours
	Pyrenone		C	12 hours
spinosad	Conserve SC	<i>Most effective against young larvae.</i>	C	4 hours
*thiamethoxam	Meridian 0.33G	<i>BEE CAUTION</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
Azalea	<i>Azalea</i>
dogwood	<i>Cornus</i>
Forsythia	<i>Forsythia</i>
Hydrangea	<i>Hydrangea</i>
viburnum	<i>Viburnum</i>
Weigelia	<i>Weigelia</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph	May 01	Aug 01	foliage	discoloration, distortion	visual inspection
adult	Jun 01	Sep 30	foliage	discoloration, distortion	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph, adult	May 10 - May 20	230 - 310	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle
nymph, adult	May 20 - Jun 10	310 - 560	Remainder of season between the beginning and end phenology
nymph, adult	Jun 10 - Jun 20	560 - 740	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn

Chemical Control**Comments****Signal**
Word **Agricultural**
Restricted Entry
Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

*abamectin	Mauget Abacide 2	<i>BEE CAUTION</i>	W	
acephate	Lepitect	<i>BEE CAUTION</i>	C	24 hours
acetamiprid	TriStar 8.5 SL	<i>BEE CAUTION</i>	C	12 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
*bifenthrin	Onyx Pro	<i>BEE CAUTION</i>	W	12 hours
	Talstar P Professional	<i>BEE CAUTION</i>	C	12 hours
carbaryl	Carbaryl 4L	<i>BEE CAUTION</i>	C	12 hours
	Sevin SL	<i>BEE CAUTION</i>	C	12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	<i>Non-residential, BEE CAUTION</i>	W	24 hours
*clothianidin + bifenthrin	Aloft GC G	<i>BEE CAUTION</i>	C	12 hours
*deltamethrin	Suspend SC	<i>BEE CAUTION</i>	C	
flonicamid	Aria		C	12 hours
horticultural oil	Damoil		C	4 hours
*imidacloprid	Merit 75WSP	<i>BEE CAUTION</i>	C	12 hours
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

FOURLINED PLANT BUG**

Poecilocapsus lineatus

Page 396 (Johnson & Lyon)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal</u>	<u>Agricultural</u>
			<u>Word</u>	<u>Restricted Entry</u>
				<u>Interval (REI)^</u>
malathion	Malathion 5 EC	<i>BEE CAUTION</i>	W	12 hours
	Malathion 8 Flowable	<i>BEE CAUTION</i>	C	12 hours
*permethrin	Astro	<i>BEE CAUTION</i>	C	12 hours
	Perm-UP 3.2EC	<i>BEE CAUTION</i>	C	12 hours
pyrethrin	PyGanic	<i>OMRI listed</i>	C	12 hours
	Pyrenone		C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Host Plants: Common Name	Scientific Name
bayberry	<i>Myrica pensylvanica</i>
holly	<i>Ilex</i>
mockorange, sweet	<i>Philadelphus coronarius</i>
viburnum	<i>Viburnum</i>

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	Agricultural Restricted Entry Interval (REI)^
*chlorpyrifos	Chlorpyrifos 4E AG	<i>Non-residential, BEE CAUTION</i>	W	24 hours
*clothianidin + bifenthrin	Aloft GC G	<i>BEE CAUTION</i>	C	12 hours
*imidacloprid	Mallet 75 WSP	<i>BEE CAUTION</i>	C	12 hours
	Xytect 2F	<i>BEE CAUTION</i>	C	
pyrethrin	PyGanic	<i>OMRI listed</i>	C	12 hours
	Pyrenone		C	12 hours
*thiamethoxam	Meridian 0.33G	<i>BEE CAUTION</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

FRUITTREE LEAFROLLER**

Archips argyrospila

Page 172, 202, 214, 218 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

<u>Host Plants: Common Name</u>	<u>Scientific Name</u>
Azalea	<i>Azalea</i>
burning bush, winged euonymus	<i>Euonymus alatus</i>
chokecherry	<i>Prunus virginiana</i>
crabapple	<i>Malus</i>
elm	<i>Ulmus</i>
Ginkgo	<i>Ginkgo biloba</i>
honeylocust	<i>Gleditsia triacanthos</i>
maple	<i>Acer</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
larva	May 15	Jun 30	foliage	defoliation	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
larva	May 20 - May 31	from - 298	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark
larva	Jun 01 - Jun 10	to - 618	plants bloom: Kousa dogwood, cranberry bush, beautybush

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG Orthene T,T & O WSP	BEE CAUTION	C 24 hours
azadirachtin	Aza-Direct AzaGuard	C	C 4 hours
B. thuringiensis aizawai	XenTari	Most effective against young larvae.	C 4 hours
B. thuringiensis kurstaki	Biobit HP	Most effective against young larvae.	C 4 hours
	DiPel DF	Most effective against young larvae.	C 4 hours
*bifenthrin	Onyx Pro Talstar P Professional	BEE CAUTION	W 12 hours
		BEE CAUTION	C 12 hours
carbaryl	Carbaryl 4L Sevin SL	BEE CAUTION	C 12 hours
		BEE CAUTION	C 12 hours
chlorantraniliprole	Acelepryn		4 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C 12 hours
*deltamethrin	Suspend SC	BEE CAUTION	C
*diflubenzuron	Dimilin 25W	Effective against immatures. Bee caution.	C 12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

Comments

**Signal
Word**

**Agricultural
Restricted Entry
Interval (REI)^**

lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
*permethrin	Astro	<i>BEE CAUTION</i>	C	12 hours
	Perm-UP 3.2EC	<i>BEE CAUTION</i>	C	12 hours
spinosad	Conserve SC	<i>Most effective against young larvae.</i>	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GIANT BARK APHID**

Longistigma caryae

Page 310 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **SMALL STEMS**

Host Plants: Common Name	Scientific Name
beech	<i>Fagus</i>
birch	<i>Betula</i>
hickory	<i>Carya</i>
linden	<i>Tilia</i>
oak	<i>Quercus</i>
sycamore	<i>Platanus occidentalis</i>
willow	<i>Salix</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
nymph	May 15	Sep 30	bark	decline	visual inspection
adult	Jun 01	Sep 30	bark	decline	visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
nymph, adult	Jul 20 - Jul 31	1417 - 1673	plants bloom: butterfly bush, Clethra alnifolia, false spirea
nymph, adult	Aug 01 - Aug 20	1700 - 2173	Remainder of season between the beginning and end phenology
nymph, adult	Aug 20 - Aug 31	2173 - 2399	plant fruit in color: Viburnum dentatum

Biological Control

Orius sp. (predator)

Hippodamia convergens (lady beetle - predator)

Deraeocoris nebulosus (mirid bug - predator)

Chrysoperla sp. (green lacewing - predator)

Aphidoletes aphidimyza (midge, aphid predator)

Aphidius matricariae (wasp, aphid parasite)

Comments

Available commercially; occurs naturally

Available commercially; occurs naturally

occurs naturally

Available commercially; occurs naturally

Available commercially; occurs naturally

Available commercially; occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*abamectin	Mauget Abacide 2	BEE CAUTION	W	
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Lepitect	BEE CAUTION	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
	acetamiprid	TriStar 8.5 SL	BEE CAUTION	C
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours
chlorantraniliprole	Acelepryn			4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

Chemical Control*Reference use only. NOT a label substitute.**Select the appropriate insecticide/miticide for the correct life stage of the target pest.*

		<u>Comments</u>	<u>Signal Word</u>	Agricultural Restricted Entry Interval (REI)^
*chlorpyrifos	Chlorpyrifos 4E AG	<i>Non-residential, BEE CAUTION</i>	W	24 hours
*clothianidin + bifenthrin	Aloft GC G	<i>BEE CAUTION</i>	C	12 hours
*clothianidin	Arena 50 WDG		C	12 hours
*deltamethrin	Suspend SC	<i>BEE CAUTION</i>	C	
*dinotefuran	Safari 20 SG	<i>BEE CAUTION</i>	C	12 hours
*fenpropathrin	Tame 2.4EC	<i>BEE CAUTION</i>	W	24 hours
flonicamid	Aria		C	12 hours
horticultural oil	Damoil		C	4 hours
	Sunspray Ultra-Fine Spray Oil		C	4 hours
*imidacloprid	Mallet 75 WSP	<i>BEE CAUTION</i>	C	12 hours
	Merit 75WSP	<i>BEE CAUTION</i>	C	12 hours
	Xytect 2F	<i>BEE CAUTION</i>	C	
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
malathion	Malathion 5 EC	<i>BEE CAUTION</i>	W	12 hours
	Malathion 8 Flowable	<i>BEE CAUTION</i>	C	12 hours
*permethrin	Astro	<i>BEE CAUTION</i>	C	12 hours
pymetrozine	Endeavor		C	12 hours
pyrethrin	Pyrenone		C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

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GOLDEN OAK SCALE

Asterolecanium variolosum

Page 352 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **RARE**

Part of plant to treat: **STEM, TRUNK**

Host Plants: Common Name	Scientific Name
oak	<i>Quercus</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
nymph	Jun 01	Jul 15	bark	decline	visual inspection
adult	Jul 15	Sep 30	bark	decline	visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
nymph	Jun 01 - Jun 10	437 - 563	plants bloom: Kousa dogwood, cranberry bush, beautybush
nymph	Jul 01 - Jul 15	989 - 1306	plants bloom: Ceanothus americanus, Clematis jackmanii, Tilia cordata
adult	Jul 15 - Sep 30	1306 - 2862	rest of season

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Lepitect	Effective against immatures. Bee caution.	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
buprofezin	Talus 70DF	Only effective against immatures.	W	12 hours
carbaryl	Carbaryl 4L	Effective against immatures. Bee caution.	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W	24 hours
*clothianidin	Arena .25 G		C	12 hours
*deltamethrin	Suspend SC	Effective against immatures. Bee caution.	C	
horticultural oil	Damoil		C	4 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C	12 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede	Only effective against immatures.	W	12 hours
lambda-cyhalothrin	Demand CS	Effective against immatures. Bee caution.	C	
*lambda-cyhalothrin	Scimitar GC	Effective against immatures. Bee caution.	C	24 hours
malathion	Malathion 8 Flowable	Effective against immatures. Bee caution.	C	12 hours
pyriproxyfen	Distance IGR	Only effective against immatures.	C	12 hours
*thiamethoxam	Meridian 0.33G	BEE CAUTION	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

DELAYED DORMANT

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **STEM**

<u>Host Plants: Common Name</u>	<u>Scientific Name</u>
oak	<i>Quercus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
gall	Apr 01	Apr 20	twig, small branch	gall	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
gall	Apr 01 - Apr 20	28 -	96 plants bloom: silver maple, Cornelian cherry, pussy willow

Non Chemical Control

Prune off and destroy the affected stems.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GOUTY OAK GALL

Callirhytis quercuspunctata

Page 440, 442 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **TRUNK, STEM**

Host Plants: Common Name	Scientific Name
oak	<i>Quercus</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
gall	May 01	Jun 30	twig, small branch	gall	visual inspection
gall, adult	Jul 01	Jul 10	twig, small branch, foliage	gall	visual inspection, sticky cards
gall	Jul 10	Sep 30	twig, small branch	gall	visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
gall	Apr 20 - Apr 30	96 - 137	plants bloom: boxelder, star magnolia, periwinkle, Norway maple
gall	May 01 - May 10	144 - 228	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry
adult	May 10 - Jul 10	228 - 1196	Remainder of season between the beginning and end phenology
adult	Jul 10 - Jul 20	1196 - 1417	plants bloom: Abelia, golden rain tree, sourwood

Non Chemical Control

Prune off and destroy the affected stems.

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		Comments	Signal Word	Agricultural Restricted Entry Interval (REI)^
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours

Additional information on biology and control

Biology of the gouty oak gall is similar to that of the horned oak gall. Adults females emerge from galls in May and June. Eggs are laid in the larger veins located on the undersides of leaves.

Hatched larvae cause tiny oblong blister like galls to develop in these veins. These galls appear from late May through June. Mature males and females emerge from the leaf galls in early July.

Mated females lay eggs in young oak twigs. The galls generally appear the following Spring. Two or more years are required for these twig galls to appear. This insect does not produce horns in its gall. (Johnson and Lyon, 1994)

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **TRUNK, BRANCH**

Host Plants: Common Name	Scientific Name
cherry, flowering	<i>Prunus</i>
cherry, purple leaf sand	<i>Prunus cistena</i>
dogwood	<i>Cornus</i>
oak	<i>Quercus</i>
plum	<i>Prunus cerasifera</i>
redbud	<i>Cercis canadensis</i>
snowbell	<i>Styrax</i>
sweetgum	<i>Liquidambar</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
hole, frass from larva	May 01	Jun 30	trunk, stem	borer tunnels	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult (beetle)	Jun 01 - Jul 15	400 - 1272	plants bloom: Kousa dogwood, cranberry bush, beautybush

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C	12 hours

Additional information on biology and control

This 3mm long, chestnut colored beetle overwinters as an adult inside the galleries constructed the previous season. In spring, mated females exit the trees, fly to new hosts and excavate galleries deep into the heartwood of the trunks and larger branches. Her tunneling pushes out ‘toothpicks’ of compacted wood shavings and frass that can stick out an inch or more. These beetles actually feed on a fungus, also called ambrosia, which they carry with them on their bodies. The fungus can invade plant cells, causing a dark staining. It is not known if they are pathogenic to the plant. Once the fungus is growing in the galleries, females lay eggs. The creamy white, legless larvae feed on the fungus and remain in the gallery until they pupate. Emerged adult females will then mate with their brothers and begin another generation, flying to new trees the following spring.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GRAPE MEALYBUG**

Pseudococcus maritimus

Page 88 (Johnson & Lyon)

DORMANT SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **TRUNK, STEM**

<u>Host Plants: Common Name</u>	<u>Scientific Name</u>
Ginkgo	<i>Ginkgo biloba</i>
honeylocust	<i>Gleditsia triacanthos</i>
pear	<i>Pyrus calleryana</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph	Mar 01	May 01	bark	decline	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
egg, crawler	Mar 01 - Apr 10	0 - 41	None Offered

Chemical Control

Comments

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
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horticultural oil	Damoil	C	4 hours
	Sunspray Ultra-Fine SprayOil	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **TRUNK, STEM**

Host Plants: Common Name	Scientific Name
Ginkgo	<i>Ginkgo biloba</i>
honeylocust	<i>Gleditsia triacanthos</i>
pear	<i>Pyrus calleryana</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph	Jul 01	Sep 30	bark	decline	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
immature, adult	May 01 - May 10	144 - 228	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry
immature, adult	Jul 01 - Jul 10	989 - 1196	plants bloom: Ceanothus americanus, Clematis jackmanii, Tilia cordata
immature, adult	Jul 10 - Jul 20	1196 - 1417	plants bloom: Abelia, golden rain tree, sourwood

Biological Control

	<u>Comments</u>
<i>Lindorus lophanthae</i> (lady beetle - scale predator)	Available commercially
<i>Cryptolaemus montrouzieri</i> (lady beetle predator)	Available commercially; occurs naturally
<i>Chrysoperla sp.</i> (green lacewing - predator)	Available commercially; occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	C	24 hours
	Orthene T,T & O WSP	C	24 hours
acetamiprid	TriStar 8.5 SL	C	12 hours
azadirachtin	Aza-Direct	C	4 hours
	AzaGuard	C	4 hours
*bifenthrin	Onyx Pro	W	12 hours
	Talstar P Professional	C	12 hours
buprofezin	Talus 70DF	W	12 hours
carbaryl	Carbaryl 4L	C	12 hours
	Sevin SL	C	12 hours
*clothianidin + bifenthrin	Aloft GC G	C	12 hours
*clothianidin	Arena .25 G	C	12 hours
	Arena 50 WDG	C	12 hours
*deltamethrin	Suspend SC	C	
*dinotefuran	Safari 20 SG	C	12 hours
*fenpropathrin	Tame 2.4EC	W	24 hours
fenpyroximate	Akari 5SC	W	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GRAPE MEALYBUG**

Pseudococcus maritimus

Page 88 (Johnson & Lyon)

Chemical Control

Comments

Signal **Agricultural**
Word **Restricted Entry**
 Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

flonicamid	Aria		C	12 hours
horticultural oil	Damoil		C	4 hours
	Sunspray Ultra-Fine Spray Oil		C	4 hours
*imidacloprid	Mallet 75 WSP	<i>BEE CAUTION</i>	C	12 hours
	Merit 75WSP	<i>BEE CAUTION</i>	C	12 hours
	Xytect 2F	<i>BEE CAUTION</i>	C	
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
malathion	Malathion 5 EC	<i>BEE CAUTION</i>	W	12 hours
	Malathion 8 Flowable	<i>BEE CAUTION</i>	C	12 hours
*permethrin	Astro	<i>BEE CAUTION</i>	C	12 hours
	Perm-UP 3.2EC	<i>BEE CAUTION</i>	C	12 hours
pyrethrin	PyGanic	<i>OMRI listed</i>	C	12 hours
*thiamethoxam	Meridian 0.33G	<i>BEE CAUTION</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
hemlock	<i>Tsuga</i>

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
larva	Jun 10 - Jun 20	563 - 737	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn
larva	Jun 20 - Aug 20	737 - 2173	Remainder of season between the beginning and end phenology
larva	Aug 20 - Aug 31	2173 - 2399	plant fruit in color: <i>Viburnum dentatum</i>

Chemical Control**Comments**

Signal **Agricultural**
Word **Restricted Entry**
 Interval (REI)^

*Reference use only. NOT a label substitute.**Select the appropriate insecticide/miticide for the correct life stage of the target pest.*

abamectin	Avid 0.15 EC		W	12 hours
acephate	Acephate 97 WDG	<i>BEE CAUTION</i>	C	24 hours
	Orthene T,T & O WSP	<i>BEE CAUTION</i>	C	24 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
*chlorpyrifos	Chlorpyrifos 4E AG	<i>Non-residential, BEE CAUTION</i>	W	24 hours
*deltamethrin	Suspend SC	<i>BEE CAUTION</i>	C	
*diflubenzuron	Dimilin 25W	<i>Effective against immatures. Bee caution.</i>	C	12 hours
*imidacloprid	Merit 75WSP	<i>BEE CAUTION</i>	C	12 hours
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
spinosad	Conserve SC	<i>Most effective against young larvae.</i>	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GREEN PEACH APHID (DORMANT)**

Myzus persicae

Page 300 (Johnson & Lyon)

DORMANT SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **TRUNK, STEM**

<u>Host Plants: Common Name</u>	<u>Scientific Name</u>
apricot	<i>Prunus armeniaca</i>
cherry, flowering	<i>Prunus</i>
peach	<i>Prunus persica</i>
plum	<i>Prunus cerasifera</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
egg	Mar 01	Apr 15	bark		visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
egg	Mar 01 - Apr 10	0 - 41	None Offered

Chemical Control

Comments

Signal Agricultural Restricted Entry
Word Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

horticultural oil	Damoil	C	4 hours
	Sunspray Ultra-Fine Spray Oil	C	4 hours

Additional information on biology and control

The green peach aphid has a complicated life cycle. It overwinters as a glossy, black egg on the bark of peach, cherry, apricot and plum. Eggs hatch about the time of peach bloom and develop to adults in as few as five days. After three or four generations on fruit trees, winged adults develop and then disperse to other hosts including many vegetable crops. "In Pennsylvania this dispersion occurs in late June and July. Generations developing on vegetable crops will have both winged and wingless adults and reproduce asexually. In late August, winged forms will migrate back to fruit trees. Near the end of the growing season on fruit trees, sexual forms of the green peach aphid appear for the first time and mate. The female green peach aphid lays eggs on the bark of fruit trees. There may be 10 - 15 generations in a growing season. (Excerpted from "Green peach aphid on peppers", Penn State College of Agricultural Sciences, Cooperative Extension, Entomological Notes)

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
cherry, black	<i>Prunus serotina</i>
cherry, flowering	<i>Prunus</i>
peach	<i>Prunus persica</i>
plum	<i>Prunus cerasifera</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph	May 01	Sep 30	foliage, new shoots	decline	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph, adult	May 01 - May 10	144 - 228	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry
nymph, adult	May 10 - Jun 10	228 - 563	Remainder of season between the beginning and end phenology
nymph, adult	Jun 10 - Jun 20	563 - 737	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn

Biological Control

	<u>Comments</u>
<i>Orius sp. (predator)</i>	Available commercially; occurs naturally
<i>Hippodamia convergens (lady beetle - predator)</i>	Available commercially; occurs naturally
<i>Diaeretiella rapae (wasp, aphid parasite)</i>	occurs naturally
<i>Deraeocoris nebulosus (mirid bug - predator)</i>	occurs naturally
<i>Chrysoperla sp. (green lacewing - predator)</i>	Available commercially; occurs naturally
<i>Aphidoletes aphidimyza (midge, aphid predator)</i>	Available commercially; occurs naturally
<i>Aphidius matricariae (wasp, aphid parasite)</i>	Available commercially; occurs naturally

Chemical Control

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
<i>Reference use only. NOT a label substitute.</i>			
<i>Select the appropriate insecticide/miticide for the correct life stage of the target pest.</i>			
*abamectin	Mauget Abacide 2	BEE CAUTION	W
acephate	Acephate 97 WDG	BEE CAUTION	C 24 hours
	Orthene T,T & O WSP	BEE CAUTION	C 24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C 12 hours
azadirachtin	Aza-Direct		C 4 hours
	AzaGuard		C 4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W 12 hours
	Talstar P Professional	BEE CAUTION	C 12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C 12 hours
	Sevin SL	BEE CAUTION	C 12 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C 12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GREEN PEACH APHID (SPRING)**

Myzus persicae

Page 300 (Johnson & Lyon)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*deltamethrin	Suspend SC	BEE CAUTION	C	
*fenpropathrin	Tame 2.4EC	BEE CAUTION	W	24 hours
horticultural oil	Damoil		C	4 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C	12 hours
	Merit 75WSP	BEE CAUTION	C	12 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
malathion	Malathion 5 EC	BEE CAUTION	W	12 hours
	Malathion 8 Flowable	BEE CAUTION	C	12 hours
pymetrozine	Endeavor		C	12 hours
pyrethrin	Pyrenone		C	12 hours

Additional information on biology and control

See green peach aphid (dormant) for details.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
Clematis	<i>Clematis</i>
walnut	<i>Juglans</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult	May 10	Sep 30	foliage, new shoots	distortion	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph, adult	Jun 10 - Jun 20	563 - 737	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn
nymph, adult	Jun 20 - Aug 10	737 - 1933	Remainder of season between the beginning and end phenology
nymph, adult	Aug 10 - Aug 20	1933 - 2173	plant fruit in color: Mountain ash, cranberry bush

Biological Control

	<u>Comments</u>
<i>Orius sp.</i> (predator)	Available commercially; occurs naturally
<i>Hippodamia convergens</i> (lady beetle - predator)	Available commercially; occurs naturally
<i>Diaeretiella rapae</i> (wasp, aphid parasite)	occurs naturally
<i>Deraeocoris nebulosus</i> (mirid bug - predator)	occurs naturally
<i>Chrysoperla sp.</i> (green lacewing - predator)	Available commercially; occurs naturally
<i>Aphidoletes aphidimyza</i> (midge, aphid predator)	Available commercially; occurs naturally
<i>Aphidius matricariae</i> (wasp, aphid parasite)	Available commercially; occurs naturally

Chemical Control

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
<i>Reference use only. NOT a label substitute.</i>			
<i>Select the appropriate insecticide/miticide for the correct life stage of the target pest.</i>			
*abamectin	Mauget Abacide 2	BEE CAUTION	W
acephate	Acephate 97 WDG	BEE CAUTION	C 24 hours
	Lepitect	BEE CAUTION	C 24 hours
	Orthene T,T & O WSP	BEE CAUTION	C 24 hours
	TriStar 8.5 SL	BEE CAUTION	C 12 hours
azadirachtin	Aza-Direct		C 4 hours
	AzaGuard		C 4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W 12 hours
	Talstar P Professional	BEE CAUTION	C 12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C 12 hours
	Sevin SL	BEE CAUTION	C 12 hours
chlorantraniliprole	Acelepryn		4 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W 24 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C 12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GREEN PEACH APHID (SUMMER)**

Myzus persicae

Page 300 (Johnson & Lyon)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*deltamethrin	Suspend SC	BEE CAUTION	C	
*dinotefuran	Safari 20 SG	BEE CAUTION	C	12 hours
*fenpropathrin	Tame 2.4EC	BEE CAUTION	W	24 hours
flonicamid	Aria		C	12 hours
horticultural oil	Damoil		C	4 hours
	Sunspray Ultra-Fine Spray Oil		C	4 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C	12 hours
	Merit 75WSP	BEE CAUTION	C	12 hours
	Xytect 2F	BEE CAUTION	C	
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
malathion	Malathion 5 EC	BEE CAUTION	W	12 hours
	Malathion 8 Flowable	BEE CAUTION	C	12 hours
*permethrin	Astro	BEE CAUTION	C	12 hours
pymetrozine	Endeavor		C	12 hours
pyrethrin	PyGanic	OMRI listed	C	12 hours
	Pyrenone		C	12 hours

Additional information on biology and control

In summer the green peach aphid is a pale green with red eyes. See green peach aphid (dormant) for additional details.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

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GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
redbud	<i>Cercis canadensis</i>
rose of sharon	<i>Hibiscus syriacus</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
nymph	May 01	Sep 30	foliage	decline	visual inspection
adult	May 10	Sep 30	foliage		visual inspection, sticky cards

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
immature, adult	May 10 - Sep 20	228 - 2719	all season

Biological Control

	Comments
<i>Eretmocerus eremicus</i> (parasitic wasp)	Available commercially
<i>Encarsia formosa</i> (parasitic wasp)	Available commercially
<i>Delphastus catalinae</i> (lady beetle - predator)	Available commercially
<i>Chrysoperla</i> sp. (green lacewing - predator)	Available commercially; occurs naturally

Chemical Control

	Comments	Signal Word	Agricultural Restricted Entry Interval (REI)^
<i>Reference use only. NOT a label substitute.</i>			
<i>Select the appropriate insecticide/miticide for the correct life stage of the target pest.</i>			
acephate	Orthene T,T & O WSP	BEE CAUTION	C 24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C 12 hours
azadirachtin	Aza-Direct		C 4 hours
	AzaGuard		C 4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W 12 hours
	Talstar P Professional	BEE CAUTION	C 12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W 24 hours
*clothianidin	Arena .25 G		C 12 hours
	Arena 50 WDG		C 12 hours
fenazaquin	Magus	BEE CAUTION	W 12 hours
*fenpropathrin	Tame 2.4EC	BEE CAUTION	W 24 hours
fenpyroximate	Akari 5SC	Suppression	W 12 hours
flonicamid	Aria		C 12 hours
horticultural oil	Damoil		C 4 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C 12 hours
	Merit 75WSP	BEE CAUTION	C 12 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate		W 12 hours
	M-Pede		W 12 hours
lambda-cyhalothrin	Demand CS	BEE CAUTION	C

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GREENHOUSE WHITEFLY**

Trialeurodes vaporariorum

Page 320, 322 (Johnson & Lyon)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
malathion	Malathion 5 EC	BEE CAUTION	W	12 hours
	Malathion 8 Flowable	BEE CAUTION	C	12 hours
*permethrin	Astro	BEE CAUTION	C	12 hours
	Perm-UP 3.2EC	BEE CAUTION	C	12 hours
pymetrozine	Endeavor		C	12 hours
pyrethrin	PyGanic	OMRI listed	C	12 hours
pyriproxyfen	Distance IGR		C	12 hours
spiromesifen	Forbid 4F	most effective against immature stages	C	
*thiamethoxam	Meridian 0.33G	BEE CAUTION	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
boxelder	<i>Acer negundo</i>
maple	<i>Acer</i>
oak	<i>Quercus</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
larva	Jun 01	Aug 01	foliage	defoliation	visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
larva	Jun 01 - Jun 10	from - 533	plants bloom: Kousa dogwood, cranberry bush, beautybush
larva	Jun 10 - Jul 20	- - -	Remainder of season between the beginning and end phenology
larva	Jul 20 - Jul 31	to - 1645	plants bloom: butterfly bush, Clethra alnifolia, false spirea

Biological Control

Podisus maculiventris (spined soldier bug - predator)

Comments

Available commercially; occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C	12 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
B. thuringiensis aizawai	XenTari	Most effective against young larvae.	C	4 hours
B. thuringiensis kurstaki	Biobit HP	Most effective against young larvae.	C	4 hours
	DiPel DF	Most effective against young larvae.	C	4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
chlorantraniliprole	Acelepryn			4 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C	12 hours
*deltamethrin	Suspend SC	BEE CAUTION	C	
*diflubenzuron	Dimilin 25W	Effective against immatures. Bee caution.	C	12 hours
indoxacarb	Provaunt	BEE CAUTION	C	
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GREENSTRIPED MAPLEWORM**

Dryocampa rubicunda

Page 156 (Johnson & Lyon)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

<u>Chemical Control</u>		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
*permethrin	Astro	<i>BEE CAUTION</i>	C	12 hours
	Perm-UP 3.2EC	<i>BEE CAUTION</i>	C	12 hours
pyrethrin	Pyrenone		C	12 hours
spinosad	Conserve SC	<i>Most effective against young larvae.</i>	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
beech	<i>Fagus</i>
blackgum, tupelo	<i>Nyssa sylvatica</i>
elm	<i>Ulmus</i>
fir	<i>Abies</i>
linden	<i>Tilia</i>
maple	<i>Acer</i>
oak	<i>Quercus</i>
pine	<i>Pinus</i>
spruce	<i>Picea</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
larva	May 01	Jun 01	foliage	defoliation	visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
larva	May 10 - May 20	from - 190	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle
larva	May 20 - May 31	to - 400	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark

Biological Control

Podisus maculiventris (spined soldier bug - predator)

Comments

Available commercially; occurs naturally

Non Chemical Control

Where feasible, destroy egg masses during the winter

Band trees in early summer to trap migrating caterpillars

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Lepitect	BEE CAUTION	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C	12 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
B. thuringiensis aizawai	XenTari	Most effective against young larvae.	C	4 hours
B. thuringiensis kurstaki	Biobit HP	Most effective against young larvae.	C	4 hours
	DiPel DF	Most effective against young larvae.	C	4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

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^for agricultural applications only.

GYPSY MOTH**

Lymantria dispar

Page 138 (Johnson & Lyon)

Page 27 (Adams & Packauskas)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
	Talstar P Professional	BEE CAUTION	C	12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
chlorantraniliprole	Acelepryn			4 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W	24 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C	12 hours
*deltamethrin	Suspend SC	BEE CAUTION	C	
*diflubenzuron	Dimilin 25W	Effective against immatures. Bee caution.	C	12 hours
*emamectin benzoate	Tree-age	BEE CAUTION	W	
indoxacarb	Provaunt	BEE CAUTION	C	
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
*permethrin	Astro	BEE CAUTION	C	12 hours
	Perm-UP 3.2EC	BEE CAUTION	C	12 hours
phosmet	Imidan 70W	BEE CAUTION	W	24 hours
pyrethrin	PyGanic	OMRI listed	C	12 hours
	Pyrenone		C	12 hours
spinosad	Conserve SC	Most effective against young larvae.	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

Host Plants: <u>Common Name</u>	<u>Scientific Name</u>
hackberry	<i>Celtis occidentalis</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph	May 15	Sep 01	foliage	leaf distortion (gall)	visual inspection
adult	Sep 01	Oct 31	foliage		visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult, egg	May 01 - May 10	from - 148	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry
egg, nymph	May 10 - May 20	- - -	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle
adult, egg	May 20 - May 31	to - 448	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark

Chemical Control

Comments

Signal **Agricultural**
Word **Restricted Entry**
Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

acetamiprid	TriStar 8.5 SL	<i>BEE CAUTION</i>	C	12 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
*bifenthrin	Talstar P Professional	<i>BEE CAUTION</i>	C	12 hours
carbaryl	Carbaryl 4L	<i>BEE CAUTION</i>	C	12 hours
	Sevin SL	<i>BEE CAUTION</i>	C	12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	<i>Non-residential, BEE CAUTION</i>	W	24 hours
*clothianidin	Arena .25 G		C	12 hours
*dinotefuran	Safari 20 SG	<i>BEE CAUTION</i>	C	12 hours
fenpyroximate	Akari 5SC		W	12 hours
horticultural oil	Damoil		C	4 hours
*imidacloprid	Mallet 75 WSP	<i>BEE CAUTION</i>	C	12 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
pyrethrin	Pyrenone		C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

HAWTHORN LACE BUG**

Corythucha cydoniae

Page 426 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE**

<u>Host Plants: Common Name</u>	<u>Scientific Name</u>
Cotoneaster	<i>Cotoneaster</i>
firethorn	<i>Pyracantha</i>
hawthorn	<i>Crataegus</i>
quince, flowering	<i>Chaenomeles</i>
serviceberry, shadbush	<i>Amelanchier</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph	May 10	Sep 15	foliage	discoloration (brownish spots)	visual inspection
adult	Jul 01	Sep 30	foliage	discoloration (brownish spots)	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph	May 10 - May 20	239 - 363	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle
nymph, adult	Jul 10 - Jul 20	1196 - 1417	plants bloom: Abelia, golden rain tree, sourwood

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C 24 hours
	Lepitect	BEE CAUTION	C 24 hours
	Orthene T,T & O WSP	BEE CAUTION	C 24 hours
azadirachtin	Aza-Direct		C 4 hours
	AzaGuard		C 4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W 12 hours
	Talstar P Professional	BEE CAUTION	C 12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C 12 hours
	Sevin SL	BEE CAUTION	C 12 hours
chlorantraniliprole	Acelepryn		4 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W 24 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C 12 hours
*clothianidin	Arena .25 G		C 12 hours
*deltamethrin	Suspend SC	BEE CAUTION	C
*dinotefuran	Safari 20 SG	BEE CAUTION	C 12 hours
*fenpropathrin	Tame 2.4EC	BEE CAUTION	W 24 hours
horticultural oil	Damoil		C 4 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C 12 hours
	Merit 75WSP	BEE CAUTION	C 12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	Agricultural Restricted Entry Interval (REI)^
	Xytect 2F	<i>BEE CAUTION</i>	C	
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
malathion	Malathion 5 EC	<i>BEE CAUTION</i>	W	12 hours
	Malathion 8 Flowable	<i>BEE CAUTION</i>	C	12 hours
*permethrin	Astro	<i>BEE CAUTION</i>	C	12 hours
	Perm-UP 3.2EC	<i>BEE CAUTION</i>	C	12 hours
pyrethrin	PyGanic	<i>OMRI listed</i>	C	12 hours
	Pyrenone		C	12 hours
*thiamethoxam	Meridian 0.33G	<i>BEE CAUTION</i>	C	12 hours

Additional information on biology and control

The hawthorn lace bug overwinters as an adult in protected areas near hosts. There is most likely one generation in New England. Five to seven weeks are required for an egg to develop into an adult.

Signal words: C=Caution; W = Warning; DP = Danger Poison

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HEMLOCK ERIOPHYID MITE

Nalepella tsugifoliae

Page 122 (Johnson & Lyon)

DORMANT SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
hemlock	<i>Tsuga</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
immature	Mar 01	Apr 15	foliage	discoloration	visual inspection (magnification)
immature, adult	Apr 15	May 31	foliage	discoloration	visual inspection (magnification)

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
immature, adult	Mar 01 - Apr 10	0 - 41	None Offered

Chemical Control

Comments

Signal **Agricultural**
Word **Restricted Entry**
Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

horticultural oil	Damoil	C	4 hours
	Sunspray Ultra-Fine SprayOil	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

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GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

Host Plants: <u>Common Name</u>	<u>Scientific Name</u>
hemlock	<i>Tsuga</i>

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
immature, adult	Apr 20 - Apr 30	from - 100	plants bloom: boxelder, star magnolia, periwinkle, Norway maple
immature, adult	May 01 - May 20	- -	- Remainder of season between the beginning and end phenology
immature, adult	May 20 - May 31	to - 400	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark

Chemical Control

Comments

Signal **Agricultural**
Word **Restricted Entry**
Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

abamectin	Avid 0.15 EC		W	12 hours
*bifenthrin	Onyx Pro	<i>BEE CAUTION</i>	W	12 hours
carbaryl	Carbaryl 4L	<i>BEE CAUTION</i>	C	12 hours
	Sevin SL	<i>BEE CAUTION</i>	C	12 hours
fenazaquin	Magus	<i>BEE CAUTION</i>	W	12 hours
fenpyroximate	Akari 5SC		W	12 hours
horticultural oil	Damoil		C	4 hours
	Sunspray Ultra-Fine Spray Oil		C	4 hours
spiromesifen	Forbid 4F	<i>most effective against immature stages</i>	C	

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

HEMLOCK LOOPER**

Lambdina fiscellaria

Page 24 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
fir	<i>Abies</i>
hemlock	<i>Tsuga</i>
spruce	<i>Picea</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
larva	Jun 01	Sep 01	foliage	defoliation	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
larva	Jun 01 - Jun 10	from - 448	plants bloom: Kousa dogwood, cranberry bush, beautybush
larva	Jun 10 - Jun 20	to - 707	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn
larva	Jun 20 - Jun 30	707 - 967	plants bloom: Rhododendron maximum, Spiraea bumalda, Philadelphus

Biological Control

Podisus maculiventris (spined soldier bug - predator)

Comments

Available commercially; occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Lepitect	BEE CAUTION	C	24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C	12 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
B. thuringiensis aizawai	XenTari	Most effective against young larvae.	C	4 hours
B. thuringiensis kurstaki	Biobit HP	Most effective against young larvae.	C	4 hours
	DiPel DF	Most effective against young larvae.	C	4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
chlorantraniliprole	Acelepryn			4 hours
*deltamethrin	Suspend SC	BEE CAUTION	C	
*diflubenzuron	Dimilin 25W	Effective against immatures. Bee caution.	C	12 hours
indoxacarb	Provaunt	BEE CAUTION	C	
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

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Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

<u>Chemical Control</u>		<u>Comments</u>	<u>Signal Word</u>	Agricultural Restricted Entry Interval (REI)^
*permethrin	Astro	<i>BEE CAUTION</i>	C	12 hours
	Perm-UP 3.2EC	<i>BEE CAUTION</i>	C	12 hours
pyrethrin	Pyrenone		C	12 hours
spinosad	Conserve SC	<i>Most effective against young larvae.</i>	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

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HEMLOCK WOOLLY ADELGID**

Adelges tsugae

Page 76, 78 (Johnson & Lyon)

Page 36 (Adams & Packauskas)

DORMANT SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: ANNUAL

Part of plant to treat: FOLIAGE-TWIGS

Host Plants: Common Name	Scientific Name
hemlock	<i>Tsuga</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
egg, adult, some (crawlers, nymphs)	Mar 01	Apr 15	foliage, twig	decline	visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
egg, adult, some (crawlers, nymphs)	Mar 01 - Apr 01	0 - 41	None Offered

Chemical Control

Comments

Signal Agricultural
Word Restricted Entry
Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

horticultural oil	Damoil	C	4 hours
	Sunspray Ultra-Fine SprayOil	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

DELAYED DORMANT

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **ANNUAL**

Part of plant to treat: **FOLIAGE-TWIGS**

Host Plants: Common Name	Scientific Name
hemlock	<i>Tsuga</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
egg, adult, some (crawlers, nymphs)	Apr 01	Apr 30	foliage, twig	decline	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
egg, adult, some (crawlers, nymphs)	Apr 01 - Apr 20	28 -	96 plants bloom: silver maple, Cornelian cherry, pussy willow

Chemical Control

Comments

Signal **Agricultural**
Word **Restricted Entry**
 Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

horticultural oil	Damoil	C	4 hours
	Sunspray Ultra-Fine SprayOil	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

HEMLOCK WOOLLY ADELGID**

Adelges tsugae

Page 76, 78 (Johnson & Lyon)

Page 36 (Adams & Packauskas)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: ANNUAL

Part of plant to treat: FOLIAGE-TWIGS

Host Plants: Common Name	Scientific Name
hemlock	<i>Tsuga</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
nymph (crawler)	May 01	May 15	foliage, twig	decline	visual inspection
all stages	May 10	Aug 01	foliage, twig	decline	visual inspection
nymph (resting)	Jul 01	Oct 31	foliage, twig	decline	visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
crawler, immature	May 01 - May 10	144 - 228	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry
all stages	May 10 - Jun 20	228 - 737	Remainder of season between the beginning and end phenology
all stages	Jun 20 - Jun 30	737 - 967	plants bloom: Rhododendron maximum, Spiraea bumalda, Philadelphus
nymph (resting)	Jul 01 - Oct 15	989 - 2969	rest of season

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		Comments	Signal Word	Agricultural Restricted Entry Interval (REI)^
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C	12 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W	24 hours
*clothianidin	Arena .25 G		C	12 hours
*deltamethrin	Suspend SC	BEE CAUTION	C	
*dinotefuran	Safari 20 SG	BEE CAUTION	C	12 hours
horticultural oil	Damoil		C	4 hours
	Sunspray Ultra-Fine Spray Oil		C	4 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C	12 hours
	Merit 75WSP	BEE CAUTION	C	12 hours
	Xytext 2F	BEE CAUTION	C	
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
*thiamethoxam	Meridian 0.33G	BEE CAUTION	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

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HICKORY LEAF STEM GALL PHYLLOXERA

Phylloxera caryaecaulis
Page 460 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE, STEMS**

Host Plants: Common Name	Scientific Name
hickory	<i>Carya</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
gall	Apr 15	Jun 01	foliage, stems	distortion	visual inspection
gall	Jun 01	Jul 01	foliage, stems		visual inspection, sticky cards

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph	Apr 20 - Apr 30	from - 50	plants bloom: boxelder, star magnolia, periwinkle, Norway maple
nymph	May 01 - May 10	- -	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry
nymph	May 10 - May 20	to - 246	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle

Chemical Control

Comments

Signal Agricultural
Word Restricted Entry
Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

horticultural oil	Damoil		C	4 hours
*imidacloprid	Xytect 2F	<i>BEE CAUTION</i>	C	

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

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HOLLY LEAFMINER***Phytomyza ilicis*

Page 206 (Johnson & Lyon)

Page 13 (Adams & Packauskas)

GROWING SEASON**Apply thorough treatment only when pest stage found.**Frequency with which pest occurs: **COMMON**Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
holly	<i>Ilex</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult (fly)	May 01	Jun 01	foliage	small leaf holes	visual inspection, sticky cards
larva	Jul 01	Oct 31	foliage	discoloration (mining)	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult	May 10 - May 20	from - 245	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle
adult	May 20 - May 30	to - 448	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark

Chemical Control**Comments**

Signal **Agricultural**
Word **Restricted Entry**
Interval (REI)^

*Reference use only. NOT a label substitute.**Select the appropriate insecticide/miticide for the correct life stage of the target pest.*

*abamectin	Mauget Abacide 2	<i>BEE CAUTION</i>	W	
acephate	Acephate 97 WDG	<i>BEE CAUTION</i>	C	24 hours
	Lepitect	<i>BEE CAUTION</i>	C	24 hours
acetamiprid	TriStar 8.5 SL	<i>BEE CAUTION</i>	C	12 hours
	Aza-Direct		C	4 hours
azadirachtin	AzaGuard		C	4 hours
	Onyx Pro	<i>BEE CAUTION</i>	W	12 hours
*bifenthrin	Talstar P Professional	<i>BEE CAUTION</i>	C	12 hours
	Carbaryl 4L	<i>BEE CAUTION</i>	C	12 hours
carbaryl	Sevin SL	<i>BEE CAUTION</i>	C	12 hours
	Safari 20 SG	<i>BEE CAUTION</i>	C	12 hours
*dinotefuran	Tree-age	<i>BEE CAUTION</i>	W	
*emamectin benzoate	Mallet 75 WSP	<i>BEE CAUTION</i>	C	12 hours
*imidacloprid	Merit 75WSP	<i>BEE CAUTION</i>	C	12 hours
	Xytect 2F	<i>BEE CAUTION</i>	C	
	Demand CS	<i>BEE CAUTION</i>	C	
lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
*permethrin	Astro	<i>BEE CAUTION</i>	C	12 hours
	Perm-UP 3.2EC	<i>BEE CAUTION</i>	C	12 hours
pyrethrin	PyGanic	<i>OMRI listed</i>	C	12 hours
spinosad	Conserve SC	<i>Most effective against young larvae.</i>	C	4 hours
*thiamethoxam	Meridian 0.33G	<i>BEE CAUTION</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
honeylocust	<i>Gleditsia triacanthos</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph	Apr 15	May 31	foliage	distortion, discoloration	visual inspection (magnification), plant tapping
adult	Jun 01	Jul 01	foliage, stems	distortion, discoloration	visual inspection (magnification), plant tapping

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph, adult?	Apr 20 - Apr 30	from - 58	plants bloom: boxelder, star magnolia, periwinkle, Norway maple
nymph, adult?	May 01 - May 10	to - 246	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*abamectin	Mauget Abacide 2	BEE CAUTION	W	
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C	12 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W	24 hours
*deltamethrin	Suspend SC	BEE CAUTION	C	
*emamectin benzoate	Tree-age	BEE CAUTION	W	
flonicamid	Aria		C	12 hours
horticultural oil	Damoil		C	4 hours
*imidacloprid	Merit 75WSP	BEE CAUTION	C	12 hours
	Xylect 2F	BEE CAUTION	C	
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
*permethrin	Astro	BEE CAUTION	C	12 hours
	Perm-UP 3.2EC	BEE CAUTION	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

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HONEYLOCUST PLANT BUG**

Diaphnocoris chlorionis

Page 404 (Johnson & Lyon)

Chemical Control

Comments

Signal **Agricultural**
Word **Restricted Entry**
 Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

pyrethrin	Pyrenone		C	12 hours
*thiamethoxam	Meridian 0.33G	BEE CAUTION	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **NEW FOLIAR GROWTH**

Host Plants: <u>Common Name</u>	<u>Scientific Name</u>
honeylocust	<i>Gleditsia triacanthos</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult	May 01	Jun 30	foliage		visual inspection, sticky cards
larva	Jun 15	Jul 15	foliage	distortion (leaf cupping)	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult, egg	May 20 - May 31	192 - 229	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
carbaryl	Carbaryl 4L	BEE CAUTION	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
*deltamethrin	Suspend SC	BEE CAUTION	C	
*imidacloprid	Xytect 2F	BEE CAUTION	C	
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
spinosad	Conserve SC	Most effective against young larvae.	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

HONEYLOCUST SPIDER MITE

Eotetranychus multidigituli

Page 472, 474, 476 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
honeylocust	<i>Gleditsia triacanthos</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
all stages	Jun 01	Sep 30	foliage	discoloration (stippling)	visual inspection (magnification), plant tapping

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
immature, adult	Jul 01 - Jul 10	from - 912	plants bloom: Ceanothus americanus, Clematis jackmanii, Tilia cordata
immature, adult	Jul 10 - Jul 20	- - -	plants bloom: Abelia, golden rain tree, sourwood
immature, adult	Jul 20 - Jul 31	to - 2800	plants bloom: butterfly bush, Clethra alnifolia, false spirea

Biological Control

Feltiella acarisuga (midge - spider mite predator)

Stethorus punctillum (lady beetle - predator)

Phytoseiulus persimilis (predatory mite)

Neoseiulus cucumeris (predatory mite)

Comments

available commercially

Available commercially; occurs naturally

Available commercially; occurs naturally

Available commercially; occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
abamectin	Avid 0.15 EC	W	12 hours
acephate	Lepitect	C	24 hours
bifenazate	Floramite SC	C	12 hours
*bifenthrin	Onyx Pro	W	12 hours
etoxazole	Tetrasan 5 WDG	C	12 hours
fenazaquin	Magus	W	12 hours
hexythiazox	Hexygon DF	C	12 hours
horticultural oil	Damoil	C	4 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate	W	12 hours
	M-Pede	W	12 hours
malathion	Malathion 5 EC	W	12 hours
	Malathion 8 Flowable	C	12 hours
spiromesifen	Forbid 4F	C	

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

DORMANT SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **STEM**

Host Plants: Common Name	Scientific Name
oak	<i>Quercus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
gall	Jan 01	Apr 15	twig, small branch	gall	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
gall	Mar 01 - Apr 10	0 - 41	None Offered

Non Chemical Control

Prune off and destroy the affected stems.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

HORNED OAK GALL**

Callirhytis cornigera

Page 440, 442 (Johnson & Lyon)

DELAYED DORMANT

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **STEM**

Host Plants: Common Name	Scientific Name
oak	<i>Quercus</i>
oak, black	<i>Quercus velutina</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
gall	Apr 01	Apr 20	twig, small branch	gall	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
gall	Apr 01 - Apr 20	28 - 96	plants bloom: silver maple, Cornelian cherry, pussy willow

Non Chemical Control

Prune off and destroy the affected stems.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
oak, black	<i>Quercus velutina</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
gall	May 01	Jun 30	twig, small branch	gall	visual inspection
gall, adult	Jul 01	Jul 10	twig, small branch, foliage	gall	visual inspection, sticky cards
gall	Jul 10	Dec 31	twig, small branch	gall	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
gall	Apr 20 - Apr 30	96 - 137	plants bloom: boxelder, star magnolia, periwinkle, Norway maple
gall	May 01 - May 10	144 - 228	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry
adult	May 10 - Jul 10	228 - 1196	Remainder of season between the beginning and end phenology
adult	Jul 10 - Jul 20	1196 - 1417	plants bloom: Abelia, golden rain tree, sourwood

Non Chemical Control

Prune off and destroy the affected stems.

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*bifenthrin	Onyx Pro	<i>BEE CAUTION</i>	W	12 hours
	Talstar P Professional	<i>BEE CAUTION</i>	C	12 hours
carbaryl	Carbaryl 4L	<i>BEE CAUTION</i>	C	12 hours
	Sevin SL	<i>BEE CAUTION</i>	C	12 hours

Additional information on biology and control

Adults females emerge from galls in May and June. Eggs are laid in the larger veins located on the undersides of leaves. Hatched larvae cause tiny oblong blister like galls to develop in these veins. These galls appear from late May through June. Mature males and females emerge from the leaf galls in early July. Mated females lay eggs in young oak twigs. The galls generally appear the following Spring. Two or more years are required for these twig galls to appear. The horns of this gall develop the second or third year after the eggs are laid. (Johnson and Lyon, 1994)

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

HORNET CLEARWING MOTH

Paranthrene simulans

Page 254, 260 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **STEM, TRUNK**

Host Plants: Common Name	Scientific Name
elm	<i>Ulmus</i>
oak	<i>Quercus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult (clearwing moth)	Apr 01	Aug 01	bark, foliage		visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
larva, ?adult	Jul 01 - Jul 10	989 - 1196	plants bloom: Ceanothus americanus, Clematis jackmanii, Tilia cordata
larva, ?adult	Jul 10 - Jul 20	1196 - 1417	plants bloom: Abelia, golden rain tree, sourwood
larva, ?adult	Jul 20 - Jul 31	1417 - 1673	plants bloom: butterfly bush, Clethra alnifolia, false spirea

Biological Control

	<u>Comments</u>
<i>Steinernema feltiae</i> (nematode)	Available commercially
<i>Steinernema carpocapsae</i> (nematode)	Available commercially
<i>Heterorhabditis bacteriophora</i> (nematode)	Available commercially

Chemical Control

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
<i>Reference use only. NOT a label substitute.</i>			
<i>Select the appropriate insecticide/miticide for the correct life stage of the target pest.</i>			
*bifenthrin	Onyx Pro	BEE CAUTION	W 12 hours
	Talstar P Professional	BEE CAUTION	C 12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W 24 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE JUST AFTER BUD BREAK**

Host Plants: Common Name	Scientific Name
Hydrangea	<i>Hydrangea</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
larva	Jun 01	Sep 30	foliage	distortion, discoloration	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
larva	Apr 20 - Apr 30	96 - 137	plants bloom: boxelder, star magnolia, periwinkle, Norway maple
larva	May 01 - May 10	144 - 228	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry

Non Chemical Control

Remove and destroy infested plant parts.

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Lepitect	<i>Effective against immatures. Bee caution.</i>	C	24 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
B. thuringiensis kurstaki	DiPel DF	<i>Most effective against young larvae.</i>	C	4 hours
*bifenthrin	Onyx Pro	<i>BEE CAUTION</i>	W	12 hours
	Talstar P Professional	<i>BEE CAUTION</i>	C	12 hours
carbaryl	Carbaryl 4L	<i>BEE CAUTION</i>	C	12 hours
	Sevin SL	<i>BEE CAUTION</i>	C	12 hours
chlorantraniliprole	Acelepryn			4 hours
*deltamethrin	Suspend SC	<i>BEE CAUTION</i>	C	
horticultural oil	Damoil		C	4 hours
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
*permethrin	Astro	<i>BEE CAUTION</i>	C	12 hours
	Perm-UP 3.2EC	<i>BEE CAUTION</i>	C	12 hours
pyrethrin	PyGanic	<i>OMRI listed</i>	C	12 hours
	Pyrenone		C	12 hours
spinosad	Conserve SC	<i>Most effective against young larvae.</i>	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

IMPORTED WILLOW LEAF BEETLE**

Plagioder a versicolora

Page 228 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
poplar or aspen	<i>Populus</i>
willow	<i>Salix</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult	May 15	Aug 01	foliage	defoliation	visual inspection
larva	May 20	Aug 01	foliage	defoliation	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult	May 10 - May 20	from - 192	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle
adult	May 20 - Jun 10	- - -	Remainder of season between the beginning and end phenology
adult	Jun 10 - Jun 20	to - 448	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	<i>BEE CAUTION</i>	C	24 hours
	Orthene T,T & O WSP	<i>BEE CAUTION</i>	C	24 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
*bifenthrin	Onyx Pro	<i>BEE CAUTION</i>	W	12 hours
	Talstar P Professional	<i>BEE CAUTION</i>	C	12 hours
carbaryl	Carbaryl 4L	<i>BEE CAUTION</i>	C	12 hours
	Sevin SL	<i>BEE CAUTION</i>	C	12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	<i>Non-residential, BEE CAUTION</i>	W	24 hours
*clothianidin	Arena .25 G		C	12 hours
*deltamethrin	Suspend SC	<i>BEE CAUTION</i>	C	
*dinotefuran	Safari 20 SG	<i>BEE CAUTION</i>	C	12 hours
*imidacloprid	Mallet 75 WSP	<i>BEE CAUTION</i>	C	12 hours
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
pyrethrin	Pyrenone		C	12 hours
spinosad	Conserve SC	<i>Most effective against young larvae.</i>	C	4 hours
*thiamethoxam	Meridian 0.33G	<i>BEE CAUTION</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

DORMANT SEASON

Apply thorough treatment only when pest stage found.

Host Plants: Common Name

Scientific Name

barberry	<i>Berberis</i>
Euonymus	<i>Euonymus</i>
firethorn	<i>Pyracantha</i>
hemlock	<i>Tsuga</i>
holly	<i>Ilex</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph	Mar 01	Apr 20	stem, branch	branch dieback	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph	Mar 15 - Apr 15	5 - 44	None Offered

Additional information on biology and control

The Indian wax scale overwinters as adult females that look like white dunce caps, on twigs. Reproduction occurs without males and eggs begin to hatch in late spring to early summer. Crawler sprays can be applied to stems in late June to July in Connecticut. This soft scale likely has only one generation in Connecticut. When the host is growing vigorously, the scales can excrete large amounts of honeydew.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

INDIAN WAX SCALE

Ceroplastes ceriferus

Page 356 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Host Plants: Common Name

Scientific Name

barberry	<i>Berberis</i>
boxwood	<i>Buxus spp.</i>
Euonymus	<i>Euonymus</i>
firethorn	<i>Pyracantha</i>
hemlock	<i>Tsuga</i>
holly	<i>Ilex</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
crawler	Jun 01	Jul 01	stem, branch	branch dieback	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
crawler	Jun 15 - Jun 30	632 - 940	plants bloom: Rhododendron maximum, Spiraea bumalda, Philadelphus
crawler	Jul 01 - Jul 10	960 - 1162	plants bloom: Ceanothus americanus, Clematis jackmanii, Tilia cordata
crawler	Jul 10 - Jul 20	1162 - 1393	plants bloom: Abelia, golden rain tree, sourwood

Chemical Control

Comments

Signal
Word **Agricultural**
Restricted Entry
Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

acephate	Acephate 97 WDG	<i>BEE CAUTION</i>	C	24 hours
buprofezin	Talus 70DF	<i>Only effective against immatures.</i>	W	12 hours
carbaryl	Carbaryl 4L	<i>Effective against immatures. Bee caution.</i>	C	12 hours
*clothianidin	Arena 50 WDG	<i>apply drench when soil is not frozen or waterlogged.</i>	C	12 hours
*imidacloprid	Mallet 75 WSP	<i>BEE CAUTION</i>	C	12 hours
malathion	Malathion 8 Flowable	<i>Effective against immatures. Bee caution.</i>	C	12 hours
pyriproxyfen	Distance IGR	<i>Only effective against immatures.</i>	C	12 hours
*thiamethoxam	Meridian 0.33G	<i>BEE CAUTION</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
Azalea	<i>Azalea</i>
burning bush, winged euonymus	<i>Euonymus alatus</i>
butterfly bush	<i>Buddleia</i>
crabapple	<i>Malus</i>
dogwood	<i>Cornus</i>
elm	<i>Ulmus</i>
heather	<i>Calluna</i>
holly, American	<i>Ilex opaca</i>
horsechestnut	<i>Aesculus hippocastanum</i>
lilac	<i>Syringa</i>
linden	<i>Tilia</i>
maple	<i>Acer</i>
maple, Japanese	<i>Acer palmatum</i>
pussywillow	<i>Salix discolor</i>
rose	<i>Rosa</i>
sycamore	<i>Platanus occidentalis</i>
Wisteria	<i>Wisteria</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult	Jul 01	Sep 01	foliage	defoliation	visual inspection, pheromone traps
larva (grub)	Aug 01	Nov 01	turf roots	decline	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult	Jul 01 - Jul 10	from - 1029	plants bloom: Ceanothus americanus, Clematis jackmanii, Tilia cordata
adult	Jul 10 - Aug 10	- - -	Remainder of season between the beginning and end phenology
adult	Aug 10 - Aug 20	to - 2154	plant fruit in color: Mountain ash, cranberry bush

Biological Control

	<u>Comments</u>
<i>Steinernema feltiae</i> (nematode)	Available commercially
<i>Steinernema carpocapsae</i> (nematode)	Available commercially
<i>Heterorhabditis bacteriophora</i> (nematode)	Available commercially

Chemical Control

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
<i>Reference use only. NOT a label substitute.</i>			
<i>Select the appropriate insecticide/miticide for the correct life stage of the target pest.</i>			
acephate	Acephate 97 WDG	BEE CAUTION	C 24 hours
	Orthene T,T & O WSP	BEE CAUTION	C 24 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

JAPANESE BEETLE**

Popillia japonica

Page 236 (Johnson & Lyon)

Page 23 (Adams & Packauskas)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C	12 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W	24 hours
*deltamethrin	Suspend SC	BEE CAUTION	C	
*dinotefuran	Safari 20 SG	BEE CAUTION	C	12 hours
*fenpropathrin	Tame 2.4EC	BEE CAUTION	W	24 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C	12 hours
	Merit 75WSP	BEE CAUTION	C	12 hours
	Xytect 2F	BEE CAUTION	C	
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
malathion	Malathion 5 EC	BEE CAUTION	W	12 hours
	Malathion 8 Flowable	BEE CAUTION	C	12 hours
*permethrin	Astro	BEE CAUTION	C	12 hours
	Perm-UP 3.2EC	BEE CAUTION	C	12 hours
pyrethrin	Pyrenone		C	12 hours
*thiamethoxam	Meridian 0.33G	BEE CAUTION	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
filbert or hazelnut	<i>Corylus</i>
mountain ash, European	<i>Sorbus aucuparia</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph, adult	May 15	Aug 01	foliage	distortion, discoloration	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph, adult	May 20 - May 31	311 - 423	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark
nymph, adult	Jun 01 - Jul 20	437 - 1417	Remainder of season between the beginning and end phenology
nymph, adult	Jul 20 - Jul 31	1417 - 1673	plants bloom: butterfly bush, Clethra alnifolia, false spirea

Biological Control

Chrysoperla sp. (green lacewing - predator)

Comments

Available commercially; occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C 24 hours
	Orthene T,T & O WSP	BEE CAUTION	C 24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C 12 hours
azadirachtin	Aza-Direct		C 4 hours
	AzaGuard		C 4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W 12 hours
	Talstar P Professional	BEE CAUTION	C 12 hours
buprofezin	Talus 70DF	<i>Only effective against immatures.</i>	W 12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C 12 hours
	Sevin SL	BEE CAUTION	C 12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	<i>Non-residential, BEE CAUTION</i>	W 24 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C 12 hours
*clothianidin	Arena .25 G		C 12 hours
*deltamethrin	Suspend SC	BEE CAUTION	C
*dinotefuran	Safari 20 SG	BEE CAUTION	C 12 hours
*fenpropathrin	Tame 2.4EC	BEE CAUTION	W 24 hours
fenpyroximate	Akari 5SC		W 12 hours
flonicamid	Aria		C 12 hours
horticultural oil	Damoil		C 4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

JAPANESE LEAFHOPPER

Orientus ishidae

Page 416 (Johnson & Lyon)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C	12 hours
	Merit 75WSP	BEE CAUTION	C	12 hours
	Xytect 2F	BEE CAUTION	C	
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
*permethrin	Astro	BEE CAUTION	C	12 hours
	Perm-UP 3.2EC	BEE CAUTION	C	12 hours
phosmet	Imidan 70W	BEE CAUTION	W	24 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

DORMANT SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
arborvitae	<i>Thuja</i>
cedar, incense	<i>Calocedrus</i>
falsecypress	<i>Chamaecyparis</i>
Juniper	<i>Juniperus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult, egg	Mar 01	Apr 15	foliage	decline	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult, egg	Mar 01 - Apr 10	0 - 41	None Offered

Chemical Control

Comments

Signal Agricultural
Restricted Entry
Word Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

horticultural oil	Damoil	C	4 hours
	Sunspray Ultra-Fine Spray Oil	C	4 hours

Additional information on biology and control

WARNING: use of oil on blue colored conifers will cause color to change.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

JUNIPER SCALE**

Carulaspis juniperi

Page 106 (Johnson & Lyon)

Page 46 (Adams & Packauskas)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
arborvitae	<i>Thuja</i>
cedar, incense	<i>Calocedrus</i>
falsecypress	<i>Chamaecyparis</i>
Juniper	<i>Juniperus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph (crawler)	Jun 01	Jul 10	foliage	decline	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
crawler	Jun 01 - Jun 10	from - 707	plants bloom: Kousa dogwood, cranberry bush, beautybush
crawler	Jun 10 - Jun 30	- - -	Remainder of season between the beginning and end phenology
crawler	Jul 01 - Jul 10	to - 1260	plants bloom: Ceanothus americanus, Clematis jackmanii, Tilia cordata

Biological Control

Lindorus lophanthae (lady beetle - scale predator)

Cryptolaemus montrouzieri (lady beetle predator)

Chrysoperla sp. (green lacewing - predator)

Chilocorus stigma (lady beetle - predator)

Comments

Available commercially

Available commercially; occurs naturally

Available commercially; occurs naturally

occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Lepitect	Effective against immatures. Bee caution.	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C	12 hours
*bifenthrin	Onyx Pro	Effective against immatures. Bee caution.	W	12 hours
buprofezin	Talus 70DF	Only effective against immatures.	W	12 hours
carbaryl	Carbaryl 4L	Effective against immatures. Bee caution.	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
*deltamethrin	Suspend SC	Effective against immatures. Bee caution.	C	
*dinotefuran	Safari 20 SG	BEE CAUTION	C	12 hours
flonicamid	Aria		C	12 hours
horticultural oil	Damoil		C	4 hours
	Sunspray Ultra-Fine SprayOil	WARNING: use of oil on blue colored conifers will cause color to change.	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	Agricultural Restricted Entry Interval (REI)^
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede	<i>Only effective against immatures.</i>	W	12 hours
lambda-cyhalothrin	Demand CS	<i>Effective against immatures. Bee caution.</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>Effective against immatures. Bee caution.</i>	C	24 hours
malathion	Malathion 5 EC	<i>Effective against immatures. Bee caution.</i>	W	12 hours
	Malathion 8 Flowable	<i>Effective against immatures. Bee caution.</i>	C	12 hours
pyrethrin	PyGanic	<i>OMRI listed, effective against immatures</i>	C	12 hours
pyriproxyfen	Distance IGR	<i>Only effective against immatures.</i>	C	12 hours

Additional information on biology and control

WARNING: use of oil on blue colored conifers will cause color to change.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

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**ESA approved common name

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JUNIPER WEBWORM**

Dichomeris marginella

Page 30 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
Juniper	<i>Juniperus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult	Jun 01	Jul 31	foliage		visual inspection
larva	Jul 15	Aug 15	foliage	defoliation	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
larva	Jul 20 - Jul 31	from - 1645	plants bloom: butterfly bush, Clethra alnifolia, false spirea
larva	Aug 01 - Aug 10	to - 1917	plant bloom: Pee Gee Hydrangea blooms turn pink

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
chlorantraniliprole	Acelepryn			4 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W	24 hours
*deltamethrin	Suspend SC	BEE CAUTION	C	
*diflubenzuron	Dimilin 25W	Effective against immatures. Bee caution.	C	12 hours
indoxacarb	Provaunt	BEE CAUTION	C	
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
*permethrin	Astro	BEE CAUTION	C	12 hours
	Perm-UP 3.2EC	BEE CAUTION	C	12 hours
pyrethrin	Pyrenone		C	12 hours
spinosad	Conserve SC	Most effective against young larvae.	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE**

Host Plants: <u>Common Name</u>	<u>Scientific Name</u>
larch	<i>Larix</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
larva	Apr 15	May 15	foliage	defoliation	visual inspection
larva	Aug 15	Sep 15	foliage	defoliation	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
larva	Apr 20 - Apr 30	from - 143	plants bloom: boxelder, star magnolia, periwinkle, Norway maple
larva	May 01 - May 10	to - 363	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry
larva	Aug 20 - Aug 31	from - 2375	plant fruit in color: Viburnum dentatum
larva	Sep 10 - Sep 20	to - 2805	plants bloom: Pee Gee Hydrangea, Sevin-son Flower

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C 24 hours
	Orthene T,T & O WSP	BEE CAUTION	C 24 hours
azadirachtin	Aza-Direct		C 4 hours
	AzaGuard		C 4 hours
B. thuringiensis kurstaki	DiPel DF	<i>Most effective against young larvae.</i>	C 4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W 12 hours
	Talstar P Professional	BEE CAUTION	C 12 hours
chlorantraniliprole	Acelepryn		4 hours
*deltamethrin	Suspend SC	BEE CAUTION	C
lambda-cyhalothrin	Demand CS	BEE CAUTION	C
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C 24 hours
*permethrin	Perm-UP 3.2EC	BEE CAUTION	C 12 hours
pyrethrin	Pyrenone		C 12 hours
spinosad	Conserve SC	<i>Most effective against young larvae.</i>	C 4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

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LARCH SAWFLY***Pristiphora erichsonii*

Page 16, 18 (Johnson & Lyon)

GROWING SEASON**Apply thorough treatment only when pest stage found.**Frequency with which pest occurs: **OCCASIONAL**Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
larch	<i>Larix</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
larva	May 10	May 31	foliage	defoliation	visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
larva	May 10 - May 20	from - 192	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle
larva	May 20 - May 30	to - 299	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark

Chemical Control**Comments**

Signal **Agricultural**
Word **Restricted Entry**
Interval (REI)^

*Reference use only. NOT a label substitute.**Select the appropriate insecticide/miticide for the correct life stage of the target pest.*

acephate	Acephate 97 WDG	<i>BEE CAUTION</i>	C	24 hours
	Lepitect	<i>BEE CAUTION</i>	C	24 hours
	Orthene T,T & O WSP	<i>BEE CAUTION</i>	C	24 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
*bifenthrin	Onyx Pro	<i>BEE CAUTION</i>	W	12 hours
	Talstar P Professional	<i>BEE CAUTION</i>	C	12 hours
carbaryl	Carbaryl 4L	<i>BEE CAUTION</i>	C	12 hours
	Sevin SL	<i>BEE CAUTION</i>	C	12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	<i>Non-residential, BEE CAUTION</i>	W	24 hours
*deltamethrin	Suspend SC	<i>BEE CAUTION</i>	C	
*diflubenzuron	Dimilin 25W	<i>Effective against immatures. Bee caution.</i>	C	12 hours
*emamectin benzoate	Tree-age	<i>BEE CAUTION</i>	W	
horticultural oil	Damoil		C	4 hours
*imidacloprid	Mallet 75 WSP	<i>BEE CAUTION</i>	C	12 hours
	Merit 75WSP	<i>BEE CAUTION</i>	C	12 hours
	Xylect 2F	<i>BEE CAUTION</i>	C	
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede	<i>Only effective against immatures.</i>	W	12 hours
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
*permethrin	Perm-UP 3.2EC	<i>BEE CAUTION</i>	C	12 hours
spinosad	Conserve SC	<i>Most effective against young larvae.</i>	C	4 hours
*thiamethoxam	Meridian 0.33G	<i>BEE CAUTION</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

DORMANT SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **STEMS 4-12 MM**

Host Plants: Common Name	Scientific Name
apple	<i>Malus</i>
beech	<i>Fagus</i>
birch	<i>Betula</i>
cherry, black	<i>Prunus serotina</i>
cherry, flowering	<i>Prunus</i>
hackberry	<i>Celtis occidentalis</i>
hickory	<i>Carya</i>
honeylocust	<i>Gleditsia triacanthos</i>
mulberry	<i>Morus</i>
oak	<i>Quercus</i>
peach	<i>Prunus persica</i>
plum	<i>Prunus cerasifera</i>
sycamore	<i>Platanus occidentalis</i>
walnut	<i>Juglans</i>
willow	<i>Salix</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph	Mar 01	Apr 15	bark	decline	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph	Mar 01 - Apr 10	0 - 41	None Offered

Chemical Control

Comments

Signal Agricultural
Word Restricted Entry
Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

horticultural oil	Damoil	C	4 hours
	Sunspray Ultra-Fine SprayOil	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

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LARGE HICKORY LECANIUM

Eulecanium caryae

Page 364 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
apple	<i>Malus</i>
beechn	<i>Fagus</i>
birch	<i>Betula</i>
cherry, black	<i>Prunus serotina</i>
cherry, flowering	<i>Prunus</i>
hackberry	<i>Celtis occidentalis</i>
hickory	<i>Carya</i>
honeyllocust	<i>Gleditsia triacanthos</i>
mulberry	<i>Morus</i>
oak	<i>Quercus</i>
peach	<i>Prunus persica</i>
plum	<i>Prunus cerasifera</i>
sycamore	<i>Platanus occidentalis</i>
walnut	<i>Juglans</i>
willow	<i>Salix</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
nymph (crawler)	May 01	Jul 15	bark to foliage	decline	visual inspection, sticky tape
nymph	Aug 15	Oct 31	foliage to bark	decline	visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
nymph, adult	Apr 20 - Apr 30	96 - 137	plants bloom: boxelder, star magnolia, periwinkle, Norway maple
nymph, adult	May 01 - May 10	144 - 228	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry
crawler	Jun 20 - Jun 30	737 - 967	plants bloom: Rhododendron maximum, Spiraea bumalda, Philadelphus
crawler	Jul 01 - Jul 10	989 - 1196	plants bloom: Ceanothus americanus, Clematis jackmanii, Tilia cordata

Biological Control

	Comments
<i>Lindorus lophanthae</i> (lady beetle - scale predator)	Available commercially
<i>Cryptolaemus montrouzieri</i> (lady beetle predator)	Available commercially; occurs naturally
<i>Chrysoperla sp.</i> (green lacewing - predator)	Available commercially; occurs naturally
<i>Chilocorus stigma</i> (lady beetle - predator)	occurs naturally

Chemical Control

	Comments	Signal Word	Agricultural Restricted Entry Interval (REI)^
Reference use only. NOT a label substitute. Select the appropriate insecticide/miticide for the correct life stage of the target pest.			
acephate	Acephate 97 WDG	BEE CAUTION	C 24 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

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LARGE HICKORY LECANIUM

Eulecanium caryae

Page 364 (Johnson & Lyon)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
	Lepitect	<i>Effective against immatures. Bee caution.</i>	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C	12 hours
*bifenthrin	Talstar P Professional	<i>Effective against immatures. Bee caution.</i>	C	12 hours
carbaryl	Carbaryl 4L	<i>Effective against immatures. Bee caution.</i>	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	<i>Non-residential, BEE CAUTION</i>	W	24 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C	12 hours
*clothianidin	Arena .25 G		C	12 hours
*deltamethrin	Suspend SC	<i>Effective against immatures. Bee caution.</i>	C	
*dinotefuran	Safari 20 SG	BEE CAUTION	C	12 hours
horticultural oil	Damoil		C	4 hours
	Sunspray Ultra-Fine Spray Oil		C	4 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C	12 hours
	Merit 75WSP	BEE CAUTION	C	12 hours
	Xytect 2F	BEE CAUTION	C	
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede	<i>Only effective against immatures.</i>	W	12 hours
lambda-cyhalothrin	Demand CS	<i>Effective against immatures. Bee caution.</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>Effective against immatures. Bee caution.</i>	C	24 hours
malathion	Malathion 5 EC	<i>Effective against immatures. Bee caution.</i>	W	12 hours
	Malathion 8 Flowable	<i>Effective against immatures. Bee caution.</i>	C	12 hours
pyriproxyfen	Distance IGR	<i>Only effective against immatures.</i>	C	12 hours
*thiamethoxam	Meridian 0.33G	BEE CAUTION	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

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LEAFHOPPERS**

Cicadellidae

Page 412-418 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
crabapple	<i>Malus</i>
rose	<i>Rosa</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph, adult	Jun 01	Sep 01	foliage	distortion, discoloration	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph, adult	Jun 10 - Jun 20	from - 618	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn
nymph, adult	Jun 20 - Aug 10	to - 1544	Remainder of season between the beginning and end phenology
nymph, adult	Aug 10 - Aug 20	to - 1544+	plant fruit in color: Mountain ash, cranberry bush

Biological Control

Chrysoperla sp. (green lacewing - predator)

Comments

Available commercially; occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C 24 hours
	Orthene T,T & O WSP	BEE CAUTION	C 24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C 12 hours
azadirachtin	Aza-Direct		C 4 hours
	AzaGuard		C 4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W 12 hours
	Talstar P Professional	BEE CAUTION	C 12 hours
buprofezin	Talus 70DF	Only effective against immatures.	W 12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C 12 hours
	Sevin SL	BEE CAUTION	C 12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W 24 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C 12 hours
*clothianidin	Arena .25 G		C 12 hours
*deltamethrin	Suspend SC	BEE CAUTION	C
*dinotefuran	Safari 20 SG	BEE CAUTION	C 12 hours
*fenpropathrin	Tame 2.4EC	BEE CAUTION	W 24 hours
fenpyroximate	Akari 5SC		W 12 hours
flonicamid	Aria		C 12 hours
horticultural oil	Damoil		C 4 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C 12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	Agricultural Restricted Entry Interval (REI)^
	Merit 75WSP	BEE CAUTION	C	12 hours
	Xytect 2F	BEE CAUTION	C	
indoxacarb	Provaunt	BEE CAUTION	C	
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
malathion	Malathion 5 EC	BEE CAUTION	W	12 hours
	Malathion 8 Flowable	BEE CAUTION	C	12 hours
*permethrin	Astro	BEE CAUTION	C	12 hours
phosmet	Imidan 70W	BEE CAUTION	W	24 hours
pyrethrin	PyGanic	OMRI listed	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

LEAFROLLERS**

Tortricidae

Page 214-218 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Host Plants: Common Name

Scientific Name

Azalea	<i>Azalea</i>
burning bush, winged euonymus	<i>Euonymus alatus</i>
chokecherry	<i>Prunus virginiana</i>
crabapple	<i>Malus</i>
elm	<i>Ulmus</i>
Ginkgo	<i>Ginkgo biloba</i>
honeylocust	<i>Gleditsia triacanthos</i>
larch	<i>Larix</i>
maple	<i>Acer</i>
smoketree	<i>Cotinus</i>
spirea	<i>Spiraea</i>
spruce	<i>Picea</i>

Chemical Control

Comments

Signal Word

Agricultural Restricted Entry Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

acephate	Lepitect	<i>BEE CAUTION</i>	C	24 hours
chlorantraniliprole	Acelepryn			4 hours
*chlorpyrifos	Chlorpyrifos 4E AG	<i>Non-residential, BEE CAUTION</i>	W	24 hours
indoxacarb	Provaunt	<i>BEE CAUTION</i>	C	
*permethrin	Astro	<i>BEE CAUTION</i>	C	12 hours
	Perm-UP 3.2EC	<i>BEE CAUTION</i>	C	12 hours
pyrethrin	PyGanic	<i>OMRI listed</i>	C	12 hours
	Pyrenone		C	12 hours

Additional information on biology and control

See under specific leafroller: fruitree leafroller, obliquebanded leafroller, redbanded leafroller

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**Part of plant to treat: **STEM, TRUNK**

Host Plants: Common Name	Scientific Name
apple	<i>Malus</i>
ash	<i>Fraxinus</i>
beech	<i>Fagus</i>
cherry, flowering	<i>Prunus</i>
chestnut, hybrids	<i>Castanea</i>
elm	<i>Ulmus</i>
lilac	<i>Syringa</i>
maple	<i>Acer</i>
oak	<i>Quercus</i>
pear	<i>Pyrus calleryana</i>
plum	<i>Prunus cerasifera</i>
poplar or aspen	<i>Populus</i>
quince, flowering	<i>Chaenomeles</i>
serviceberry, shadbush	<i>Amelanchier</i>
walnut	<i>Juglans</i>
willow	<i>Salix</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
exit hole(s), frass	May 01	Nov 01	trunk	dieback, tree death	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
larva, pupa	May 01 - May 10	144 - 228	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry
larva, pupa	May 10 - May 20	228 - 311	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle
larva	May 20 - Sep 30	311 - 2862	rest of season

Biological Control

	<u>Comments</u>
<i>Steinernema feltiae</i> (nematode)	Available commercially
<i>Steinernema carpocapsae</i> (nematode)	Available commercially

Non Chemical Control

Remove and destroy badly infested branch & tree parts.

In specimen trees remove & destroy insect or use a borer paste.

Chemical Control

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
<i>Reference use only. NOT a label substitute.</i>			
<i>Select the appropriate insecticide/miticide for the correct life stage of the target pest.</i>			
*bifenthrin	Onyx Pro	BEE CAUTION	W 12 hours
	Talstar P Professional	BEE CAUTION	C 12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

LEOPARD MOTH**

Zeuzera pyrina

Page 254 (Johnson & Lyon)

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

***restricted use pesticide**

****ESA approved common name**

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **STEM**

<u>Host Plants: Common Name</u>	<u>Scientific Name</u>
cherry, black	<i>Prunus serotina</i>
peach	<i>Prunus persica</i>
plum	<i>Prunus cerasifera</i>
serviceberry, shadbush	<i>Amelanchier</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult (clearwing moth)	May 20	Jun 30	bark, foliage		pheromone traps
larva (exit hole, frass filled jelly)	Jul 01	Sep 30	trunk	dieback, tree death	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
larva	Jun 01 - Jun 10	437 - 563	plants bloom: Kousa dogwood, cranberry bush, beautybush
larva	Jun 10 - Jul 20	563 - 1417	Remainder of season between the beginning and end phenology
larva	Jul 20 - Jul 31	1417 - 1673	plants bloom: butterfly bush, Clethra alnifolia, false spirea

Biological Control

	<u>Comments</u>
<i>Steinernema feltiae</i> (nematode)	Available commercially
<i>Steinernema carpocapsae</i> (nematode)	Available commercially

Chemical Control

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
<i>Reference use only. NOT a label substitute.</i>			
<i>Select the appropriate insecticide/miticide for the correct life stage of the target pest.</i>			
*abamectin	Mauget Abacide 2	BEE CAUTION	W
*bifenthrin	Onyx Pro	BEE CAUTION	W 12 hours
	Talstar P Professional	BEE CAUTION	C 12 hours
chlorantraniliprole	Acelepryn		4 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W 24 hours
*emamectin benzoate	Tree-age	BEE CAUTION	W
*permethrin	Astro	BEE CAUTION	C 12 hours
	Perm-UP 3.2EC	BEE CAUTION	C 12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

LILAC BORER / ASH BORER**

Podosesia syringae

Page 260 (Johnson & Lyon)

Page 18 (Adams & Packauskas)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **STEM, TRUNK**

<u>Host Plants: Common Name</u>	<u>Scientific Name</u>
lilac	<i>Syringa</i>
mountain ash, European	<i>Sorbus aucuparia</i>
privet	<i>Ligustrum</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult (clearwing moth)	May 01	Aug 01	bark, foliage		pheromone traps
exit hole(s), frass	Jun 01	Sep 30	trunk	dieback, tree death	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
larva	May 01 - May 10	from - 148	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry
larva	May 10 - Jun 10	- -	Remainder of season between the beginning and end phenology
larva	Jun 10 - Jun 20	to - 400+	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn

Biological Control

Steinernema feltiae (nematode)

Steinernema carpocapsae (nematode)

Comments

Available commercially

Available commercially

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*bifenthrin	Onyx Pro	BEE CAUTION	W 12 hours
	Talstar P Professional	BEE CAUTION	C 12 hours
chlorantraniliprole	Acelepryn		4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
Deutzia	<i>Deutzia</i>
Euonymus	<i>Euonymus</i>
lilac	<i>Syringa</i>
privet	<i>Ligustrum</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult (moth)	May 10	Aug 15	foliage		visual inspection
larva	Jun 15	Sep 01	foliage	discoloration (mining)	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>		
adult, egg	May 10 - May 20	from - 246	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle		
adult	May 20 - May 31	to - 363	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark		
adult, larva	Jul 10 - Jul 20	from - 1388	plants bloom: Abelia, golden rain tree, sourwood		
adult, larva	Jul 20 - Jul 31	- -	plants bloom: butterfly bush, Clethra alnifolia, false spirea		
adult, larva	Aug 01 - Aug 10	to - 1644+	plant bloom: Pee Gee Hydrangea blooms turn pink		

Chemical Control**Comments****Signal Word****Agricultural Restricted Entry Interval (REI)^***Reference use only. NOT a label substitute.**Select the appropriate insecticide/miticide for the correct life stage of the target pest.*

*abamectin	Mauget Abacide 2	<i>BEE CAUTION</i>	W	
acephate	Acephate 97 WDG	<i>BEE CAUTION</i>	C	24 hours
	Lepitect	<i>BEE CAUTION</i>	C	24 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
*bifenthrin	Onyx Pro	<i>BEE CAUTION</i>	W	12 hours
	Talstar P Professional	<i>BEE CAUTION</i>	C	12 hours
*diflubenzuron	Dimilin 25W	<i>Effective against immatures. Bee caution.</i>	C	12 hours
*dinotefuran	Safari 20 SG	<i>BEE CAUTION</i>	C	12 hours
*emamectin benzoate	Tree-age	<i>BEE CAUTION</i>	W	
*imidacloprid	Mallet 75 WSP	<i>BEE CAUTION</i>	C	12 hours
	Merit 75WSP	<i>BEE CAUTION</i>	C	12 hours
	Xylect 2F	<i>BEE CAUTION</i>	C	
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
*permethrin	Astro	<i>BEE CAUTION</i>	C	12 hours
	Perm-UP 3.2EC	<i>BEE CAUTION</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

LILAC LEAFMINER**

Caloptilia syringella

Page 196 (Johnson & Lyon)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

*thiamethoxam Meridian 0.33G

Comments

BEE CAUTION

Signal Agricultural
Word Restricted Entry
 Interval (REI)^

C 12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
elm	<i>Ulmus</i>
linden	<i>Tilia</i>
maple	<i>Acer</i>
oak	<i>Quercus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
larva	May 01	Jun 15	foliage	defoliation	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
larva	May 10 - May 20	from - 192	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle
larva	May 20 - May 31	to - 363	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark

Biological Control*Podisus maculiventris* (spined soldier bug - predator)**Comments**

Available commercially; occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Lepitect	BEE CAUTION	C 24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C 12 hours
azadirachtin	Aza-Direct		C 4 hours
	AzaGuard		C 4 hours
B. thuringiensis aizawai	XenTari	Most effective against young larvae.	C 4 hours
B. thuringiensis kurstaki	Biobit HP	Most effective against young larvae.	C 4 hours
*bifenthrin	DiPel DF	Most effective against young larvae.	C 4 hours
	Onyx Pro	BEE CAUTION	W 12 hours
carbaryl	Talstar P Professional	BEE CAUTION	C 12 hours
	Carbaryl 4L	BEE CAUTION	C 12 hours
chlorantraniliprole	Sevin SL	BEE CAUTION	C 12 hours
	Acelepryn		4 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C 12 hours
*deltamethrin	Suspend SC	BEE CAUTION	C
indoxacarb	Provaunt	BEE CAUTION	C
lambda-cyhalothrin	Demand CS	BEE CAUTION	C
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C 24 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

LINDEN LOOPER**

Erannis tiliaria

Page 144 (Johnson & Lyon)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	Agricultural Restricted Entry Interval (REI)^
*permethrin	Astro	<i>BEE CAUTION</i>	C	12 hours
	Perm-UP 3.2EC	<i>BEE CAUTION</i>	C	12 hours
pyrethrin	Pyrenone		C	12 hours
spinosad	Conserve SC	<i>Most effective against young larvae.</i>	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
beech	<i>Fagus</i>
cherry, black	<i>Prunus serotina</i>
lilac	<i>Syringa</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
exit hole(s), frass	May 01	Nov 01	trunk	dieback, tree death	visual inspection
adult (beetle)	Aug 20	Sep 30	bark, foliage		visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult	Aug 20 - Aug 31	from - 2271	plant fruit in color: Viburnum dentatum
adult	Sep 01 - Sep 10	- - -	plant fruit in color: sweet autumn clematis, Polygonum aubertii
adult	Sep 10 - Sep 20	to - 2805	plants bloom: Pee Gee Hydrangea, Sevin-son Flower

Biological Control

	<u>Comments</u>
<i>Steinernema feltiae</i> (nematode)	Available commercially
<i>Steinernema carpocapsae</i> (nematode)	Available commercially
<i>Heterorhabditis bacteriophora</i> (nematode)	Available commercially

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*abamectin	Mauget Abacide 2	BEE CAUTION	W
*bifenthrin	Onyx Pro	BEE CAUTION	W 12 hours
	Talstar P Professional	BEE CAUTION	C 12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C 12 hours
	Sevin SL	BEE CAUTION	C 12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W 24 hours
*clothianidin	Arena .25 G		C 12 hours
*permethrin	Astro	BEE CAUTION	C 12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

LOCUST LEAFMINER**

Odontota dorsalis

Page 190 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

<u>Host Plants: Common Name</u>	<u>Scientific Name</u>
beech	<i>Fagus</i>
birch	<i>Betula</i>
cherry, flowering	<i>Prunus</i>
elm	<i>Ulmus</i>
hawthorn	<i>Crataegus</i>
lilac	<i>Syringa</i>
oak	<i>Quercus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult (beetle)	May 01	Aug 01	foliage	defoliation	visual inspection
larva	Jun 01	Jul 20	foliage	discoloration (mining)	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult	May 20 - May 31	from - 298	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark
adult, egg	Jun 01 - Jun 10	to - 533	plants bloom: Kousa dogwood, cranberry bush, beautybush
adult	Jul 01 - Jul 10	from - 1029	plants bloom: Ceanothus americanus, Clematis jackmanii, Tilia cordata
adult	Jul 10 - Jul 20	to - 1388	plants bloom: Abelia, golden rain tree, sourwood

Chemical Control

Comments

Signal **Agricultural**
Word **Restricted Entry**
Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

*abamectin	Mauget Abacide 2	<i>BEE CAUTION</i>	W	
acephate	Acephate 97 WDG	<i>BEE CAUTION</i>	C	24 hours
	Lepitect	<i>BEE CAUTION</i>	C	24 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
*bifenthrin	Onyx Pro	<i>BEE CAUTION</i>	W	12 hours
	Talstar P Professional	<i>BEE CAUTION</i>	C	12 hours
*clothianidin + bifenthrin	Aloft GC G	<i>BEE CAUTION</i>	C	12 hours
*dinotefuran	Safari 20 SG	<i>BEE CAUTION</i>	C	12 hours
*emamectin benzoate	Tree-age	<i>BEE CAUTION</i>	W	
*fenpropathrin	Tame 2.4EC	<i>BEE CAUTION</i>	W	24 hours
*imidacloprid	Mallet 75 WSP	<i>BEE CAUTION</i>	C	12 hours
	Merit 75WSP	<i>BEE CAUTION</i>	C	12 hours
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
*permethrin	Astro	<i>BEE CAUTION</i>	C	12 hours
	Perm-UP 3.2EC	<i>BEE CAUTION</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

Comments

Signal **Agricultural**
Word **Restricted Entry**
 Interval (REI)^

pyrethrin	PyGanic	<i>OMRI listed</i>	C	12 hours
*thiamethoxam	Meridian 0.33G	<i>BEE CAUTION</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

MAGNOLIA SCALE**

Neolecanium cornuparvum

Page 354, 356 (Johnson & Lyon)

DORMANT SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **ONE AND TWO YEAR STEMS**

<u>Host Plants: Common Name</u>	<u>Scientific Name</u>
Magnolia	<i>Magnolia</i>
Wisteria	<i>Wisteria</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph	Mar 01	Apr 15	twig bark	decline	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph	Mar 01 - Apr 10	0 - 41	None Offered

Chemical Control

Comments

<u>Signal</u>	<u>Agricultural Restricted Entry</u>
<u>Word</u>	<u>Interval (REI)^</u>

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

horticultural oil	Damoil	C	4 hours
	Sunspray Ultra-Fine SprayOil	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**Part of plant to treat: **ONE AND TWO YEAR STEMS**

Host Plants: Common Name	Scientific Name
Magnolia	<i>Magnolia</i>
Wisteria	<i>Wisteria</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph (crawler)	Jul 01	Sep 30	twig bark	decline	visual inspection, sticky tape

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
crawler	Aug 10 - Aug 20	from - 2155	plant fruit in color: Mountain ash, cranberry bush
crawler	Aug 20 - Sep 10	- - -	Remainder of season between the beginning and end phenology
crawler	Sep 10 - Sep 20	to - 2800	plants bloom: Pee Gee Hydrangea, Sevin-son Flower

Biological Control*Lindorus lophanthae* (lady beetle - scale predator)*Cryptolaemus montrouzieri* (lady beetle predator)*Chilocorus stigma* (lady beetle - predator)**Comments**

Available commercially

Available commercially; occurs naturally

occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Lepitect	Effective against immatures. Bee caution.	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C	12 hours
*bifenthrin	Talstar P Professional	Effective against immatures. Bee caution.	C	12 hours
buprofezin	Talus 70DF	Only effective against immatures.	W	12 hours
carbaryl	Carbaryl 4L	Effective against immatures. Bee caution.	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W	24 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C	12 hours
*clothianidin	Arena .25 G		C	12 hours
*deltamethrin	Suspend SC	Effective against immatures. Bee caution.	C	
*dinotefuran	Safari 20 SG	BEE CAUTION	C	12 hours
flonicamid	Aria		C	12 hours
horticultural oil	Damoil		C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

MAGNOLIA SCALE**

Neolecanium cornuparvum

Page 354, 356 (Johnson & Lyon)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
	Sunspray Ultra-Fine Spray Oil		C	4 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C	12 hours
	Merit 75WSP	BEE CAUTION	C	12 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede	Only effective against immatures.	W	12 hours
lambda-cyhalothrin	Demand CS	Effective against immatures. Bee caution.	C	
*lambda-cyhalothrin	Scimitar GC	Effective against immatures. Bee caution.	C	24 hours
malathion	Malathion 5 EC	Effective against immatures. Bee caution.	W	12 hours
	Malathion 8 Flowable	Effective against immatures. Bee caution.	C	12 hours
pyrethrin	PyGanic	OMRI listed, effective against immatures	C	12 hours
pyriproxyfen	Distance IGR	Only effective against immatures.	C	12 hours
*thiamethoxam	Meridian 0.33G	BEE CAUTION	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

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*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
Magnolia	<i>Magnolia</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
adult, larva	Apr 01	Jun 01	foliage	discoloration (mining), leaf-folding	visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
adult (moth)	Apr 15 - May 15	44 - 235	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle
larva	Jun 10 - Jun 20	538 - 724	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn
larva	Jun 20 - Jun 30	724 - 940	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn

Non Chemical Control

Where feasible, remove and destroy leaves as they get mines.

Chemical Control

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
	<i>Reference use only. NOT a label substitute.</i>			
	<i>Select the appropriate insecticide/miticide for the correct life stage of the target pest.</i>			
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Lepitect	BEE CAUTION	C	24 hours
*imidacloprid	Xytext 2F	BEE CAUTION	C	
phosmet	Imidan 70W	BEE CAUTION	W	24 hours

Additional information on biology and control

This micromoth is in the family, Gracillariidae. Dark colored, 2mm long, moths with fringed wings rest with wing tips touching the surface it is on and front legs fully extended so that the head is raised. Larvae feed within the leaves of many magnolia species separating the thin papery upper epidermis from the mesophyll layer. A dark line of frass can be seen in the clear topped mines which become evident in July. Larvae will feed in a circular pattern before becoming serpentine. When small they go out to the leaf edge to get across veins. The life cycle in Connecticut is unknown. A closely related species, the aspen leaf miner, spends the winter as a moth underground. Mature larvae may drop to the ground in fall and make a pupation cell where the pupae and then adult can remain protected throughout the winter. Adult moths emerge in spring and lay eggs on young leaves. There is most likely one generation per year here. Heavily infested leaves will brown and drop early from the tree.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

MAPLE APHIDS

Periphyllus spp.

Page 302 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

Host Plants: <u>Common Name</u>	<u>Scientific Name</u>
maple	<i>Acer</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph	Jun 01	Sep 30	foliage	discoloration, leaf drop	visual inspection
adult	Jun 15	Sep 30	foliage	discoloration, leaf drop	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph, adult	Jun 20 - Jun 30	737 - 967	plants bloom: Rhododendron maximum, Spiraea bumalda, Philadelphus
nymph, adult	Jul 01 - Jul 10	989 - 1196	plants bloom: Ceanothus americanus, Clematis jackmanii, Tilia cordata
nymph, adult	Jul 10 - Jul 20	1196 - 1417	plants bloom: Abelia, golden rain tree, sourwood

Biological Control

	<u>Comments</u>
<i>Orius sp. (predator)</i>	Available commercially; occurs naturally
<i>Hippodamia convergens (lady beetle - predator)</i>	Available commercially; occurs naturally
<i>Diaeretiella rapae (wasp, aphid parasite)</i>	occurs naturally
<i>Deraeocoris nebulosus (mirid bug - predator)</i>	occurs naturally
<i>Chrysoperla sp. (green lacewing - predator)</i>	Available commercially; occurs naturally
<i>Aphidoletes aphidimyza (midge, aphid predator)</i>	Available commercially; occurs naturally
<i>Aphidius matricariae (wasp, aphid parasite)</i>	Available commercially; occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*abamectin	Mauget Abacide 2	BEE CAUTION	W
acephate	Acephate 97 WDG	BEE CAUTION	C 24 hours
	Lepitect	BEE CAUTION	C 24 hours
	Orthene T,T & O WSP	BEE CAUTION	C 24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C 12 hours
azadirachtin	Aza-Direct		C 4 hours
	AzaGuard		C 4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W 12 hours
	Talstar P Professional	BEE CAUTION	C 12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C 12 hours
	Sevin SL	BEE CAUTION	C 12 hours
chlorantraniliprole	Acelepryn		4 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W 24 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C 12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

Comments

Signal **Agricultural**
Word **Restricted Entry**
 Interval (REI)^

*clothianidin	Arena 50 WDG		C	12 hours
*deltamethrin	Suspend SC	BEE CAUTION	C	
*fenpropathrin	Tame 2.4EC	BEE CAUTION	W	24 hours
flonicamid	Aria		C	12 hours
horticultural oil	Damoil		C	4 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C	12 hours
	Merit 75WSP	BEE CAUTION	C	12 hours
	Xytect 2F	BEE CAUTION	C	
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
malathion	Malathion 5 EC	BEE CAUTION	W	12 hours
	Malathion 8 Flowable	BEE CAUTION	C	12 hours
*permethrin	Astro	BEE CAUTION	C	12 hours
pymetrozine	Endeavor		C	12 hours
pyrethrin	PyGanic	OMRI listed	C	12 hours
	Pyrenone		C	12 hours
*thiamethoxam	Meridian 0.33G	BEE CAUTION	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

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MAPLE BLADDERGALL MITE**

Vasates quadripedes

Page 482 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **BUD, YOUNG FOLIAGE**

<u>Host Plants: Common Name</u>	<u>Scientific Name</u>
maple	<i>Acer</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
all stages	Apr 20	Sep 30	foliage	distortion	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult	Apr 20 - Apr 30	58 - 148	plants bloom: boxelder, star magnolia, periwinkle, Norway maple
adult, immature	May 01 - May 10	from - 98	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry
adult, immature	May 10 - May 20	to - 155	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
carbaryl	Carbaryl 4L	<i>BEE CAUTION</i>	C	12 hours
	Sevin SL	<i>BEE CAUTION</i>	C	12 hours
fenazaquin	Magus	<i>BEE CAUTION</i>	W	12 hours
horticultural oil	Damoil		C	4 hours
spiromesifen	Forbid 4F	<i>most effective against immature stages</i>	C	

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
maple	<i>Acer</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
larva	Jul 01	Sep 30	foliage	defoliation	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
larva	Jul 10 - Jul 20	from - 1388	plants bloom: Abelia, golden rain tree, sourwood
larva	Jul 20 - Jul 31	- - -	plants bloom: butterfly bush, Clethra alnifolia, false spirea
larva	Aug 01 - Aug 10	to - 2032	plant bloom: Pee Gee Hydrangea blooms turn pink

Chemical Control

Comments

Signal **Agricultural**
Word **Restricted Entry**
Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

azadirachtin	Aza-Direct			C	4 hours
	AzaGuard			C	4 hours
B. thuringiensis kurstaki	DiPel DF		<i>Most effective against young larvae.</i>	C	4 hours
*bifenthrin	Onyx Pro		<i>BEE CAUTION</i>	W	12 hours
	Talstar P Professional		<i>BEE CAUTION</i>	C	12 hours
carbaryl	Carbaryl 4L		<i>BEE CAUTION</i>	C	12 hours
	Sevin SL		<i>BEE CAUTION</i>	C	12 hours
chlorantraniliprole	Acelepryn				4 hours
*deltamethrin	Suspend SC		<i>BEE CAUTION</i>	C	
lambda-cyhalothrin	Demand CS		<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC		<i>BEE CAUTION</i>	C	24 hours
*permethrin	Perm-UP 3.2EC		<i>BEE CAUTION</i>	C	12 hours
pyrethrin	Pyrenone			C	12 hours
spinosad	Conserve SC		<i>Most effective against young larvae.</i>	C	4 hours

Additional information on biology and control

This page may contain additional information in the future.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

MASKELL SCALE

Lepidosaphes pallida

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **BASE OF NEEDLES**

<u>Host Plants: Common Name</u>	<u>Scientific Name</u>
arborvitae	<i>Thuja</i>
cryptomeria	<i>Cryptomeria</i>
falsecypress	<i>Chamaecyparis</i>
Juniper	<i>Juniperus</i>
pine	<i>Pinus</i>
spruce	<i>Picea</i>
umbrella pine	<i>Sciadopitys verticillata</i>
yew	<i>Taxus</i>

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
crawler	Jun 01 - Jul 30	408 - 1659	

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	<i>BEE CAUTION</i>	C	24 hours
	Lepitect	<i>Effective against immatures. Bee caution.</i>	C	24 hours
*bifenthrin	Onyx Pro	<i>Effective against immatures. Bee caution.</i>	W	12 hours
*dinotefuran	Safari 20 SG	<i>BEE CAUTION</i>	C	12 hours
flonicamid	Aria		C	12 hours
pyrethrin	PyGanic	<i>OMRI listed, effective against immatures</i>	C	12 hours

Additional information on biology and control

The life history of this scale is not well known. This scale is thought to overwinter as adult females. Eggs are laid in late March with crawlers present from July to November. Adults emerge in mid-August.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **RARE**Part of plant to treat: **FOLIAGE-TWIGS**

Host Plants: Common Name	Scientific Name
pine	<i>Pinus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph	May 15	Jul 01	new growth	minor distortion and discoloration, spittle	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph	May 20 - May 31	311 - 423	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark
nymph	Jun 01 - Aug 20	437 - 2173	Remainder of season between the beginning and end phenology

Chemical Control**Comments**

Signal **Agricultural**
Word **Restricted Entry**
 Interval (REI)^

*Reference use only. NOT a label substitute.**Select the appropriate insecticide/miticide for the correct life stage of the target pest.*

azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
carbaryl	Carbaryl 4L	<i>BEE CAUTION</i>	C	12 hours
	Sevin SL	<i>BEE CAUTION</i>	C	12 hours
horticultural oil	Damoil		C	4 hours
*imidacloprid	Merit 75WSP	<i>BEE CAUTION</i>	C	12 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
pyrethrin	Pyrenone		C	12 hours
*thiamethoxam	Meridian 0.33G	<i>BEE CAUTION</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

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*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

MIMOSA WEBWORM**

Homadaula anisocentra

Page p 180 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
honeylocust	<i>Gleditsia triacanthos</i>
mimosa	<i>Albizia</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult (moth)	May 30	Jun 30			visual inspection
adult, egg	Jun 15	Jul 15	foliage		visual inspection
larva (caterpillar)	Jul 01	Sep 30	foliage	defoliation, webbing	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
larva (caterpillar)	Jul 01 - Sep 30	960 - 2850	

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
azadirachtin	Aza-Direct	<i>Only effective against immatures.</i>	C	4 hours
B. thuringiensis kurstaki	Biobit HP	<i>Most effective against young larvae.</i>	C	4 hours
*bifenthrin	Talstar P Professional	<i>BEE CAUTION</i>	C	12 hours
carbaryl	Carbaryl 4L	<i>Only effective against immatures.</i>	C	12 hours
chlorantraniliprole	Acelepryn	<i>Only effective against immatures.</i>		4 hours
*chlorpyrifos	Chlorpyrifos 4E AG	<i>Non-residential, BEE CAUTION</i>	W	24 hours
*permethrin	Astro	<i>BEE CAUTION</i>	C	12 hours
	Perm-UP 3.2EC	<i>BEE CAUTION</i>	C	12 hours
pyrethrin	Pyrenone		C	12 hours

Additional information on biology and control

The mimosa webworm overwinters as a pupa in cracks and crevices of bark and in debris on the ground. The thornless honeylocust cultivar 'Sunburst' is highly susceptible. There may be two generations per year in Connecticut.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
ash	<i>Fraxinus</i>
mountain ash, European	<i>Sorbus aucuparia</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
larva	Jun 01	Jul 15	foliage	defoliation	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
larva	Jun 01 - Jun 10	from - 448	plants bloom: Kousa dogwood, cranberry bush, beautybush
larva	Jun 10 - Jun 20	- - -	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn
larva	Jun 20 - Jun 30	to - 707+	plants bloom: Rhododendron maximum, Spiraea bumalda, Philadelphus

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Lepitect	BEE CAUTION	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
*bifenthrin	Talstar P Professional	BEE CAUTION	C	12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W	24 hours
*deltamethrin	Suspend SC	BEE CAUTION	C	
*diflubenzuron	Dimilin 25W	Effective against immatures. Bee caution.	C	12 hours
*emamectin benzoate	Tree-age	BEE CAUTION	W	
horticultural oil	Damoil		C	4 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C	12 hours
	Merit 75WSP	BEE CAUTION	C	12 hours
	Xytect 2F	BEE CAUTION	C	
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede	Only effective against immatures.	W	12 hours
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
*permethrin	Perm-UP 3.2EC	BEE CAUTION	C	12 hours
spinosad	Conserve SC	Most effective against young larvae.	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

MOUNTAIN ASH SAWFLY**

Pristiphora geniculata

Page 128, 286 (Johnson & Lyon)

Page 29 (Adams & Packauskas)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

Comments

Signal Agricultural
Word Restricted Entry
 Interval (REI)^

*thiamethoxam	Meridian 0.33G	BEE CAUTION	C	12 hours
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Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

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GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **NEW SHOOTS**

Host Plants: Common Name	Scientific Name
pine	<i>Pinus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
larva	May 01	Jun 20	new shoots	distortion, discoloration	visual inspection
adult	Jul 01	Sep 01	foliage		pheromone traps

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
larva	May 01 - May 10	144 - 228	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry
larva	May 10 - May 20	228 - 311	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle
larva	May 20 - May 31	from - 311	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark
larva	Jun 10 - Jun 20	to - 737	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn
adult	Jul 20 - Jul 31	from - 1417	plants bloom: butterfly bush, Clethra alnifolia, false spirea
adult, larva	Aug 01 - Aug 10	to - 1933	plant bloom: Pee Gee Hydrangea blooms turn pink

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

<u>Chemical Control</u>	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*abamectin	Mauget Abacide 2	BEE CAUTION	W
acephate	Acephate 97 WDG	BEE CAUTION	C 24 hours
	Lepitect	BEE CAUTION	C 24 hours
	Orthene T,T & O WSP	BEE CAUTION	C 24 hours
azadirachtin	Aza-Direct		C 4 hours
	AzaGuard		C 4 hours
*bifenthrin	Talstar P Professional	BEE CAUTION	C 12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C 12 hours
	Sevin SL	BEE CAUTION	C 12 hours
	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W 24 hours
*deltamethrin	Suspend SC	BEE CAUTION	C
*diflubenzuron	Dimilin 25W	Effective against immatures. Bee caution.	C 12 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C 12 hours
	Merit 75WSP	BEE CAUTION	C 12 hours
lambda-cyhalothrin	Demand CS	BEE CAUTION	C
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C 24 hours
*permethrin	Astro	BEE CAUTION	C 12 hours
	Perm-UP 3.2EC	BEE CAUTION	C 12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

NANTUCKET PINE TIP MOTH**

Rhyacionia frustrana

Page 48, 50 (Johnson & Lyon)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	Agricultural Restricted Entry Interval (REI)^
pyrethrin	Pyrenone		C	12 hours
spinosad	Conserve SC	<i>Most effective against young larvae.</i>	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
holly	<i>Ilex</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
adult (fly)	May 01	Jun 15	foliage	small leaf holes	visual inspection, sticky cards
larva	Jul 01	Sep 30	foliage	discoloration (mining)	visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
adult	May 10 - May 20	192 - 298	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle
larva	Jul 01 - Jul 10	1029 - 1266	plants bloom: Ceanothus americanus, Clematis jackmanii, Tilia cordata

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		Comments	Signal Word	Agricultural Restricted Entry Interval (REI)^
*abamectin	Mauget Abacide 2	BEE CAUTION	W	
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Lepitect	BEE CAUTION	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C	12 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
*emamectin benzoate	Tree-age	BEE CAUTION	W	
*fenprothrin	Tame 2.4EC	BEE CAUTION	W	24 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C	12 hours
	Merit 75WSP	BEE CAUTION	C	12 hours
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
*permethrin	Astro	BEE CAUTION	C	12 hours
	Perm-UP 3.2EC	BEE CAUTION	C	12 hours
spinosad	Conserve SC	Most effective against young larvae.	C	4 hours
*thiamethoxam	Meridian 0.33G	BEE CAUTION	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

NORWAY SPRUCE SHOOT GALL MIDGE

Piceacecis abietiperda

GROWING SEASON

Apply thorough treatment only when pest stage found.

Host Plants: Common Name

spruce, Norway

Scientific Name

Picea abies

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
	Jan 01	Dec 31	terminal shoots	distortion, gall	visual inspection

Additional information on biology and control

The Norway spruce shoot gall midge, a formerly European species, was found in Fairfield County, Connecticut in 2011. Damaged specimens have been brought in from Tolland County as well. Lorraine Graney, Diagnostician, Bartlett Tree Service, reported getting damage specimens from throughout New England, New York and New Jersey. Larvae overwinter in galls. Adults emerge in early spring, mate and lay eggs on twigs or in bud scales. Chewing larvae burrow into stem tissue, causing a bending of the stem or swelling of the base of the bud. Galls, while communal, contain only one larva. Tip dieback over several years can cause severe injury and even tree death. Research is needed on effective management. It is possible that insecticide sprays timed for application during adult activity could lessen the effect of this pest.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
oak	<i>Quercus</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
larva	Jun 01	Jul 01	foliage	discoloration (mining)	visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
larva, ?adult	Jun 01 - Jun 10	from - 533	plants bloom: Kousa dogwood, cranberry bush, beautybush
larva, ?adult	Jun 10 - Jun 20	- - -	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn
larva, ?adult	Jun 20 - Jun 30	to - 912	plants bloom: Rhododendron maximum, Spiraea bumalda, Philadelphus

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*abamectin	Mauget Abacide 2	BEE CAUTION	W	
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Lepitect	BEE CAUTION	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
*diflubenzuron	Dimilin 25W	Effective against immatures. Bee caution.	C	12 hours
*dinotefuran	Safari 20 SG	BEE CAUTION	C	12 hours
*emamectin benzoate	Tree-age	BEE CAUTION	W	
*fenpropathrin	Tame 2.4EC	BEE CAUTION	W	24 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C	12 hours
	Merit 75WSP	BEE CAUTION	C	12 hours
	Xylect 2F	BEE CAUTION	C	
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
*permethrin	Astro	BEE CAUTION	C	12 hours
	Perm-UP 3.2EC	BEE CAUTION	C	12 hours
pyrethrin	PyGanic	OMRI listed	C	12 hours
spinosad	Conserve SC	Most effective against young larvae.	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

OAK BLOTCH LEAFMINERS

Cameraria spp.

Page 192, 196 (Johnson & Lyon)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

Comments

Signal Agricultural
Word Restricted Entry
 Interval (REI)^

*thiamethoxam	Meridian 0.33G	BEE CAUTION	C	12 hours
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Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **RARE**Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
oak	<i>Quercus</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
adult	May 15	Sep 30	foliage	discoloration (brownish spots)	visual inspection
nymph	May 20	Sep 30	foliage	discoloration (brownish spots)	visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
adult	May 10 - May 20	from - 239	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle
egg, nymph	May 20 - May 31	to - 363	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		Comments	Signal Word	Agricultural Restricted Entry Interval (REI)^
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Lepitect	BEE CAUTION	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
chlorantraniliprole	Acelepryn			4 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W	24 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C	12 hours
*deltamethrin	Suspend SC	BEE CAUTION	C	
*dinotefuran	Safari 20 SG	BEE CAUTION	C	12 hours
*fenpropathrin	Tame 2.4EC	BEE CAUTION	W	24 hours
horticultural oil	Damoil		C	4 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C	12 hours
	Merit 75WSP	BEE CAUTION	C	12 hours
	Xylect 2F	BEE CAUTION	C	
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

OAK LACE BUG

Corythuca arcuata

Page 426 (Johnson & Lyon)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
malathion	Malathion 5 EC	<i>BEE CAUTION</i>	W	12 hours
	Malathion 8 Flowable	<i>BEE CAUTION</i>	C	12 hours
*permethrin	Astro	<i>BEE CAUTION</i>	C	12 hours
	Perm-UP 3.2EC	<i>BEE CAUTION</i>	C	12 hours
pyrethrin	PyGanic	<i>OMRI listed</i>	C	12 hours
	Pyrenone		C	12 hours
*thiamethoxam	Meridian 0.33G	<i>BEE CAUTION</i>	C	12 hours

Additional information on biology and control

The oak lace bug overwinters as an adult on or near its host. Eggs are laid on the undersides of foliage in the spring. Spikey, wingless nymphs use their piercing-sucking mouthparts to withdraw cell contents leaving yellow patches on the upper leaf surface. Shed skins and shiny, black fecal spots on the lower leaf surface can also be used to diagnose this insect. There may be multiple generations per year in Connecticut.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

DELAYED DORMANT

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
oak	<i>Quercus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
larva	Apr 01	Apr 30	opening buds, new leaves	chewed buds, small leafholes	visual inspection
larva	May 01	May 10	opening buds, new leaves	chewed buds, small leafholes	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
larva	Apr 01 - Apr 20	28 -	96 plants bloom: silver maple, Cornelian cherry, pussy willow

Chemical Control*Reference use only. NOT a label substitute.**Select the appropriate insecticide/miticide for the correct life stage of the target pest.*

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
carbaryl	Carbaryl 4L	<i>BEE CAUTION</i>	C	12 hours
	Sevin SL	<i>BEE CAUTION</i>	C	12 hours
spinosad	Conserve SC	<i>Most effective against young larvae.</i>	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

OAK LECANIUM SCALE

Parthenolecaium quercifex

Page 364 (Johnson & Lyon)

DORMANT SEASON

Apply thorough treatment only when pest stage found.

Host Plants: Common Name

Scientific Name

birch	<i>Betula</i>
hickory	<i>Carya</i>
oak	<i>Quercus</i>
sycamore	<i>Platanus occidentalis</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph, ?adult	Nov 01	Mar 31	twigs & branches have most scale	twig death	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph	Mar 01 - Apr 10	0 - 30	None Offered

Additional information on biology and control

This soft scale overwinters as a second instar on twigs. In heavy infestations twigs become dark and sticky with honeydew and the resulting sooty mold. Females are shades of brown with two humps toward one end of the body. Eggs hatch and crawlers are present in mid-July. Crawlers migrate toward one end of the body. Eggs hatch and crawlers are present in mid-July. Crawlers migrate to feed on leaves during the growing season. Second instar nymphs migrate back to twigs in the fall. There is thought to be only one generation per year in Connecticut.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

<u>Host Plants: Common Name</u>	<u>Scientific Name</u>
birch	<i>Betula</i>
hickory	<i>Carya</i>
oak	<i>Quercus</i>
sycamore	<i>Platanus occidentalis</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
crawler	Jun 15	Aug 01	stems(bark), foliage	discoloration, yellowing	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
crawler	Jul 15 - Aug 15	1272 - 2038	plants bloom: butterfly bush, Clethra alnifolia, false spirea

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Lepitect	<i>Effective against immatures. Bee caution.</i>	C	24 hours
*clothianidin + bifenthrin	Aloft GC G	<i>BEE CAUTION</i>	C	12 hours
*dinotefuran	Safari 20 SG	<i>BEE CAUTION</i>	C	12 hours
*imidacloprid	Mallet 75 WSP	<i>BEE CAUTION</i>	C	12 hours
	Xytect 2F	<i>BEE CAUTION</i>	C	
*thiamethoxam	Meridian 0.33G	<i>BEE CAUTION</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

OAK SKELETONIZER**

Bucculatrix ainssiella

Page 220 (Johnson & Lyon)

Page 30 (Adams & Packauskas)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
oak	<i>Quercus</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
larva	Jun 01	Jul 01	foliage	skeletonized leaf, defoliation	visual inspection
larva	Aug 01	Sep 01	foliage	skeletonized leaf, defoliation	visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
adult, egg	Jun 01 - Jun 10	from - 448	plants bloom: Kousa dogwood, cranberry bush, beautybush
larva	Jun 10 - Jun 20	to - 707	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn
larva	Aug 01 - Aug 10	from - 1798	plant bloom: Pee Gee Hydrangea blooms turn pink
larva	Aug 10 - Aug 20	to - 2155	plant fruit in color: Mountain ash, cranberry bush

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
B. thuringiensis kurstaki	DiPel DF	<i>Most effective against young larvae.</i>	C	4 hours
*bifenthrin	Onyx Pro	<i>BEE CAUTION</i>	W	12 hours
	Talstar P Professional	<i>BEE CAUTION</i>	C	12 hours
carbaryl	Carbaryl 4L	<i>BEE CAUTION</i>	C	12 hours
	Sevin SL	<i>BEE CAUTION</i>	C	12 hours
chlorantraniliprole	Acelepryn			4 hours
*deltamethrin	Suspend SC	<i>BEE CAUTION</i>	C	
indoxacarb	Provaunt	<i>BEE CAUTION</i>	C	
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
*permethrin	Perm-UP 3.2EC	<i>BEE CAUTION</i>	C	12 hours
pyrethrin	Pyrenone		C	12 hours
spinosad	Conserve SC	<i>Most effective against young larvae.</i>	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
oak	<i>Quercus</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
all stages	Jun 01	Sep 30	foliage	discoloration (stippling)	visual inspection, plant tapping

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
nymph	Jun 20 - Jun 30	from - 802	plants bloom: Rhododendron maximum, Spiraea bumalda, Philadelphus
nymph, adult	Jul 01 - Jul 20	- - -	Remainder of season between the beginning and end phenology
nymph, adult	Jul 20 - Jul 31	to - 2000	plants bloom: butterfly bush, Clethra alnifolia, false spirea

Biological Control*Feltiella acarisuga* (midge - spider mite predator)**Comments**

available commercially

Stethorus punctillum (lady beetle - predator)

Available commercially; occurs naturally

Phytoseiulus persimilis (predatory mite)

Available commercially; occurs naturally

Orius sp. (predator)

Available commercially; occurs naturally

Neoseiulus cucumeris (predatory mite)

Available commercially; occurs naturally

Chrysoperla sp. (green lacewing - predator)

Available commercially; occurs naturally

Chemical Control**Comments**

Signal **Agricultural**
Word **Restricted Entry**
 Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

abamectin	Avid 0.15 EC		W	12 hours
acephate	Lepitect	BEE CAUTION	C	24 hours
bifenazate	Floramite SC	BEE CAUTION	C	12 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
etoxazole	Tetrasan 5 WDG		C	12 hours
fenazaquin	Magus	BEE CAUTION	W	12 hours
hexythiazox	Hexygon DF	most effective against immature stages	C	12 hours
horticultural oil	Damoil		C	4 hours
	Sunspray Ultra-Fine Spray Oil		C	4 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
malathion	Malathion 5 EC	BEE CAUTION	W	12 hours
	Malathion 8 Flowable	BEE CAUTION	C	12 hours
pyrethrin	PyGanic	OMRI listed	C	12 hours
spiromesifen	Forbid 4F	most effective against immature stages	C	

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

OAK SPIDER MITE**

Oligonychus bicolor

Page 472, 475 (Johnson & Lyon)

Additional information on biology and control

This mite feeds on upper leaf surfaces. There are multiple generations per year.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
smoketree	<i>Cotinus</i>
spirea	<i>Spiraea</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
larva	May 01	Jun 10	foliage	distortion, defoliation	visual inspection
adult	Jun 01	Jul 01	foliage		pheromone traps

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
larva	May 01 - May 10	144 - 228	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry
larva	May 10 - Jun 10	228 - 563	Remainder of season between the beginning and end phenology
larva	Jun 01 - Jun 10	437 - 563	plants bloom: Kousa dogwood, cranberry bush, beautybush

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	<i>BEE CAUTION</i>	C	24 hours
	Lepitect	<i>BEE CAUTION</i>	C	24 hours
	Orthene T,T & O WSP	<i>BEE CAUTION</i>	C	24 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
B. thuringiensis aizawai	XenTari	<i>Most effective against young larvae.</i>	C	4 hours
B. thuringiensis kurstaki	Biobit HP	<i>Most effective against young larvae.</i>	C	4 hours
*bifenthrin	Onyx Pro	<i>BEE CAUTION</i>	W	12 hours
	Talstar P Professional	<i>BEE CAUTION</i>	C	12 hours
carbaryl	Carbaryl 4L	<i>BEE CAUTION</i>	C	12 hours
	Sevin SL	<i>BEE CAUTION</i>	C	12 hours
chlorantraniliprole	Acelepryn			4 hours
*deltamethrin	Suspend SC	<i>BEE CAUTION</i>	C	
*diflubenzuron	Dimilin 25W	<i>Effective against immatures. Bee caution.</i>	C	12 hours
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
*permethrin	Perm-UP 3.2EC	<i>BEE CAUTION</i>	C	12 hours
pyrethrin	Pyrenone		C	12 hours
spinosad	Conserve SC	<i>Most effective against young larvae.</i>	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

OLEANDER SCALE**

Aspidiotus nerii

Page 374 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **STEMS(BARK), FOLIAGE**

Host Plants: Common Name	Scientific Name
butterfly bush	<i>Buddleia</i>
Daphne	<i>Daphne</i>
privet	<i>Ligustrum</i>
redbud	<i>Cercis canadensis</i>
St. Johnswort	<i>Hypericum calycinum</i>
yucca	<i>Yucca</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
all stages	Jan 01	Dec 31	bark, foliage	decline	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
immature, adult	Jan 01 - Dec 30	NA - NA	Not applicable

Biological Control

Lindorus lophanthae (lady beetle - scale predator)

Cryptolaemus montrouzieri (lady beetle predator)

Chilocorus stigma (lady beetle - predator)

Comments

Available commercially

Available commercially; occurs naturally

occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	24 hours
	Lepitect	Effective against immatures. Bee caution.	24 hours
	Orthene T,T & O WSP	BEE CAUTION	24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	12 hours
buprofezin	Talus 70DF	Only effective against immatures.	W 12 hours
carbaryl	Carbaryl 4L	Effective against immatures. Bee caution.	C 12 hours
	Sevin SL	BEE CAUTION	C 12 hours
*deltamethrin	Suspend SC	Effective against immatures. Bee caution.	C
flonicamid	Aria		C 12 hours
horticultural oil	Damoil		C 4 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate		W 12 hours
	M-Pede	Only effective against immatures.	W 12 hours
lambda-cyhalothrin	Demand CS	Effective against immatures. Bee caution.	C
*lambda-cyhalothrin	Scimitar GC	Effective against immatures. Bee caution.	C 24 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

Chemical Control*Reference use only. NOT a label substitute.**Select the appropriate insecticide/miticide for the correct life stage of the target pest.*

<u>Chemical Control</u>		<u>Comments</u>	<u>Signal Word</u>	Agricultural Restricted Entry Interval (REI)^
malathion	Malathion 5 EC	<i>Effective against immatures. Bee caution.</i>	W	12 hours
	Malathion 8 Flowable	<i>Effective against immatures. Bee caution.</i>	C	12 hours
pyriproxyfen	Distance IGR	<i>Only effective against immatures.</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

ORANGESTRIPED OAKWORM**

Anisota senatoria

Page p. 156 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
birch	<i>Betula</i>
hickory	<i>Carya</i>
maple	<i>Acer</i>
oak	<i>Quercus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult (moth)	May 30	Jun 30			visual inspection
egg	Jun 15	Jul 15			visual inspection
larva (caterpillar)	Jul 15	Aug 15	foliage	defoliation	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
larva (caterpillar)	Jun 30 - Aug 30	940 - 2360	

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Orthene T,T & O WSP	<i>BEE CAUTION</i>	C	24 hours
azadirachtin	Aza-Direct	<i>Only effective against immatures.</i>	C	4 hours
<i>B. thuringiensis</i> kurstaki	Biobit HP	<i>Most effective against young larvae.</i>	C	4 hours
*bifenthrin	Talstar P Professional	<i>BEE CAUTION</i>	C	12 hours
chlorantraniliprole	Acelepryn	<i>Only effective against immatures.</i>		4 hours
*chlorpyrifos	Chlorpyrifos 4E AG	<i>Non-residential, BEE CAUTION</i>	W	24 hours
*clothianidin + bifenthrin	Aloft GC G	<i>BEE CAUTION</i>	C	12 hours
*deltamethrin	Suspend SC	<i>BEE CAUTION</i>	C	
*emamectin benzoate	Tree-age	<i>BEE CAUTION</i>	W	
*permethrin	Astro	<i>BEE CAUTION</i>	C	12 hours
pyrethrin	Pyrenone		C	12 hours
spinosad	Conserve SC	<i>Most effective against young larvae.</i>	C	4 hours

Additional information on biology and control

The orangestriped oakworm prefers red, pin, black and scarlet oak but will feed on white oak, hickory, birch and maple. In late summer mature, 2" long, orange and black longitudinally striped, horned larvae crawl down from the trees and pupate in the soil where they pass the winter. Rust colored moths emerge from the soil in early summer. Females can lay up to 600 bright yellow eggs on the undersides of lower leaves. This pest has been a problem in New London and Windham Counties. Stressed trees on poor soils suffer the most damage from this insect. (Jeff Page, personal communication).

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

DORMANT SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**Part of plant to treat: **STEM, TRUNK**

Host Plants: Common Name	Scientific Name
apple	<i>Malus</i>
beech	<i>Fagus</i>
birch	<i>Betula</i>
Cotoneaster	<i>Cotoneaster</i>
crabapple	<i>Malus</i>
dogwood	<i>Cornus</i>
elm	<i>Ulmus</i>
filbert or hazelnut	<i>Corylus</i>
heath	<i>Erica</i>
heather	<i>Calluna</i>
holly	<i>Ilex</i>
horsechestnut	<i>Aesculus hippocastanum</i>
Hydrangea	<i>Hydrangea</i>
lilac	<i>Syringa</i>
linden	<i>Tilia</i>
maple	<i>Acer</i>
mountain ash, European	<i>Sorbus aucuparia</i>
pear	<i>Pyrus calleryana</i>
plum	<i>Prunus cerasifera</i>
poplar or aspen	<i>Populus</i>
serviceberry, shadbush	<i>Amelanchier</i>
spirea	<i>Spiraea</i>
sycamore	<i>Platanus occidentalis</i>
tuliptree, yellow poplar	<i>Liriodendron tulipifera</i>
viburnum	<i>Viburnum</i>
walnut	<i>Juglans</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
egg	Mar 01	Apr 15	stem, trunk		visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
egg	Mar 01 - Apr 10	0 - 30	None Offered

Chemical Control

	<u>Comments</u>	<u>Signal</u>	<u>Agricultural Restricted Entry</u>
		<u>Word</u>	<u>Interval (REI)^</u>
<i>Reference use only. NOT a label substitute.</i>			
<i>Select the appropriate insecticide/miticide for the correct life stage of the target pest.</i>			
horticultural oil	Damoil	C	4 hours
	Sunspray Ultra-Fine SprayOil	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

OYSTERSHELL SCALE**

Lepidosaphes ulmi

Page 370 (Johnson & Lyon)

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

***restricted use pesticide**

****ESA approved common name**

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**Part of plant to treat: **STEM, TRUNK**

Host Plants: Common Name	Scientific Name
apple	<i>Malus</i>
beech	<i>Fagus</i>
birch	<i>Betula</i>
Cotoneaster	<i>Cotoneaster</i>
crabapple	<i>Malus</i>
dogwood	<i>Cornus</i>
elm	<i>Ulmus</i>
filbert or hazelnut	<i>Corylus</i>
heath	<i>Erica</i>
heather	<i>Calluna</i>
holly	<i>Ilex</i>
horsechestnut	<i>Aesculus hippocastanum</i>
Hydrangea	<i>Hydrangea</i>
lilac	<i>Syringa</i>
linden	<i>Tilia</i>
maple	<i>Acer</i>
mountain ash, European	<i>Sorbus aucuparia</i>
pear	<i>Pyrus calleryana</i>
plum	<i>Prunus cerasifera</i>
poplar or aspen	<i>Populus</i>
serviceberry, shadbush	<i>Amelanchier</i>
spirea	<i>Spiraea</i>
sycamore	<i>Platanus occidentalis</i>
tuliptree, yellow poplar	<i>Liriodendron tulipifera</i>
viburnum	<i>Viburnum</i>
walnut	<i>Juglans</i>
willow	<i>Salix</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph (crawler)	May 15	Jun 30	stem, trunk	decline	visual inspection, sticky tape

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
crawler	May 20 - May 31	from - 280	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark
crawler	Jun 01 - Jun 10	- - -	plants bloom: Kousa dogwood, cranberry bush, beautybush
crawler	Jun 10 - Jun 20	to - 725	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

OYSTERSHELL SCALE**

Lepidosaphes ulmi

Page 370 (Johnson & Lyon)

Biological Control

Lindorus lophanthae (lady beetle - scale predator)

Cryptolaemus montrouzieri (lady beetle predator)

Chrysoperla sp. (green lacewing - predator)

Chilocorus stigma (lady beetle - predator)

Aphytis melinus (wasp, scale parasite)

Comments

Available commercially

Available commercially; occurs naturally

Available commercially; occurs naturally

occurs naturally

Available commercially; occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

Comments

Signal **Agricultural**
Word **Restricted Entry**
 Interval (REI)^

acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Lepitect	Effective against immatures. Bee caution.	C	24 hours
acetamiprid	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
	TriStar 8.5 SL	BEE CAUTION	C	12 hours
*bifenthrin	Onyx Pro	Effective against immatures. Bee caution.	W	12 hours
	Talstar P Professional	Effective against immatures. Bee caution.	C	12 hours
buprofezin	Talus 70DF	Only effective against immatures.	W	12 hours
carbaryl	Carbaryl 4L	Effective against immatures. Bee caution.	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W	24 hours
*deltamethrin	Suspend SC	Effective against immatures. Bee caution.	C	
*dinotefuran	Safari 20 SG	BEE CAUTION	C	12 hours
flonicamid	Aria		C	12 hours
horticultural oil	Damoil		C	4 hours
	Sunspray Ultra-Fine Spray Oil		C	4 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede	Only effective against immatures.	W	12 hours
lambda-cyhalothrin	Demand CS	Effective against immatures. Bee caution.	C	
*lambda-cyhalothrin	Scimitar GC	Effective against immatures. Bee caution.	C	24 hours
malathion	Malathion 5 EC	Effective against immatures. Bee caution.	W	12 hours
	Malathion 8 Flowable	Effective against immatures. Bee caution.	C	12 hours
pyrethrin	PyGanic	OMRI listed, effective against immatures	C	12 hours
pyriproxyfen	Distance IGR	Only effective against immatures.	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **STEM, TRUNK**

Host Plants: Common Name	Scientific Name
almond, dwarf flowering	<i>Prunus glandulosa</i>
cherry, black	<i>Prunus serotina</i>
cherry, flowering	<i>Prunus</i>
cherry, purple leaf sand	<i>Prunus cistena</i>
peach	<i>Prunus persica</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
adult (clearwing moth)	Jun 01	Aug 01	foliage, trunk		pheromone traps
larva (exit hole, frass filled jelly)	Jul 01	Sep 01	lower trunk	discoloration, dieback	visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
larva	Jun 20 - Jun 30	737 - 967	plants bloom: Rhododendron maximum, Spiraea bumalda, Philadelphus
larva	Aug 01 - Aug 10	1500 - 1933	plant bloom: Pee Gee Hydrangea blooms turn pink
larva	Aug 10 - Aug 20	1933 - 2173	plant fruit in color: Mountain ash, cranberry bush

Biological Control

	Comments
<i>Steinernema feltiae</i> (nematode)	Available commercially
<i>Steinernema carpocapsae</i> (nematode)	Available commercially
<i>Heterorhabditis bacteriophora</i> (nematode)	Available commercially

Chemical Control

	Comments	Signal Word	Agricultural Restricted Entry Interval (REI)^
<i>Reference use only. NOT a label substitute.</i>			
<i>Select the appropriate insecticide/miticide for the correct life stage of the target pest.</i>			
*abamectin	Mauget Abacide 2	BEE CAUTION	W
*bifenthrin	Onyx Pro	BEE CAUTION	W 12 hours
	Talstar P Professional	BEE CAUTION	C 12 hours
chlorantraniliprole	Acelepryn		4 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W 24 hours
*emamectin benzoate	Tree-age	BEE CAUTION	W
*permethrin	Astro	BEE CAUTION	C 12 hours
	Perm-UP 3.2EC	BEE CAUTION	C 12 hours
pyrethrin	Pyrenone		C 12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

PEAR PSYLLA***Psylla pyricola*

Page 290 (Johnson & Lyon)

DORMANT SEASON**Annual cover sprays are suggested.**Frequency with which pest occurs: **ANNUAL**Part of plant to treat: **BUD, STEM**

Host Plants: Common Name	Scientific Name
pear	<i>Pyrus calleryana</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult, egg	Mar 01	Apr 15	bud, stem		visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult, egg	Mar 01 - Apr 10	0 - 41	None Offered

Chemical Control**Comments**

Signal Agricultural
Word Restricted Entry
Interval (REI)^

*Reference use only. NOT a label substitute.**Select the appropriate insecticide/miticide for the correct life stage of the target pest.*

horticultural oil	Damoil		C	4 hours
	Sunspray Ultra-Fine SprayOil		C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON**Annual cover sprays are suggested.**Frequency with which pest occurs: **ANNUAL**Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
pear	<i>Pyrus calleryana</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph, adult	May 01	Sep 30	foliage, seeds	discoloration, distortion	visual inspection, plant tapping, sticky cards

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph, adult	Mar 01 - May 10	0 - 228	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry
nymph, adult	May 10 - Sep 15	228 - 2672	rest of season

Chemical Control*Reference use only. NOT a label substitute.**Select the appropriate insecticide/miticide for the correct life stage of the target pest.*

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acetamiprid	TriStar 8.5 SL	<i>BEE CAUTION</i>	C	12 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
*bifenthrin	Talstar P Professional	<i>BEE CAUTION</i>	C	12 hours
buprofezin	Talus 70DF	<i>Only effective against immatures.</i>	W	12 hours
carbaryl	Carbaryl 4L	<i>BEE CAUTION</i>	C	12 hours
	Sevin SL	<i>BEE CAUTION</i>	C	12 hours
horticultural oil	Damoil		C	4 hours
	Sunspray Ultra-Fine Spray Oil		C	4 hours
*imidacloprid	Merit 75WSP	<i>BEE CAUTION</i>	C	12 hours
	Xytect 2F	<i>BEE CAUTION</i>	C	
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
pyrethrin	Pyrenone		C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

PEARLEAF BLISTER MITE**

Phytoptus pyri

Page 486 (Johnson & Lyon)

DORMANT SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **BUD**

Host Plants: Common Name	Scientific Name
Cotoneaster	<i>Cotoneaster</i>
pear	<i>Pyrus calleryana</i>
serviceberry, shadbush	<i>Amelanchier</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult	Mar 01	Apr 15	bud		visual inspection (magnification), plant tapping

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult	Mar 01 - Apr 10	0 - 41	as host plant buds swell

Chemical Control

Comments

Signal **Agricultural**
Word **Restricted Entry**
Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

horticultural oil	Damoil	C	4 hours
	Sunspray Ultra-Fine Spray Oil	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
Cotoneaster	<i>Cotoneaster</i>
pear	<i>Pyrus calleryana</i>
serviceberry, shadbush	<i>Amelanchier</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
all stages	May 15	Sep 30	foliage	distortion, discoloration	visual inspection (magnification), plant tapping

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
immature, adult	Jul 20 - Jul 31	1417 - 1673	plants bloom: butterfly bush, Clethra alnifolia, false spirea
immature, adult	Aug 01 - Sep 10	1700 - 2576	Remainder of season between the beginning and end phenology
immature, adult	Sep 10 - Sep 20	2576 - 2719	plants bloom: Pee Gee Hydrangea, Sevin-son Flower

Chemical Control*Reference use only. NOT a label substitute.**Select the appropriate insecticide/miticide for the correct life stage of the target pest.*

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
abamectin	Avid 0.15 EC	W	12 hours
*abamectin	Mauget Abacide 2	W	
fenazaquin	Magus	W	12 hours
fenpyroximate	Akari 5SC	W	12 hours
horticultural oil	Damoil	C	4 hours
	Sunspray Ultra-Fine Spray Oil	C	4 hours
spiromesifen	Forbid 4F	C	
	<i>most effective against immature stages</i>		

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

PINE BARK ADELGID**

Pineus strobi

Page 76, 78 (Johnson & Lyon)

Page 36 (Adams & Packauskas)

DORMANT SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **STEM, TRUNK**

Host Plants: Common Name	Scientific Name
pine	<i>Pinus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph	Mar 01	Apr 15	trunk	decline, unsightly	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
immature	Mar 01 - Apr 10	0 - 41	None Offered

Chemical Control

Comments

Signal **Agricultural**
Word **Restricted Entry**
Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

horticultural oil	Damoil		C	4 hours
	Sunspray Ultra-Fine SprayOil		C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

DELAYED DORMANT

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **STEM, TRUNK**

Host Plants: Common Name	Scientific Name
pine	<i>Pinus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph	Apr 01	Apr 20	trunk	decline, unsightly	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
immature	Apr 01 - Apr 20	28 -	96 plants bloom: silver maple, Cornelian cherry, pussy willow

Chemical Control

Comments

Signal Agricultural
Word Restricted Entry
Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

horticultural oil	Damoil	C	4 hours
	Sunspray Ultra-Fine SprayOil	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

PINE BARK ADELGID**

Pineus strobi

Page 76, 78 (Johnson & Lyon)

Page 36 (Adams & Packauskas)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **STEM, TRUNK**

Host Plants: Common Name	Scientific Name
pine	<i>Pinus</i>
pine, eastern white	<i>Pinus strobus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph	Apr 20	Jun 01	trunk	decline, unsightly	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
immature	Apr 20 - Apr 30	from - 58	plants bloom: boxelder, star magnolia, periwinkle, Norway maple
immature	May 10 - May 20	- - -	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle
immature	May 20 - May 31	to - 618	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C	12 hours
*bifenthrin	Talstar P Professional	BEE CAUTION	C	12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W	24 hours
*clothianidin	Arena .25 G		C	12 hours
*deltamethrin	Suspend SC	BEE CAUTION	C	
horticultural oil	Damoil		C	4 hours
	Sunspray Ultra-Fine Spray Oil	WARNING: use of oil on blue colored conifers will cause color to change.	C	4 hours
*imidacloprid	Merit 75WSP	BEE CAUTION	C	12 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
*thiamethoxam	Meridian 0.33G	BEE CAUTION	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
pine	<i>Pinus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
immature, adult	May 15	Jun 15	foliage	distortion	visual inspection (magnification)

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
immature	May 20 - May 31	from - 298	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark
immature	Jun 01 - Jun 10	to - 533	plants bloom: Kousa dogwood, cranberry bush, beautybush

Biological Control

Stethorus punctillum (lady beetle - predator)

Comments

Available commercially; occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
abamectin	Avid 0.15 EC	W	12 hours
*abamectin	Mauget Abacide 2	W	
carbaryl	Carbaryl 4L	C	12 hours
	Sevin SL	C	12 hours
fenazaquin	Magus	W	12 hours
horticultural oil	Damoil	C	4 hours
pyrethrin	PyGanic	C	12 hours
spiromesifen	Forbid 4F	C	

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

PINE NEEDLE SCALE**

Chionaspis pinifoliae

Page 108 (Johnson & Lyon)

Page 47 (Adams & Packauskas)

DORMANT SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
pine	<i>Pinus</i>
spruce	<i>Picea</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
egg	Mar 01	Apr 15	foliage		visual inspection (magnification)

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
egg	Mar 01 - Apr 10	0 - 41	None Offered

Chemical Control

Comments

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Signal</u>	<u>Agricultural Restricted Entry</u>
		<u>Word</u>	<u>Interval (REI)^</u>
horticultural oil	Damoil	C	4 hours
	Sunspray Ultra-Fine SprayOil	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
pine	<i>Pinus</i>
spruce	<i>Picea</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph (crawler)	May 01	Jun 15	foliage	decline	visual inspection
nymph	Jul 15	Aug 01	foliage	decline	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
crawler	May 20 - May 31	from - 298	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark
crawler, immature	Jun 01 - Jun 10	to - 448	plants bloom: Kousa dogwood, cranberry bush, beautybush
crawler	Jul 20 - Jul 31	1290 - 1917	plants bloom: butterfly bush, Clethra alnifolia, false spirea

Biological Control

Lindorus lophanthae (lady beetle - scale predator)

Cryptolaemus montrouzieri (lady beetle predator)

Chilocorus stigma (lady beetle - predator)

Comments

Available commercially

Available commercially; occurs naturally

occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C 24 hours
	Lepitect	Effective against immatures. Bee caution.	C 24 hours
	Orthene T,T & O WSP	BEE CAUTION	C 24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C 12 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W 12 hours
	Talstar P Professional	BEE CAUTION	C 12 hours
	Talstar P Professional	Effective against immatures. Bee caution.	C 12 hours
carbaryl	Carbaryl 4L	Effective against immatures. Bee caution.	C 12 hours
	Sevin SL	BEE CAUTION	C 12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W 24 hours
*deltamethrin	Suspend SC	Effective against immatures. Bee caution.	C
*dinotefuran	Safari 20 SG	BEE CAUTION	C 12 hours
*emamectin benzoate	Tree-age	BEE CAUTION	W
flonicamid	Aria		C 12 hours
horticultural oil	Damoil		C 4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

PINE NEEDLE SCALE**

Chionaspis pinifoliae

Page 108 (Johnson & Lyon)

Page 47 (Adams & Packauskas)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
	Sunspray Ultra-Fine Spray Oil	<i>WARNING: use of oil on blue colored conifers will cause color to change.</i>	C	4 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede	<i>Only effective against immatures.</i>	W	12 hours
lambda-cyhalothrin	Demand CS	<i>Effective against immatures. Bee caution.</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>Effective against immatures. Bee caution.</i>	C	24 hours
malathion	Malathion 5 EC	<i>Effective against immatures. Bee caution.</i>	W	12 hours
	Malathion 8 Flowable	<i>Effective against immatures. Bee caution.</i>	C	12 hours
pyrethrin	PyGanic	<i>OMRI listed, effective against immatures</i>	C	12 hours
pyriproxyfen	Distance IGR	<i>Only effective against immatures.</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **NEEDLES**

Host Plants: <u>Common Name</u>	<u>Scientific Name</u>
pine	<i>Pinus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult	Jun 01	Jul 01	foliage		visual inspection?
larva	Jul 01	Sep 30	foliage	discoloration (mining)	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult, egg	Jun 10 - Jun 20	from - 448	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn
adult, egg	Jun 20 - Jun 30	- - -	plants bloom: Rhododendron maximum, Spiraea bumalda, Philadelphus
larva	Jul 01 - Jul 10	to - 802+	plants bloom: Ceanothus americanus, Clematis jackmanii, Tilia cordata

Chemical Control

Comments

Signal **Agricultural**
Word **Restricted Entry**
Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

*abamectin	Mauget Abacide 2	<i>BEE CAUTION</i>	W	
acephate	Acephate 97 WDG	<i>BEE CAUTION</i>	C	24 hours
	Orthene T,T & O WSP	<i>BEE CAUTION</i>	C	24 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
*bifenthrin	Onyx Pro	<i>BEE CAUTION</i>	W	12 hours
	Talstar P Professional	<i>BEE CAUTION</i>	C	12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	<i>Non-residential, BEE CAUTION</i>	W	24 hours
*diflubenzuron	Dimilin 25W	<i>Effective against immatures. Bee caution.</i>	C	12 hours
*dinotefuran	Safari 20 SG	<i>BEE CAUTION</i>	C	12 hours
*fenpropathrin	Tame 2.4EC	<i>BEE CAUTION</i>	W	24 hours
*imidacloprid	Merit 75WSP	<i>BEE CAUTION</i>	C	12 hours
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours

Additional information on biology and control

This page may contain additional information in the future.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

PINE OYSTERSHELL SCALE

Lepidosaphes pini

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat:

Host Plants: Common Name	Scientific Name
fir	<i>Abies</i>
pine	<i>Pinus</i>
yew	<i>Taxus</i>

Chemical Control

Comments

Signal Agricultural
Word Restricted Entry
Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

acephate	Lepitect	<i>Effective against immatures. Bee caution.</i>	C	24 hours
*dinotefuran	Safari 20 SG	<i>BEE CAUTION</i>	C	12 hours

Additional information on biology and control

Not much is known about the biology of this scale. It is thought to overwinter as adult females. Two generations may occur in Connecticut with crawlers present in June and September.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **ROOT COLLAR**

Host Plants: <u>Common Name</u>	<u>Scientific Name</u>
pine	<i>Pinus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult	May 15	Sep 30	root collar	decline, girdling	visual inspection, check debris at base of tree

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult	Jun 10 - Jun 20	from - 618	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn
adult	Jun 20 - Jun 30	to - 912	plants bloom: Rhododendron maximum, Spiraea bumalda, Philadelphus

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

PINE SAWFLIES

Diprion, Neodiprion

Page 16, 18 (Johnson & Lyon)

Page 31 (Adams & Packauskas)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
pine	<i>Pinus</i>
pine, eastern white	<i>Pinus strobus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
larva	May 01	Sep 30	foliage	defoliation	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
larva	May 10 - May 20	from - 246	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle
larva	May 20 - Jul 10	- - -	Remainder of season between the beginning and end phenology
larva	Jul 10 - Jul 20	to - 1388	plants bloom: Abelia, golden rain tree, sourwood

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*abamectin	Mauget Abacide 2 <i>BEE CAUTION</i>	W	
acephate	Acephate 97 WDG <i>BEE CAUTION</i>	C	24 hours
	Lepitect <i>BEE CAUTION</i>	C	24 hours
	Orthene T,T & O WSP <i>BEE CAUTION</i>	C	24 hours
acetamiprid	TriStar 8.5 SL <i>BEE CAUTION</i>	C	12 hours
azadirachtin	Aza-Direct <i>BEE CAUTION</i>	C	4 hours
	AzaGuard <i>BEE CAUTION</i>	C	4 hours
*bifenthrin	Talstar P Professional <i>BEE CAUTION</i>	C	12 hours
carbaryl	Carbaryl 4L <i>BEE CAUTION</i>	C	12 hours
	Sevin SL <i>BEE CAUTION</i>	C	12 hours
*chlorpyrifos	Chlorpyrifos 4E AG <i>Non-residential, BEE CAUTION</i>	W	24 hours
*deltamethrin	Suspend SC <i>BEE CAUTION</i>	C	
*diflubenzuron	Dimilin 25W <i>Effective against immatures. Bee caution.</i>	C	12 hours
*dinotefuran	Safari 20 SG <i>Effective against immatures. Bee caution.</i>	C	12 hours
horticultural oil	Damoil <i>BEE CAUTION</i>	C	4 hours
	Sunspray Ultra-Fine Spray Oil <i>BEE CAUTION</i>	C	4 hours
*imidacloprid	Mallet 75 WSP <i>BEE CAUTION</i>	C	12 hours
	Merit 75WSP <i>BEE CAUTION</i>	C	12 hours
indoxacarb	Provaunt <i>BEE CAUTION</i>	C	
insecticidal soap	Des-X Insecticidal Soap Concentrate <i>Only effective against immatures.</i>	W	12 hours
	M-Pede <i>Only effective against immatures.</i>	W	12 hours
lambda-cyhalothrin	Demand CS <i>BEE CAUTION</i>	C	

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
*permethrin	Astro	BEE CAUTION	C	12 hours
	Perm-UP 3.2EC	BEE CAUTION	C	12 hours
spinosad	Conserve SC	Most effective against young larvae.	C	4 hours

Additional information on biology and control

Among the many pine sawflies in Connecticut, a common one is the white pine sawfly, *Neodiprion pinetum*. Cream colored larvae with rows of black spots and a black head capsule feed from July through August on white, red, mugo and other short needle pines. Mature larvae drop to the ground in fall and pupate in soil or plant debris through the winter. Adults emerge in spring, mate and lay eggs in pine needles.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

PINE SHOOT BEETLE

Tomicus piniperda

Page 64 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Host Plants: Common Name

Scientific Name

pine

Pinus

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
hole, frass from larva	May 01	Jun 30	trunk	borer tunnels	visual inspection
adult	Jul 01	Oct 01	stem, trunk	borer tunnels	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult (beetle)	May 01 - May 10	133 - 187	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry
adult (beetle)	May 10 - May 20	187 - 278	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle
adult (beetle)	Jul 10 - Jul 20	1162 - 1393	plants bloom: Abelia, golden rain tree, sourwood
adult (beetle)	Jul 20 - Sep 10	1393 - 2560	Remainder of season between the beginning and end phenology
adult (beetle)	Sep 10 - Sep 20	2560 - 2810	plants bloom: Pee Gee Hydrangea, Sevin-son Flower

Chemical Control

Comments

Signal **Agricultural**
Word **Restricted Entry**
Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

*clothianidin	Arena 50 WDG	<i>Do not apply to blooming plants when bees are foraging</i>	C	12 hours
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Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **STEMS AND BASE OF BUDS**

Host Plants: Common Name	Scientific Name
douglas fir	<i>Pseudotsuga menziesii</i>
fir	<i>Abies</i>
hemlock	<i>Tsuga</i>
pine	<i>Pinus</i>
spruce	<i>Picea</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph	May 01	Jun 01	stems and base of buds	discoloration, distortion, spittle	visual inspection, spittle highly visible
adult	Jun 01	Sep 30	stem, foliage	discoloration, distortion	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph	May 01 - May 10	from - 148	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry
nymph	May 10 - May 20	to - 386	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
azadirachtin	Aza-Direct	C	4 hours
	AzaGuard	C	4 hours
*bifenthrin	Onyx Pro	W	12 hours
	Talstar P Professional	C	12 hours
carbaryl	Carbaryl 4L	C	12 hours
	Sevin SL	C	12 hours
horticultural oil	Damoil	C	4 hours
*imidacloprid	Merit 75WSP	C	12 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate	W	12 hours
	M-Pede	W	12 hours
lambda-cyhalothrin	Demand CS	C	
*lambda-cyhalothrin	Scimitar GC	C	24 hours
*thiamethoxam	Meridian 0.33G	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

PINE TORTOISE SCALE**

Toumeyella parvicornis

Page 96 (Johnson & Lyon)

DORMANT SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **STEM**

Host Plants: Common Name	Scientific Name
pine	<i>Pinus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph	Apr 15	May 01	stem	decline	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph	Apr 20 - Apr 30	96 - 137	plants bloom: boxelder, star magnolia, periwinkle, Norway maple

Chemical Control

Comments

<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
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Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

horticultural oil	Damoil	C	4 hours
	Sunspray Ultra-Fine SprayOil	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

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GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **STEM**

Host Plants: Common Name	Scientific Name
pine	<i>Pinus</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
nymph (crawler)	Jun 20	Jul 15	stem	decline	visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
crawler	Jun 20 - Jun 30	618 - 1050	plants bloom: Rhododendron maximum, Spiraea bumalda, Philadelphus

Biological Control

Lindorus lophanthae (lady beetle - scale predator)
Cryptolaemus montrouzieri (lady beetle predator)
Chrysoperla sp. (green lacewing - predator)
Chilocorus stigma (lady beetle - predator)

Comments

Available commercially
Available commercially; occurs naturally
Available commercially; occurs naturally
occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Lepitect	Effective against immatures. Bee caution.	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C	12 hours
carbaryl	Carbaryl 4L	Effective against immatures. Bee caution.	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
*clothianidin	Arena .25 G		C	12 hours
*deltamethrin	Suspend SC	Effective against immatures. Bee caution.	C	
flonicamid	Aria		C	12 hours
horticultural oil	Damoil		C	4 hours
	Sunspray Ultra-Fine Spray Oil	WARNING: use of oil on blue colored conifers will cause color to change.	C	4 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C	12 hours
	Merit 75WSP	BEE CAUTION	C	12 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede	Only effective against immatures.	W	12 hours
lambda-cyhalothrin	Demand CS	Effective against immatures. Bee caution.	C	
*lambda-cyhalothrin	Scimitar GC	Effective against immatures. Bee caution.	C	24 hours
malathion	Malathion 5 EC	Effective against immatures. Bee caution.	W	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

PINE TORTOISE SCALE**

Toumeyella parvicornis

Page 96 (Johnson & Lyon)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	Agricultural Restricted Entry Interval (REI)^
	Malathion 8 Flowable	<i>Effective against immatures. Bee caution.</i>	C	12 hours
pyriproxifen	Distance IGR	<i>Only effective against immatures.</i>	C	12 hours
*thiamethoxam	Meridian 0.33G	<i>BEE CAUTION</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE**

<u>Host Plants: Common Name</u>	<u>Scientific Name</u>
pine	<i>Pinus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
larva	May 15	Jun 15	foliage	distortion, defoliation	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
larva	Apr 20 - Apr 30	from - 91	plants bloom: boxelder, star magnolia, periwinkle, Norway maple
larva	May 01 - May 10	to - 246	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry
larva	Jul 01 - Jul 10	from - 1151	plants bloom: Ceanothus americanus, Clematis jackmanii, Tilia cordata
larva	Jul 10 - Jul 20	to - 1514	plants bloom: Abelia, golden rain tree, sourwood

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	<i>BEE CAUTION</i>	C	24 hours
	Orthene T,T & O WSP	<i>BEE CAUTION</i>	C	24 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
B. thuringiensis aizawai	XenTari	<i>Most effective against young larvae.</i>	C	4 hours
B. thuringiensis kurstaki	DiPel DF	<i>Most effective against young larvae.</i>	C	4 hours
*bifenthrin	Onyx Pro	<i>BEE CAUTION</i>	W	12 hours
	Talstar P Professional	<i>BEE CAUTION</i>	C	12 hours
carbaryl	Carbaryl 4L	<i>BEE CAUTION</i>	C	12 hours
	Sevin SL	<i>BEE CAUTION</i>	C	12 hours
*deltamethrin	Suspend SC	<i>BEE CAUTION</i>	C	
*diflubenzuron	Dimilin 25W	<i>Effective against immatures. Bee caution.</i>	C	12 hours
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
pyrethrin	Pyrenone		C	12 hours
spinosad	Conserve SC	<i>Most effective against young larvae.</i>	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

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PINE WEBSPINNING SAWFLIES

Acantholyda, *Cephalcia*, *Tetralopha* spp.

Page 18, 22 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
pine	<i>Pinus</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
larva	May 01	Aug 01	foliage	defoliation	visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
larva	May 01 - Aug 01	144 - 1700	all season (when webbing found)

Chemical Control

Comments

Signal
Word **Agricultural**
Restricted Entry
Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

*abamectin	Mauget Abacide 2	<i>BEE CAUTION</i>	W	
acephate	Acephate 97 WDG	<i>BEE CAUTION</i>	C	24 hours
	Lepitect	<i>BEE CAUTION</i>	C	24 hours
	Orthene T,T & O WSP	<i>BEE CAUTION</i>	C	24 hours
acetamiprid	TriStar 8.5 SL	<i>BEE CAUTION</i>	C	12 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
carbaryl	Carbaryl 4L	<i>BEE CAUTION</i>	C	12 hours
	Sevin SL	<i>BEE CAUTION</i>	C	12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	<i>Non-residential, BEE CAUTION</i>	W	24 hours
*deltamethrin	Suspend SC	<i>BEE CAUTION</i>	C	
*diflubenzuron	Dimilin 25W	<i>Effective against immatures. Bee caution.</i>	C	12 hours
horticultural oil	Damoil		C	4 hours
	Sunspray Ultra-Fine Spray Oil		C	4 hours
*imidacloprid	Mallet 75 WSP	<i>BEE CAUTION</i>	C	12 hours
	Merit 75WSP	<i>BEE CAUTION</i>	C	12 hours
	Xytect 2F	<i>BEE CAUTION</i>	C	
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede	<i>Only effective against immatures.</i>	W	12 hours
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
*permethrin	Astro	<i>BEE CAUTION</i>	C	12 hours
spinosad	Conserve SC	<i>Most effective against young larvae.</i>	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

<u>Host Plants: Common Name</u>	<u>Scientific Name</u>
pine	<i>Pinus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
larva	Jun 15	Sep 30	foliage	defoliation	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
larva	Jun 20 - Jun 30	from - 802	plants bloom: Rhododendron maximum, Spiraea bumalda, Philadelphus
larva	Jul 01 - Jul 31	- - -	Remainder of season between the beginning and end phenology
larva	Aug 01 - Aug 10	to - 2000	plant bloom: Pee Gee Hydrangea blooms turn pink

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	<i>BEE CAUTION</i>	C	24 hours
	Lepitect	<i>BEE CAUTION</i>	C	24 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
*bifenthrin	Onyx Pro	<i>BEE CAUTION</i>	W	12 hours
	Talstar P Professional	<i>BEE CAUTION</i>	C	12 hours
carbaryl	Carbaryl 4L	<i>BEE CAUTION</i>	C	12 hours
	Sevin SL	<i>BEE CAUTION</i>	C	12 hours
chlorantraniliprole	Acelepryn			4 hours
*deltamethrin	Suspend SC	<i>BEE CAUTION</i>	C	
*diflubenzuron	Dimilin 25W	<i>Effective against immatures. Bee caution.</i>	C	12 hours
horticultural oil	Sunspray Ultra-Fine Spray Oil		C	4 hours
indoxacarb	Provaunt	<i>BEE CAUTION</i>	C	
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
*permethrin	Perm-UP 3.2EC	<i>BEE CAUTION</i>	C	12 hours
pyrethrin	Pyrenone		C	12 hours
spinosad	Conserve SC	<i>Most effective against young larvae.</i>	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

PITCH TWIG MOTH**

Petrova comstockiana

Page 72 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **RARE**

Part of plant to treat: **STEM**

Host Plants: Common Name	Scientific Name
pine	<i>Pinus</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
adult	May 15	Jul 01	stem		visual inspection?
larva	Aug 01	Nov 01	foliage, stems	distortion, discoloration	visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
adult	May 20 - May 31	198 - 707	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark
adult, egg	Jun 01 - Jun 10	198 - 707	plants bloom: Kousa dogwood, cranberry bush, beautybush
adult, egg	Jun 10 - Jun 20	198 - 707	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn

Non Chemical Control

Where feasible, cut & destroy twigs that have the pitch mass.

Chemical Control

Comments

Signal Agricultural
Word Restricted Entry
Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		Comments	Signal Word	Agricultural Restricted Entry Interval (REI)^
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
*deltamethrin	Suspend SC	BEE CAUTION	C	
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **STEMS 4-12 MM**

Host Plants: Common Name	Scientific Name
Azalea	<i>Azalea</i>
dogwood	<i>Cornus</i>
filbert or hazelnut	<i>Corylus</i>
hornbeam	<i>Carpinus caroliniana</i>
Rhododendron	<i>Rhododendron</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult	May 15	Sep 30	trunk near ground level	discoloration, dieback, tree death	visual inspection
adult (entrance hole), frass	Jun 01	Sep 30	trunk near ground level	discoloration, dieback, tree death	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult	Jun 01 - Jun 10	437 - 563	plants bloom: Kousa dogwood, cranberry bush, beautybush
adult	Jun 10 - Aug 10	563 - 1933	Remainder of season between the beginning and end phenology
adult	Aug 10 - Aug 20	1933 - 2173	plant fruit in color: Mountain ash, cranberry bush

Chemical Control

Comments

Signal **Agricultural**
Word **Restricted Entry**
Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

*bifenthrin	Onyx Pro	<i>BEE CAUTION</i>	W	12 hours
	Talstar P Professional	<i>BEE CAUTION</i>	C	12 hours
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
pyrethrin	Pyrenone		C	12 hours

Additional information on biology and control

Ambrosia beetles do not eat wood or bark. Males carry a fungus that they inoculate into the tunnels, where it grows on the walls darkening them. Both larvae and adults feed on the fungus.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

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POPLAR AND WILLOW BORER**

Cryptorhynchus lapathi

Page 268 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **TRUNK**

Host Plants: Common Name	Scientific Name
alder	<i>Alnus</i>
birch	<i>Betula</i>
poplar or aspen	<i>Populus</i>
pussywillow	<i>Salix discolor</i>
willow	<i>Salix</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
exit hole(s), frass	May 01	Sep 30	trunk	discoloration, dieback	visual inspection
adult (beetle)	Jun 15	Sep 30	foliage, trunk		visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
larva	Aug 20 - Aug 31	from - 2150	plant fruit in color: Viburnum dentatum
larva	Sep 01 - Sep 10	- - -	plant fruit in color: sweet autumn clematis, Polygonum aubertii
larva	Sep 10 - Sep 20	to - 2710	plants bloom: Pee Gee Hydrangea, Sevin-son Flower

Chemical Control

Comments

Signal **Agricultural**
Word **Restricted Entry**
Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

*abamectin	Mauget Abacide 2	<i>BEE CAUTION</i>	W	
*bifenthrin	Onyx Pro	<i>BEE CAUTION</i>	W	12 hours
	Talstar P Professional	<i>BEE CAUTION</i>	C	12 hours
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
*permethrin	Astro	<i>BEE CAUTION</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

DORMANT SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **STEM**

Host Plants: Common Name	Scientific Name
Cotoneaster	<i>Cotoneaster</i>
rose	<i>Rosa</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
egg	Mar 01	Apr 15	stem		visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
egg	Mar 01 - Apr 10	0 - 41	None Offered

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
horticultural oil	Damoil	C	4 hours
	Sunspray Ultra-Fine SprayOil	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

POTATO APHID**

Macrosiphum euphorbiae

Page 300 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **BUDS AND NEW GROWTH**

Host Plants: Common Name	Scientific Name
burning bush, winged euonymus	<i>Euonymus alatus</i>
Cotoneaster	<i>Cotoneaster</i>
crabapple	<i>Malus</i>
dogwood	<i>Cornus</i>
honeysuckle	<i>Lonicera</i>
rose	<i>Rosa</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
nymph	May 15	Sep 30	foliage, new growth	distortion, discoloration	visual inspection
adult	May 20	Sep 30	foliage, new growth	distortion, discoloration	visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
nymph, adult	Jun 20 - Jun 30	737 - 967	plants bloom: Rhododendron maximum, Spiraea bumalda, Philadelphus
nymph, adult	Jul 01 - Jul 31	989 - 1673	Remainder of season between the beginning and end phenology
nymph, adult	Aug 01 - Aug 10	1700 - 1933	plant bloom: Pee Gee Hydrangea blooms turn pink

Biological Control

	Comments
<i>Orius sp. (predator)</i>	Available commercially; occurs naturally
<i>Hippodamia convergens (lady beetle - predator)</i>	Available commercially; occurs naturally
<i>Diaeretiella rapae (wasp, aphid parasite)</i>	occurs naturally
<i>Deraeocoris nebulosus (mirid bug - predator)</i>	occurs naturally
<i>Chrysoperla sp. (green lacewing - predator)</i>	Available commercially; occurs naturally
<i>Aphidoletes aphidimyza (midge, aphid predator)</i>	Available commercially; occurs naturally
<i>Aphidius matricariae (wasp, aphid parasite)</i>	Available commercially; occurs naturally

Chemical Control

	Comments	Signal Word	Agricultural Restricted Entry Interval (REI)^
<i>Reference use only. NOT a label substitute.</i>			
<i>Select the appropriate insecticide/miticide for the correct life stage of the target pest.</i>			
*abamectin	Mauget Abacide 2	BEE CAUTION	W
acephate	Acephate 97 WDG	BEE CAUTION	C 24 hours
	Lepitect	BEE CAUTION	C 24 hours
	Orthene T,T & O WSP	BEE CAUTION	C 24 hours
	TriStar 8.5 SL	BEE CAUTION	C 12 hours
azadirachtin	Aza-Direct		C 4 hours
	AzaGuard		C 4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W 12 hours
	Talstar P Professional	BEE CAUTION	C 12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C 12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

Comments

Signal Word

Agricultural Restricted Entry Interval (REI)^

	Sevin SL	<i>BEE CAUTION</i>	C	12 hours
chlorantraniliprole	Acelepryn			4 hours
*chlorpyrifos	Chlorpyrifos 4E AG	<i>Non-residential, BEE CAUTION</i>	W	24 hours
*clothianidin + bifenthrin	Aloft GC G	<i>BEE CAUTION</i>	C	12 hours
*clothianidin	Arena 50 WDG		C	12 hours
*deltamethrin	Suspend SC	<i>BEE CAUTION</i>	C	
*fenpropathrin	Tame 2.4EC	<i>BEE CAUTION</i>	W	24 hours
flonicamid	Aria		C	12 hours
horticultural oil	Damoil		C	4 hours
*imidacloprid	Mallet 75 WSP	<i>BEE CAUTION</i>	C	12 hours
	Merit 75WSP	<i>BEE CAUTION</i>	C	12 hours
	Xytect 2F	<i>BEE CAUTION</i>	C	
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
malathion	Malathion 5 EC	<i>BEE CAUTION</i>	W	12 hours
	Malathion 8 Flowable	<i>BEE CAUTION</i>	C	12 hours
*permethrin	Astro	<i>BEE CAUTION</i>	C	12 hours
pymetrozine	Endeavor		C	12 hours
pyrethrin	PyGanic	<i>OMRI listed</i>	C	12 hours
	Pyrenone		C	12 hours
*thiamethoxam	Meridian 0.33G	<i>BEE CAUTION</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

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POTATO LEAFHOPPER**

Empoasca fabae

Page 414 (Johnson & Lyon)

Page 38 (Adams & Packauskas)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **BUDS AND NEW GROWTH**

Host Plants: Common Name	Scientific Name
birch	<i>Betula</i>
maple	<i>Acer</i>
Wisteria	<i>Wisteria</i>
witchhazel	<i>Hamamelis</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult	Jun 01	Sep 30	foliage, new growth	distortion, discoloration	visual inspection, sticky cards
nymph	Jun 15	Sep 30	foliage, new growth	distortion, discoloration	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph, adult	Jun 01 - Jun 20	from - 420	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn
nymph, adult	Jun 20 - Aug 10	- - -	Remainder of season between the beginning and end phenology
nymph, adult	Aug 10 - Aug 20	to - 2155	plant fruit in color: Mountain ash, cranberry bush

Biological Control

Chrysoperla sp. (green lacewing - predator)

Comments

Available commercially; occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C 24 hours
	Orthene T,T & O WSP	BEE CAUTION	C 24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C 12 hours
azadirachtin	Aza-Direct		C 4 hours
	AzaGuard		C 4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W 12 hours
	Talstar P Professional	BEE CAUTION	C 12 hours
buprofezin	Talus 70DF	Only effective against immatures.	W 12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C 12 hours
	Sevin SL	BEE CAUTION	C 12 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C 12 hours
*clothianidin	Arena .25 G		C 12 hours
*deltamethrin	Suspend SC	BEE CAUTION	C
*fenpropathrin	Tame 2.4EC	BEE CAUTION	W 24 hours
fenpyroximate	Akari 5SC		W 12 hours
flonicamid	Aria		C 12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

Comments

Signal **Agricultural**
Word **Restricted Entry**
 Interval (REI)^

horticultural oil	Damoil		C	4 hours
*imidacloprid	Merit 75WSP	<i>BEE CAUTION</i>	C	12 hours
indoxacarb	Provaunt	<i>BEE CAUTION</i>	C	
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
malathion	Malathion 5 EC	<i>BEE CAUTION</i>	W	12 hours
	Malathion 8 Flowable	<i>BEE CAUTION</i>	C	12 hours
phosmet	Imidan 70W	<i>BEE CAUTION</i>	W	24 hours
pyrethrin	Pyrenone		C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

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PRIVET RUST MITE

Aculus ligustri

Page 480 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Host Plants: Common Name

privet

Scientific Name

Ligustrum

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult	May 01	Nov 01	foliage	rusty discoloration, downward leaf cupping	visual inspection (magnification)
immature	May 20	Oct 15	foliage	rusty discoloration, downward leaf cupping	visual inspection (magnification)

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
all stages	May 20 - May 31	from - 298	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark
all stages	Jun 01 - Jun 10	to - 802	plants bloom: Kousa dogwood, cranberry bush, beautybush
all stages	Jul 10 - Jul 20	1266 - 1515	plants bloom: Abelia, golden rain tree, sourwood

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
abamectin	Avid 0.15 EC		W	12 hours
carbaryl	Carbaryl 4L	<i>BEE CAUTION</i>	C	12 hours
fenazaquin	Magus	<i>BEE CAUTION</i>	W	12 hours
pyrethrin	PyGanic	<i>OMRI listed</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
lilac	<i>Syringa</i>
privet	<i>Ligustrum</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult	May 15	Sep 30	foliage	discoloration, distortion	visual inspection, plant tapping
nymph	Jun 01	Sep 30	foliage	discoloration, distortion	visual inspection, plant tapping

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph, adult	May 10 - May 20	192 - 618	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle
nymph, adult	May 20 - May 31	192 - 618	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark
nymph, adult	Jun 01 - Jun 10	192 - 618	plants bloom: Kousa dogwood, cranberry bush, beautybush
nymph, adult	Jul 01 - Jul 10	1029 - 1266	plants bloom: Ceanothus americanus, Clematis jackmanii, Tilia cordata

Biological Control

Chrysoperla sp. (green lacewing - predator)

Comments

Available commercially; occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C 24 hours
	Orthene T,T & O WSP	BEE CAUTION	C 24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C 12 hours
azadirachtin	Aza-Direct		C 4 hours
	AzaGuard		C 4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W 12 hours
	Talstar P Professional	BEE CAUTION	C 12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C 12 hours
	Sevin SL	BEE CAUTION	C 12 hours
*fenpropathrin	Tame 2.4EC	BEE CAUTION	W 24 hours
flonicamid	Aria	Suppression	C 12 hours
*imidacloprid	Merit 75WSP	BEE CAUTION	C 12 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate		W 12 hours
	M-Pede		W 12 hours
lambda-cyhalothrin	Demand CS	BEE CAUTION	C
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C 24 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

PRIVET THRIPS**

Dendrothrips ornatus

Page 432 (Johnson & Lyon)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

<u>Chemical Control</u>		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
malathion	Malathion 5 EC	<i>BEE CAUTION</i>	W	12 hours
	Malathion 8 Flowable	<i>BEE CAUTION</i>	C	12 hours
spinosad	Conserve SC	<i>Most effective against young larvae.</i>	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

DORMANT SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **UNCOMMON**

Part of plant to treat: **BARK, STEM**

Host Plants: Common Name	Scientific Name
apple	<i>Malus</i>
birch	<i>Betula</i>
blueberry	<i>Vaccinium</i>
Cotoneaster	<i>Cotoneaster</i>
dogwood	<i>Cornus</i>
elm	<i>Ulmus</i>
hemlock	<i>Tsuga</i>
linden	<i>Tilia</i>
Magnolia	<i>Magnolia</i>
maple	<i>Acer</i>
oak	<i>Quercus</i>
plum	<i>Prunus cerasifera</i>
Rhododendron	<i>Rhododendron</i>
rose	<i>Rosa</i>
willow	<i>Salix</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph	Mar 01	Apr 15	bark, stem	discoloration, twig dieback	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph	Mar 15 - Apr 15	5 - 41	None Offered

Chemical Control

Comments

Signal Agricultural
Word Restricted Entry
Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

horticultural oil	Damoil	C	4 hours
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Additional information on biology and control

Putnam/Rhododendron scale is believed to be a complex of species. A bark form and a leaf form, possibly two different species, are present. Two generations are possible in Connecticut. This scale overwinters as a second instar nymph on twig bark. Adults occur in May followed by first generation crawlers in early June. These crawlers settle on bark. Second generation crawlers peak in late August. A small percentage of these settle on undersides of leaves (leaf form). The remainder settle on bark and overwinter.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

PUTNAM/RHODODENDRON SCALE

Diaspidiotus ancyclus

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **UNCOMMON**

Part of plant to treat: **BARK TO FOLIAGE**

Host Plants: Common Name	Scientific Name
apple	<i>Malus</i>
birch	<i>Betula</i>
blueberry	<i>Vaccinium</i>
Cotoneaster	<i>Cotoneaster</i>
dogwood	<i>Cornus</i>
elm	<i>Ulmus</i>
hemlock	<i>Tsuga</i>
linden	<i>Tilia</i>
Magnolia	<i>Magnolia</i>
maple	<i>Acer</i>
oak	<i>Quercus</i>
plum	<i>Prunus cerasifera</i>
Rhododendron	<i>Rhododendron</i>
rose	<i>Rosa</i>
willow	<i>Salix</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
crawler	May 01	Jun 30	bark, stem	branch dieback	visual inspection
crawler	Aug 01	Sep 30	bark, foliage	branch dieback	visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
crawler	May 15 - Jun 30	235 - 940	plants bloom: Kousa dogwood, cranberry bush, beautybush
crawler	Aug 15 - Sep 30	2038 - 2850	plant bloom: Pee Gee Hydrangea blooms turn pink

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		Comments	Signal Word	Agricultural Restricted Entry Interval (REI)^
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Lepitect	Effective against immatures. Bee caution.	C	24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C	12 hours
*bifenthrin	Talstar P Professional	Effective against immatures. Bee caution.	C	12 hours
*deltamethrin	Suspend SC	Effective against immatures. Bee caution.	C	
flonicamid	Aria		C	12 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
lambda-cyhalothrin	Demand CS	Effective against immatures. Bee caution.	C	

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

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Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

Comments

Signal **Agricultural**
Word **Restricted Entry**
 Interval (REI)^

pyriproxyfen	Distance IGR	<i>Only effective against immatures.</i>	C	12 hours
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Additional information on biology and control

Putnam/Rhododendron scale is believed to be a complex of species. A bark form and a leaf form, possibly two different species, are present. Two generations are possible in Connecticut. This scale overwinters as a second instar nymph on twig bark. Adults occur in May followed by first generation crawlers in early June. These crawlers settle on bark. Second generation crawlers peak in late August. A small percentage of these settle on undersides of leaves (leaf form). The remainder settle on bark and overwinter.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

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REDBANDED LEAFROLLER**

Argyrotaenia velutinana

Page 214 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
crabapple	<i>Malus</i>
larch	<i>Larix</i>
spruce	<i>Picea</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult	May 01	Jun 15	foliage		pheromone traps
larva	May 15	Jul 15	foliage	defoliation	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
egg, larva	May 20 - May 31	from - 298	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark
larva	Jun 01 - Jun 10	to - 618	plants bloom: Kousa dogwood, cranberry bush, beautybush

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

<u>Chemical Control</u>	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	C	24 hours
	Orthene T,T & O WSP	C	24 hours
azadirachtin	Aza-Direct	C	4 hours
	AzaGuard	C	4 hours
B. thuringiensis aizawai	XenTari	C	4 hours
B. thuringiensis kurstaki	Biobit HP	C	4 hours
	DiPel DF	C	4 hours
*bifenthrin	Onyx Pro	W	12 hours
	Talstar P Professional	C	12 hours
carbaryl	Carbaryl 4L	C	12 hours
	Sevin SL	C	12 hours
chlorantraniliprole	Acelepryn		4 hours
*deltamethrin	Suspend SC	C	
*diflubenzuron	Dimilin 25W	C	12 hours
			<i>Effective against immatures. Bee caution.</i>
*fenpropathrin	Tame 2.4EC	W	24 hours
indoxacarb	Provaunt	C	
lambda-cyhalothrin	Demand CS	C	
*lambda-cyhalothrin	Scimitar GC	C	24 hours
*permethrin	Astro	C	12 hours
	Perm-UP 3.2EC	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

REDBANDED LEAFROLLER**

Argyrotaenia velutinana
Page 214 (Johnson & Lyon)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

Comments

Signal **Agricultural**
Word **Restricted Entry**
 Interval (REI)^

pyrethrin	Pyrenone		C	12 hours
spinosad	Conserve SC	<i>Most effective against young larvae.</i>	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

REDHEADED ASH BORER

Neoclytus acuminatus

Page 278 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE**

<u>Host Plants: Common Name</u>	<u>Scientific Name</u>
ash	<i>Fraxinus</i>
beech	<i>Fagus</i>
birch	<i>Betula</i>
crabapple	<i>Malus</i>
dogwood	<i>Cornus</i>
elm	<i>Ulmus</i>
elm	<i>Ulmus</i>
hickory	<i>Carya</i>
honeylocust	<i>Gleditsia triacanthos</i>
linden	<i>Tilia</i>
maple	<i>Acer</i>
oak	<i>Quercus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult (beetle)	Mar 01	Oct 31	trunk, branch	borer tunnels	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
exit hole(s), frass	Apr 15 - May 31	44 - 395	plants bloom: boxelder, star magnolia, periwinkle, Norway maple

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*abamectin	Mauget Abacide 2	BEE CAUTION	W	
*bifenthrin	Talstar P Professional	BEE CAUTION	C	12 hours

Additional information on biology and control

Females of this ½” long, longhorned borer lay eggs on bark of weakened or recently planted trees. Reddish antennae are darker and thickened distally. The body darkens posteriorly with four yellow lateral stripes. As the common name indicates, the rounded pronotum and head are a rusty red. Larva hatch and eat through the inner bark into the summerwood cutting off nutrient and water flow in the tree. No contact is maintained with the outside so frass piles are not seen. After overwintering in the tree adults emerge in spring when red maple blooms. Young nursery stock can be attacked.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
pine	<i>Pinus</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
larva	Jun 01	Sep 01	foliage	defoliation	visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
larva	Jun 01 - Jun 10	437 - 563	plants bloom: Kousa dogwood, cranberry bush, beautybush
larva	Jun 10 - Aug 20	563 - 2173	Remainder of season between the beginning and end phenology
larva	Aug 20 - Aug 31	2173 - 2399	plant fruit in color: Viburnum dentatum

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		Comments	Signal Word	Agricultural Restricted Entry Interval (REI)^
*abamectin	Mauget Abacide 2	BEE CAUTION	W	
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Lepitect	BEE CAUTION	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C	12 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
*bifenthrin	Talstar P Professional	BEE CAUTION	C	12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W	24 hours
*deltamethrin	Suspend SC	BEE CAUTION	C	
*diflubenzuron	Dimilin 25W	Effective against immatures. Bee caution.	C	12 hours
*dinotefuran	Safari 20 SG	Effective against immatures. Bee caution.	C	12 hours
*emamectin benzoate	Tree-age	BEE CAUTION	W	
horticultural oil	Damoil		C	4 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C	12 hours
	Merit 75WSP	BEE CAUTION	C	12 hours
	Xytect 2F	BEE CAUTION	C	
insecticidal soap	Des-X Insecticidal Soap Concentrate	Only effective against immatures.	W	12 hours
	M-Pede	Only effective against immatures.	W	12 hours
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

REDHEADED PINE SAWFLY**

Neodiprion lecontei

Page 16, 18 (Johnson & Lyon)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

<u>Chemical Control</u>		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*permethrin	Astro	<i>BEE CAUTION</i>	C	12 hours
	Perm-UP 3.2EC	<i>BEE CAUTION</i>	C	12 hours
spinosad	Conserve SC	<i>Most effective against young larvae.</i>	C	4 hours
*thiamethoxam	Meridian 0.33G	<i>BEE CAUTION</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
bayberry	<i>Myrica pensylvanica</i>
poplar or aspen	<i>Populus</i>
redbud	<i>Cercis canadensis</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
larva	Jul 01	Sep 01	foliage	defoliation	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
larva	Jul 01 - Jul 10	989 - 1196	plants bloom: Ceanothus americanus, Clematis jackmanii, Tilia cordata
larva	Jul 10 - Aug 20	1196 - 2173	Remainder of season between the beginning and end phenology
larva	Aug 20 - Aug 31	2173 - 2399	plant fruit in color: Viburnum dentatum

Biological Control

Podisus maculiventris (spined soldier bug - predator)

Comments

Available commercially; occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C 24 hours
	Orthene T,T & O WSP	BEE CAUTION	C 24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C 12 hours
azadirachtin	Aza-Direct		C 4 hours
	AzaGuard		C 4 hours
B. thuringiensis aizawai	XenTari	Most effective against young larvae.	C 4 hours
B. thuringiensis kurstaki	Biobit HP	Most effective against young larvae.	C 4 hours
	DiPel DF	Most effective against young larvae.	C 4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W 12 hours
	Talstar P Professional	BEE CAUTION	C 12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C 12 hours
	Sevin SL	BEE CAUTION	C 12 hours
chlorantraniliprole	Acelepryn		4 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W 24 hours
*deltamethrin	Suspend SC	BEE CAUTION	C
*diflubenzuron	Dimilin 25W	Effective against immatures. Bee caution.	C 12 hours
indoxacarb	Provaunt	BEE CAUTION	C

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

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REDHUMPED CATERPILLAR**

Schizura concinna

Page 156 (Johnson & Lyon)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

<u>Chemical Control</u>		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
*permethrin	Astro	<i>BEE CAUTION</i>	C	12 hours
	Perm-UP 3.2EC	<i>BEE CAUTION</i>	C	12 hours
phosmet	Imidan 70W	<i>BEE CAUTION</i>	W	24 hours
pyrethrin	Pyrenone		C	12 hours
spinosad	Conserve SC	<i>Most effective against young larvae.</i>	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **STEM, TRUNK**

Host Plants: Common Name	Scientific Name
Azalea	<i>Azalea</i>
laurel, mountain	<i>Kalmia latifolia</i>
Rhododendron	<i>Rhododendron</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult (clearwing moth)	May 01	Jul 01	foliage, trunk		pheromone traps
hole, frass from larva	Jul 01	Oct 01	trunk, branch	discoloration, dieback	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
larva, ?adult	May 10 - May 20	192 - 298	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle
larva, ?adult	Jun 01 - Jun 10	from - 533	plants bloom: Kousa dogwood, cranberry bush, beautybush
larva, ?adult	Jun 10 - Jun 20	to - 707	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn

Biological Control

	<u>Comments</u>
<i>Steinernema feltiae</i> (nematode)	Available commercially
<i>Steinernema carpocapsae</i> (nematode)	Available commercially
<i>Heterorhabditis bacteriophora</i> (nematode)	Available commercially

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*abamectin	Mauget Abacide 2	BEE CAUTION	W
*bifenthrin	Onyx Pro	BEE CAUTION	W 12 hours
	Talstar P Professional	BEE CAUTION	C 12 hours
chlorantraniliprole	Acelepryn		4 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W 24 hours
*emamectin benzoate	Tree-age	BEE CAUTION	W
*permethrin	Astro	BEE CAUTION	C 12 hours
	Perm-UP 3.2EC	BEE CAUTION	C 12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

RHODODENDRON GALL MIDGE

Clinodiplosis rhododendri

Page 470 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **UPPER ROOT ZONE BEFORE BUDS EXPAND**

Host Plants: <u>Common Name</u>	<u>Scientific Name</u>
Rhododendron	<i>Rhododendron</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
larva			foliage	distortion	visual inspection (magnification)
larval damage	Jun 01	Sep 01	foliage	distortion, discoloration	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
larva	May 10 - May 20	from - 192	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle
larva	May 20 - May 31	to - 363	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
*deltamethrin	Suspend SC	BEE CAUTION	C	
*imidacloprid	Xytect 2F	BEE CAUTION	C	
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
spinosad	Conserve SC	Most effective against young larvae.	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
Azalea	<i>Azalea</i>
laurel, mountain	<i>Kalmia latifolia</i>
Rhododendron	<i>Rhododendron</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph	May 15	Sep 30	foliage	discoloration (brownish spots)	visual inspection, plant tapping
adult	Jun 01	Sep 30	foliage	discoloration (brownish spots)	visual inspection, plant tapping

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
egg, nymph	Jun 01 - Jun 10	from - 448	plants bloom: Kousa dogwood, cranberry bush, beautybush
nymph	Jun 10 - Jun 20	- - -	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn
nymph, adult?	Jun 20 - Jun 30	to - 1029	plants bloom: Rhododendron maximum, Spiraea bumalda, Philadelphus

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	C	24 hours
	Lepitect	C	24 hours
	Orthene T,T & O WSP	C	24 hours
azadirachtin	Aza-Direct	C	4 hours
	AzaGuard	C	4 hours
*bifenthrin	Onyx Pro	W	12 hours
	Talstar P Professional	C	12 hours
carbaryl	Carbaryl 4L	C	12 hours
	Sevin SL	C	12 hours
chlorantraniliprole	Acelepryn		4 hours
*chlorpyrifos	Chlorpyrifos 4E AG	W	24 hours
*clothianidin + bifenthrin	Aloft GC G	C	12 hours
*clothianidin	Arena .25 G	C	12 hours
*deltamethrin	Suspend SC	C	
*dinotefuran	Safari 20 SG	C	12 hours
*fenpropathrin	Tame 2.4EC	W	24 hours
horticultural oil	Damoil	C	4 hours
	Sunspray Ultra-Fine Spray Oil	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

RHODODENDRON LACE BUG**

Stephanitis rhododendri

Page 424 (Johnson & Lyon)

Page 38 (Adams & Packauskas)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C	12 hours
	Merit 75WSP	BEE CAUTION	C	12 hours
	Xytect 2F	BEE CAUTION	C	
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
malathion	Malathion 5 EC	BEE CAUTION	W	12 hours
	Malathion 8 Flowable	BEE CAUTION	C	12 hours
*permethrin	Astro	BEE CAUTION	C	12 hours
	Perm-UP 3.2EC	BEE CAUTION	C	12 hours
pyrethrin	PyGanic	OMRI listed	C	12 hours
	Pyrenone		C	12 hours
*thiamethoxam	Meridian 0.33G	BEE CAUTION	C	12 hours

Additional information on biology and control

The rhododendron lace bug overwinters as eggs glued along the lower midvein of foliage.

Yellowish green, wingless nymphs feed from the undersides of leaves removing chlorophyll with their piercing-sucking mouthparts. Shed skins and dark, shiny fecal spots can be diagnostic for this pest. Rounded adults are very sculptured with two lacy wings. There are multiple generations per year.

Signal words: C=Caution; W = Warning; DP = Danger Poison

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*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **NEW FOLIAGE**

Host Plants: Common Name	Scientific Name
Azalea	<i>Azalea</i>
Rhododendron	<i>Rhododendron</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
mined leaves (larva)	Jul 01	Sep 30	foliage: old, new	discoloration (mining)	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult	Aug 01 - Aug 10	1700 - 1933	plant bloom: Pee Gee Hydrangea blooms turn pink
adult, larva	Aug 10 - Sep 10	1933 - 2576	Remainder of season between the beginning and end phenology
adult, larva	Sep 10 - Sep 20	2576 - 2719	plants bloom: Pee Gee Hydrangea, Sevin-son Flower

Chemical Control

Comments

Signal **Agricultural**
Word **Restricted Entry**
Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

*abamectin	Mauget Abacide 2	<i>BEE CAUTION</i>	W	
acephate	Acephate 97 WDG	<i>BEE CAUTION</i>	C	24 hours
	Lepitect	<i>BEE CAUTION</i>	C	24 hours
	Orthene T,T & O WSP	<i>BEE CAUTION</i>	C	24 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
*bifenthrin	Onyx Pro	<i>BEE CAUTION</i>	W	12 hours
	Talstar P Professional	<i>BEE CAUTION</i>	C	12 hours
*clothianidin	Arena .25 G		C	12 hours
*diflubenzuron	Dimilin 25W	<i>Effective against immatures. Bee caution.</i>	C	12 hours
*emamectin benzoate	Tree-age	<i>BEE CAUTION</i>	W	
*fenpropathrin	Tame 2.4EC	<i>BEE CAUTION</i>	W	24 hours
*imidacloprid	Mallet 75 WSP	<i>BEE CAUTION</i>	C	12 hours
	Merit 75WSP	<i>BEE CAUTION</i>	C	12 hours
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
*permethrin	Astro	<i>BEE CAUTION</i>	C	12 hours
	Perm-UP 3.2EC	<i>BEE CAUTION</i>	C	12 hours
*thiamethoxam	Meridian 0.33G	<i>BEE CAUTION</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

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RHODODENDRON STEM BORER

Oberea myops

Page 288 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **TRUNK, STEM**

<u>Host Plants: Common Name</u>	<u>Scientific Name</u>
Azalea	<i>Azalea</i>
blueberry	<i>Vaccinium</i>
laurel, mountain	<i>Kalmia latifolia</i>
Rhododendron	<i>Rhododendron</i>
sourwood	<i>Oxydendrum arboreum</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult (beetle)	May 15	Jul 15	stem, foliage	minor leaf notching	visual inspection
hole, frass from larva	Jul 01	Sep 30	stem, trunk	discoloration, dieback	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult	May 20 - May 31	from - 298	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark
adult	Jun 01 - Jun 10	- -	plants bloom: Kousa dogwood, cranberry bush, beautybush
adult	Jun 10 - Jun 20	to - 802	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn

Chemical Control

Comments

Signal Agricultural
Word Restricted Entry
Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

*bifenthrin	Onyx Pro	<i>BEE CAUTION</i>	W	12 hours
	Talstar P Professional	<i>BEE CAUTION</i>	C	12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	<i>Non-residential, BEE CAUTION</i>	W	24 hours
*clothianidin	Arena .25 G		C	12 hours
*permethrin	Astro	<i>BEE CAUTION</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **STEM, DEVELOPING BUD**

Host Plants: Common Name	Scientific Name
rose	Rosa

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
nymph	Jun 01	Sep 30	foliage, new growth	discoloration, distortion	visual inspection
adult	Jun 15	Sep 30	foliage, new growth	discoloration, distortion	visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
nymph, adult	Jun 20 - Jun 30	737 - 967	plants bloom: Rhododendron maximum, Spiraea bumalda, Philadelphus
nymph, adult	Jul 01 - Sep 30	989 - 2862	rest of season

Biological Control

	Comments
<i>Orius sp. (predator)</i>	Available commercially; occurs naturally
<i>Hippodamia convergens (lady beetle - predator)</i>	Available commercially; occurs naturally
<i>Diaeretiella rapae (wasp, aphid parasite)</i>	occurs naturally
<i>Deraeocoris nebulosus (mirid bug - predator)</i>	occurs naturally
<i>Chrysoperla sp. (green lacewing - predator)</i>	Available commercially; occurs naturally
<i>Aphidoletes aphidimyza (midge, aphid predator)</i>	Available commercially; occurs naturally
<i>Aphidius matricariae (wasp, aphid parasite)</i>	Available commercially; occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	Comments	Signal Word	Agricultural Restricted Entry Interval (REI)^
acephate	Acephate 97 WDG	BEE CAUTION	C 24 hours
	Lepitect	BEE CAUTION	C 24 hours
	Orthene T,T & O WSP	BEE CAUTION	C 24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C 12 hours
azadirachtin	Aza-Direct		C 4 hours
	AzaGuard		C 4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W 12 hours
	Talstar P Professional	BEE CAUTION	C 12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C 12 hours
	Sevin SL	BEE CAUTION	C 12 hours
chlorantraniliprole	Acelepryn		4 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W 24 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C 12 hours
*clothianidin	Arena 50 WDG		C 12 hours
*deltamethrin	Suspend SC	BEE CAUTION	C

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

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ROSE APHID***Macrosiphum rosae*

Page 308 (Johnson & Lyon)

Chemical Control*Reference use only. NOT a label substitute.**Select the appropriate insecticide/miticide for the correct life stage of the target pest.*

		<u>Comments</u>	<u>Signal Word</u>	Agricultural Restricted Entry Interval (REI)^
*fenpropathrin	Tame 2.4EC	<i>BEE CAUTION</i>	W	24 hours
flonicamid	Aria		C	12 hours
horticultural oil	Damoil		C	4 hours
*imidacloprid	Mallet 75 WSP	<i>BEE CAUTION</i>	C	12 hours
	Merit 75WSP	<i>BEE CAUTION</i>	C	12 hours
	Xytect 2F	<i>BEE CAUTION</i>	C	
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
malathion	Malathion 5 EC	<i>BEE CAUTION</i>	W	12 hours
	Malathion 8 Flowable	<i>BEE CAUTION</i>	C	12 hours
*permethrin	Astro	<i>BEE CAUTION</i>	C	12 hours
pymetrozine	Endeavor		C	12 hours
pyrethrin	PyGanic	<i>OMRI listed</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

restricted use pesticide***ESA approved common name****^for agricultural applications only.**

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
Hydrangea	<i>Hydrangea</i>
rose	<i>Rosa</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult	Jun 01	Jul 01	foliage	defoliation	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult	Jun 01 - Jun 10	from - 488	plants bloom: Kousa dogwood, cranberry bush, beautybush
adult	Jun 10 - Jun 20	to - 802	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn

Chemical Control**Comments**

Signal Agricultural
Word Restricted Entry
Interval (REI)^

*Reference use only. NOT a label substitute.**Select the appropriate insecticide/miticide for the correct life stage of the target pest.*

azadirachtin	Aza-Direct			C	4 hours
	AzaGuard			C	4 hours
*bifenthrin	Onyx Pro		<i>BEE CAUTION</i>	W	12 hours
	Talstar P Professional		<i>BEE CAUTION</i>	C	12 hours
carbaryl	Carbaryl 4L		<i>BEE CAUTION</i>	C	12 hours
	Sevin SL		<i>BEE CAUTION</i>	C	12 hours
*chlorpyrifos	Chlorpyrifos 4E AG		<i>Non-residential, BEE CAUTION</i>	W	24 hours
pyrethrin	Pyrenone			C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

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ROSESLUG(S)*Tenthredinidae*

Page 132 (Johnson & Lyon)

GROWING SEASON**Apply thorough treatment only when pest stage found.**Frequency with which pest occurs: **OCCASIONAL**Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
rose	<i>Rosa</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
larva	May 15	Sep 01	foliage	defoliation	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
larva	May 20 - May 31	311 - 423	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark
larva	Jun 01 - Jun 30	437 - 967	Remainder of season between the beginning and end phenology
larva	Aug 10 - Aug 20	1933 - 2173	plant fruit in color: Mountain ash, cranberry bush

Chemical Control**Comments**

<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
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*Reference use only. NOT a label substitute.**Select the appropriate insecticide/miticide for the correct life stage of the target pest.*

acephate	Acephate 97 WDG	<i>BEE CAUTION</i>	C	24 hours
	Orthene T,T & O WSP	<i>BEE CAUTION</i>	C	24 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
carbaryl	Carbaryl 4L	<i>BEE CAUTION</i>	C	12 hours
	Sevin SL	<i>BEE CAUTION</i>	C	12 hours
*deltamethrin	Suspend SC	<i>BEE CAUTION</i>	C	
horticultural oil	Damoil		C	4 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
spinosad	Conserve SC	<i>Most effective against young larvae.</i>	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: OCCASIONAL

Part of plant to treat: FRUIT, BARK, FOLIAGE

Host Plants: Common Name	Scientific Name
almond, dwarf flowering	<i>Prunus glandulosa</i>
apple	<i>Malus</i>
cherry, black	<i>Prunus serotina</i>
chokeberry	<i>Aronia</i>
crabapple	<i>Malus</i>
serviceberry, shadbush	<i>Amelanchier</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
hole, frass from larva	May 01	Sep 30	trunk	discoloration, dieback	visual inspection
adult (beetle)	Jun 01	Sep 01	fruit, trunk, foliage		visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
adult	Jun 20 - Jun 30	from - 802	plants bloom: Rhododendron maximum, Spiraea bumalda, Philadelphus
adult	Jul 01 - Jul 10	- - -	plants bloom: Ceanothus americanus, Clematis jackmanii, Tilia cordata
adult	Jul 20 - Jul 31	to - 1798	plants bloom: butterfly bush, Clethra alnifolia, false spirea

Biological Control

	Comments
<i>Steinernema feltiae</i> (nematode)	Available commercially
<i>Steinernema carpocapsae</i> (nematode)	Available commercially
<i>Heterorhabditis bacteriophora</i> (nematode)	Available commercially

Chemical Control

	Comments	Signal Word	Agricultural Restricted Entry Interval (REI)^
<i>Reference use only. NOT a label substitute.</i>			
<i>Select the appropriate insecticide/miticide for the correct life stage of the target pest.</i>			
*abamectin	Mauget Abacide 2	BEE CAUTION	W
*bifenthrin	Onyx Pro	BEE CAUTION	W 12 hours
	Talstar P Professional	BEE CAUTION	C 12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W 24 hours
*clothianidin	Arena .25 G		C 12 hours
*permethrin	Astro	BEE CAUTION	C 12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

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SAN JOSE SCALE**

Quadraspidiotus perniciosus

Page 386 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **TWIGS & BRANCHES HAVE MOST SCALE**

<u>Host Plants: Common Name</u>	<u>Scientific Name</u>
apple	<i>Malus</i>
Cotoneaster	<i>Cotoneaster</i>
mulberry	<i>Morus</i>
poplar or aspen	<i>Populus</i>
privet	<i>Ligustrum</i>
smoketree	<i>Cotinus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph (crawler)	Jun 01	Sep 30	trunk	decline	visual inspection, sticky tape

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
crawler, nymph, adult	Jun 01 - Jun 10	437 - 563	plants bloom: Kousa dogwood, cranberry bush, beautybush
crawler, nymph, adult	Jun 10 - Aug 31	563 - 2399	Remainder of season between the beginning and end phenology
crawler, nymph, adult	Sep 01 - Sep 10	2418 - 2576	plant fruit in color: sweet autumn clematis, Polygonum aubertii

Biological Control

	<u>Comments</u>
<i>Lindorus lophanthae</i> (lady beetle - scale predator)	Available commercially
<i>Cryptolaemus montrouzieri</i> (lady beetle predator)	Available commercially; occurs naturally
<i>Chrysoperla sp.</i> (green lacewing - predator)	Available commercially; occurs naturally
<i>Chilocorus stigma</i> (lady beetle - predator)	occurs naturally
<i>Aphytis melinus</i> (wasp, scale parasite)	Available commercially; occurs naturally
<i>Amblyseius spp.</i> (predatory mite)	Available commercially

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C 24 hours
	Lepitect	Effective against immatures. Bee caution.	C 24 hours
	Orthene T,T & O WSP	BEE CAUTION	C 24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C 12 hours
	*bifenthrin	Onyx Pro	Effective against immatures. Bee caution.
Talstar P Professional		Effective against immatures. Bee caution.	C 12 hours
buprofezin	Talus 70DF	Only effective against immatures.	W 12 hours
carbaryl	Carbaryl 4L	Effective against immatures. Bee caution.	C 12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

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<u>Chemical Control</u>		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
<i>Reference use only. NOT a label substitute.</i>				
<i>Select the appropriate insecticide/miticide for the correct life stage of the target pest.</i>				
	Sevin SL	<i>BEE CAUTION</i>	C	12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	<i>Non-residential, BEE CAUTION</i>	W	24 hours
*deltamethrin	Suspend SC	<i>Effective against immatures. Bee caution.</i>	C	
flonicamid	Aria		C	12 hours
horticultural oil	Damoil		C	4 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede	<i>Only effective against immatures.</i>	W	12 hours
lambda-cyhalothrin	Demand CS	<i>Effective against immatures. Bee caution.</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>Effective against immatures. Bee caution.</i>	C	24 hours
malathion	Malathion 5 EC	<i>Effective against immatures. Bee caution.</i>	W	12 hours
	Malathion 8 Flowable	<i>Effective against immatures. Bee caution.</i>	C	12 hours
pyrethrin	PyGanic	<i>OMRI listed, effective against immatures</i>	C	12 hours
pyriproxyfen	Distance IGR	<i>Only effective against immatures.</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

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SASSAFRAS WEEVIL**

Odontopus calceatus

Page 210 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **RARE**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
Magnolia	<i>Magnolia</i>
Sassafras	<i>Sassafras</i>
tuliptree, yellow poplar	<i>Liriodendron tulipifera</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
adult	May 01	Jun 20	foliage	leaf notching	visual inspection
larva	May 15	Jul 01	foliage	discoloration (mining)	visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
adult, egg	May 20 - May 31	from - 363	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark
adult, egg	Jun 01 - Jun 10	- -	plants bloom: Kousa dogwood, cranberry bush, beautybush
adult, egg	Jun 20 - Jun 30	to - 618	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn

Chemical Control

Comments

Signal **Agricultural**
Word **Restricted Entry**
 Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
*bifenthrin	Onyx Pro	<i>BEE CAUTION</i>	W	12 hours
	Talstar P Professional	<i>BEE CAUTION</i>	C	12 hours
carbaryl	Carbaryl 4L	<i>BEE CAUTION</i>	C	12 hours
	Sevin SL	<i>BEE CAUTION</i>	C	12 hours
pyrethrin	Pyrenone		C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

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GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **RARE**Part of plant to treat: **FOLIAGE****Host Plants: Common Name****Scientific Name**

willow

*Salix***Pest Survey Information:**

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
larva	Jun 01	Jul 01	foliage	defoliation	visual inspection
larva	Aug 01	Sep 30	foliage	defoliation	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
larva	Jun 01 - Jun 10	from - 298	plants bloom: Kousa dogwood, cranberry bush, beautybush
larva	Jun 10 - Jun 20	to - 700	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn
larva	Aug 01 - Aug 10	from - 1917	plant bloom: Pee Gee Hydrangea blooms turn pink
larva	Aug 10 - Aug 20	to - 2271	plant fruit in color: Mountain ash, cranberry bush

Chemical Control**Comments****Signal Word****Agricultural Restricted Entry Interval (REI)^***Reference use only. NOT a label substitute.**Select the appropriate insecticide/miticide for the correct life stage of the target pest.*

acephate	Acephate 97 WDG	<i>BEE CAUTION</i>	C	24 hours
	Orthene T,T & O WSP	<i>BEE CAUTION</i>	C	24 hours
acetamiprid	TriStar 8.5 SL	<i>BEE CAUTION</i>	C	12 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
B. thuringiensis aizawai	XenTari	<i>Most effective against young larvae.</i>	C	4 hours
B. thuringiensis kurstaki	Biobit HP	<i>Most effective against young larvae.</i>	C	4 hours
	DiPel DF	<i>Most effective against young larvae.</i>	C	4 hours
*bifenthrin	Onyx Pro	<i>BEE CAUTION</i>	W	12 hours
	Talstar P Professional	<i>BEE CAUTION</i>	C	12 hours
carbaryl	Carbaryl 4L	<i>BEE CAUTION</i>	C	12 hours
	Sevin SL	<i>BEE CAUTION</i>	C	12 hours
chlorantraniliprole	Acelepryn			4 hours
*deltamethrin	Suspend SC	<i>BEE CAUTION</i>	C	
*permethrin	Astro	<i>BEE CAUTION</i>	C	12 hours
	Perm-UP 3.2EC	<i>BEE CAUTION</i>	C	12 hours
pyrethrin	Pyrenone		C	12 hours
spinosad	Conserve SC	<i>Most effective against young larvae.</i>	C	4 hours
*thiamethoxam	Meridian 0.33G	<i>BEE CAUTION</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

SINUATE PEARTREE BORER**

Agrilus sinuatus

Page 272 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **RARE**

Part of plant to treat: **FOLIAGE**

<u>Host Plants: Common Name</u>	<u>Scientific Name</u>
Cotoneaster	<i>Cotoneaster</i>
hawthorn	<i>Crataegus</i>
mountain ash, European	<i>Sorbus aucuparia</i>
pear	<i>Pyrus calleryana</i>
sycamore	<i>Platanus occidentalis</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult (beetle)	May 01	Jul 01	foliage		visual inspection?
hole, frass from larva	Jul 01	Oct 01	trunk	discoloration, dieback	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult	May 15 - Jun 30	270 - 967	

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal</u>	<u>Agricultural Restricted Entry</u>
			<u>Word</u>	<u>Interval (REI)^</u>
*abamectin	Mauget Abacide 2	BEE CAUTION	W	
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W	24 hours
*emamectin benzoate	Tree-age	BEE CAUTION	W	
*permethrin	Perm-UP 3.2EC	BEE CAUTION	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

SMALLER JAPANESE CEDAR LONGHORN
BETLE

Callidiellum rufipenne

GROWING SEASON

Apply thorough treatment only when pest stage found.

Host Plants: Common Name

Scientific Name

arborvitae

Thuja

falsecypress

Chamaecyparis

Juniper

Juniperus

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

SOUTHERN PINE BEETLE

Dendroctonus frontalis

GROWING SEASON

<u>Host Plants: Common Name</u>	<u>Scientific Name</u>
pine	<i>Pinus</i>
pine, eastern white	<i>Pinus strobus</i>
spruce, Norway	<i>Picea abies</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult, larva	Jan 01	Dec 31	trunk	borer tunnels	visual inspection

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

<u>Chemical Control</u>	<u>Comments</u>	<u>Signal</u>	<u>Word</u>
*abamectin	Mauget Abacide 2		
	<i>BEE CAUTION</i>	Agricultural Restricted Entry	Interval (REI)^
			W

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

DORMANT SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
Azalea	<i>Azalea</i>
holly	<i>Ilex</i>
laurel, mountain	<i>Kalmia latifolia</i>
Rhododendron	<i>Rhododendron</i>
rose of sharon	<i>Hibiscus syriacus</i>
summersweet	<i>Clethra alnifolia</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
egg	Mar 01	Apr 15	foliage		visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
egg	Mar 01 - Apr 10	0 - 41	None Offered

Chemical Control**Comments**

Signal Agricultural
Restricted Entry
Word Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

horticultural oil	Damoil	C	4 hours
	Sunspray Ultra-Fine SprayOil	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

SOUTHERN RED MITE**

Oligonychus ilicis

Page 475, 476 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
Azalea	<i>Azalea</i>
holly	<i>Ilex</i>
laurel, mountain	<i>Kalmia latifolia</i>
Rhododendron	<i>Rhododendron</i>
rose of sharon	<i>Hibiscus syriacus</i>
summersweet	<i>Clethra alnifolia</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
immature	May 01	Oct 15	foliage	discoloration (stippling)	visual inspection (magnification), plant tapping
adult	May 15	Oct 31	foliage	discoloration (stippling)	visual inspection (magnification), plant tapping

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
immature, adult	May 10 - May 20	from - 190	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle
immature	May 20 - May 31	- - -	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark
immature, adult	Jun 10 - Jun 20	to - 725	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn

Biological Control

Stethorus punctillum (lady beetle - predator)
Phytoseiulus persimilis (predatory mite)
Orius sp. (predator)
Neoseiulus cucumeris (predatory mite)
Chrysoperla sp. (green lacewing - predator)

Comments

Available commercially; occurs naturally
 Available commercially; occurs naturally
 Available commercially; occurs naturally
 Available commercially; occurs naturally
 Available commercially; occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

Comments

Signal **Agricultural**
Word **Restricted Entry**
Interval (REI)^

abamectin	Avid 0.15 EC		W	12 hours
bifenazate	Floramite SC	BEE CAUTION	C	12 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W	24 hours
etoxazole	Tetrasan 5 WDG		C	12 hours
fenazaquin	Magus	BEE CAUTION	W	12 hours
*fenpropathrin	Tame 2.4EC	BEE CAUTION	W	24 hours
fenpyroximate	Akari 5SC		W	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

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Chemical Control*Reference use only. NOT a label substitute.**Select the appropriate insecticide/miticide for the correct life stage of the target pest.*

<u>Chemical Control</u>		<u>Comments</u>	<u>Signal Word</u>	Agricultural Restricted Entry Interval (REI)^
hexythiazox	Hexygon DF	<i>most effective against immature stages</i>	C	12 hours
horticultural oil	Damoil		C	4 hours
	Sunspray Ultra-Fine Spray Oil		C	4 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
spiromesifen	Forbid 4F	<i>most effective against immature stages</i>	C	

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

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SPIREA APHID***Aphis citricola*

Page 298 (Johnson & Lyon)

GROWING SEASON**Apply thorough treatment only when pest stage found.**Frequency with which pest occurs: **OCCASIONAL**Part of plant to treat: **FOLIAGE, STEMS**

Host Plants: Common Name	Scientific Name
spirea	<i>Spiraea</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph	May 01	Jul 15	foliage, new growth	discoloration	visual inspection
adult	May 10	Jul 15	foliage, new growth	discoloration	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph, adult	Jun 10 - Jun 20	563 - 737	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn
nymph, adult	Jun 20 - Jun 30	737 - 967	plants bloom: Rhododendron maximum, Spiraea bumalda, Philadelphus
nymph, adult	Jul 01 - Jul 10	989 - 1196	plants bloom: Ceanothus americanus, Clematis jackmanii, Tilia cordata

Biological Control*Orius sp. (predator)**Hippodamia convergens (lady beetle - predator)**Diaeretiella rapae (wasp, aphid parasite)**Deraeocoris nebulosus (mirid bug - predator)**Chrysoperla sp. (green lacewing - predator)**Aphidoletes aphidimyza (midge, aphid predator)**Aphidius matricariae (wasp, aphid parasite)***Comments***Available commercially; occurs naturally**Available commercially; occurs naturally**occurs naturally**occurs naturally**Available commercially; occurs naturally**Available commercially; occurs naturally**Available commercially; occurs naturally***Chemical Control***Reference use only. NOT a label substitute.**Select the appropriate insecticide/miticide for the correct life stage of the target pest.*

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	<i>BEE CAUTION</i>	C	24 hours
	Lepitect	<i>BEE CAUTION</i>	C	24 hours
	Orthene T,T & O WSP	<i>BEE CAUTION</i>	C	24 hours
acetamiprid	TriStar 8.5 SL	<i>BEE CAUTION</i>	C	12 hours
	azadirachtin			
*bifenthrin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
*bifenthrin	Onyx Pro	<i>BEE CAUTION</i>	W	12 hours
	Talstar P Professional	<i>BEE CAUTION</i>	C	12 hours
carbaryl	Carbaryl 4L	<i>BEE CAUTION</i>	C	12 hours
	Sevin SL	<i>BEE CAUTION</i>	C	12 hours
chlorantraniliprole	Acelepryn			4 hours
*chlorpyrifos	Chlorpyrifos 4E AG	<i>Non-residential, BEE CAUTION</i>	W	24 hours
*clothianidin + bifenthrin	Aloft GC G	<i>BEE CAUTION</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

Chemical Control*Reference use only. NOT a label substitute.**Select the appropriate insecticide/miticide for the correct life stage of the target pest.*

<u>Chemical Control</u>		<u>Comments</u>	<u>Signal Word</u>	Agricultural Restricted Entry Interval (REI)^
*deltamethrin	Suspend SC	BEE CAUTION	C	
*fenpropathrin	Tame 2.4EC	BEE CAUTION	W	24 hours
flonicamid	Aria		C	12 hours
horticultural oil	Damoil		C	4 hours
	Sunspray Ultra-Fine Spray Oil		C	4 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C	12 hours
	Merit 75WSP	BEE CAUTION	C	12 hours
	Xytect 2F	BEE CAUTION	C	
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
malathion	Malathion 5 EC	BEE CAUTION	W	12 hours
	Malathion 8 Flowable	BEE CAUTION	C	12 hours
*permethrin	Astro	BEE CAUTION	C	12 hours
pymetrozine	Endeavor		C	12 hours
pyrethrin	PyGanic	OMRI listed	C	12 hours
	Pyrenone		C	12 hours
*thiamethoxam	Meridian 0.33G	BEE CAUTION	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

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SPOTTED LANTERNFLY

Lycorma delicatula

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **RARE**

Part of plant to treat: **STEM, TRUNK**

<u>Host Plants: Common Name</u>	<u>Scientific Name</u>
cherry, flowering	<i>Prunus</i>
cherry, purple leaf sand	<i>Prunus cistena</i>
crabapple	<i>Malus</i>
maple	<i>Acer</i>
oak	<i>Quercus</i>
pine	<i>Pinus</i>
poplar or aspen	<i>Populus</i>
tree of heaven	<i>Ailanthus altissima</i>
walnut	<i>Juglans</i>
willow	<i>Salix</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult	Sep 15	Nov 15	trunk	weeping wounds ontrunk	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph, adult	May 15 - Sep 30	200 - 2500	all season

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Lepitect	BEE CAUTION	C	24 hours
buprofezin	Talus 70DF	Only effective against immatures.	W	12 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C	12 hours
*dinotefuran	Safari 20 SG	apply drench when soil is not frozen or waterlogged.	C	12 hours
flonicamid	Aria		C	12 hours
*imidacloprid	Xytect 2F	BEE CAUTION	C	
pyrethrin	PyGanic	OMRI listed	C	12 hours
	Pyrenone		C	12 hours

Additional information on biology and control

As of January 2019, the exotic spotted lanternfly, *Lycorma delicatula* (White), has spread throughout Southeastern Pennsylvania, with infestations in Delaware and New Jersey to the east as well. Adults are 1" long with cream to gray colored upper wings with black spots and under wings that are red, black and white. Wingless nymphs are initially black and white but older nymphs are red and black with white spots. It was thought to prefer jumping to flying between hosts such as fruit trees, hops, grapes, tree of heaven and deciduous trees. However, the spread of this insect from

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

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SPOTTED LANTERNFLY

Lycorma delicatula

one to thirteen counties in the past three years may be indicative of the insect flying over long distances. With piercing-sucking mouthparts sap is removed from leaves, stems and trunks of host plants often leaving a weeping area of sap that attracts bees and wasps. In areas with high lanternfly populations, excretions of honeydew drip like rain from infested plants. Winter is passed as eggs in a gray mass on tree of heaven trunks or other objects nearby. Nymphs hatch in spring and will move off tree of heaven to other hosts where they feed on leaves and young stems before becoming adults by late July. (Tim Abbey, Penn State Extension, personal communication.) If you think you have seen the spotted lanternfly, please send digital photos to ReportSLF@ct.gov or contact the Information Offices in New Haven at 203-974-8600 or Windsor at 860-683-4977.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

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SPRUCE BUD SCALE**

Physokermes piceae

Page 96 (Johnson & Lyon)

DORMANT SEASON

Apply thorough treatment only when pest stage found.

Host Plants: Common Name

Scientific Name

spruce

Picea

spruce, Norway

Picea abies

Control: Stage(s) and Timing

Stage(s)

Ideal Control Dat

Degree Days

Treat HOST PLANT when the following

immature

Mar 01 - Apr 10

0

-

41

None Offered

Chemical Control

Comments

Signal

Agricultural
Restricted Entry

Word

Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

horticultural oil

Damoil

WARNING: use of oil on blue colored conifers will cause color to change.

C

4 hours

Sunspray Ultra-Fine SprayOil

WARNING: use of oil on blue colored conifers will cause color to change.

C

4 hours

Additional information on biology and control

WARNING: use of oil on blue colored conifers will cause color to change. Norway spruce is particularly susceptible to this pest.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

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DELAYED DORMANT

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **BASE OF BUD**

Host Plants: Common Name	Scientific Name
spruce	<i>Picea</i>
spruce, Colorado	<i>Picea pungens</i>
spruce, dwarf alberta	<i>Picea glauca</i> var. 'Conica'
spruce, Norway	<i>Picea abies</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph	Apr 01	Apr 20	base of bud	decline	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
immature	Apr 01 - Apr 20	28 -	96 plants bloom: silver maple, Cornelian cherry, pussy willow

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
horticultural oil	Damoil	C	4 hours
	Sunspray Ultra-Fine Spray Oil	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

SPRUCE BUD SCALE**

Physokermes piceae

Page 96 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **BASE OF BUD**

<u>Host Plants: Common Name</u>	<u>Scientific Name</u>
spruce	<i>Picea</i>
spruce, Colorado	<i>Picea pungens</i>
spruce, dwarf alberta	<i>Picea glauca</i> var. 'Conica'
spruce, Norway	<i>Picea abies</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph (crawler)	Jun 01	Sep 30	twig	decline	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
crawler	Jun 20 - Jun 30	from - 912	plants bloom: Rhododendron maximum, Spiraea bumalda, Philadelphus
crawler	Jul 01 - Jul 10	- - -	plants bloom: Ceanothus americanus, Clematis jackmanii, Tilia cordata
crawler	Jul 10 - Jul 20	to - 1388	plants bloom: Abelia, golden rain tree, sourwood

Biological Control

	<u>Comments</u>
<i>Lindorus lophanthae</i> (lady beetle - scale predator)	Available commercially
<i>Cryptolaemus montrouzieri</i> (lady beetle predator)	Available commercially; occurs naturally
<i>Chrysoperla</i> sp. (green lacewing - predator)	Available commercially; occurs naturally
<i>Chilocorus stigma</i> (lady beetle - predator)	occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C 24 hours
	Lepitect	Effective against immatures. Bee caution.	C 24 hours
	Orthene T,T & O WSP	BEE CAUTION	C 24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C 12 hours
carbaryl	Carbaryl 4L	Effective against immatures. Bee caution.	C 12 hours
	Sevin SL	BEE CAUTION	C 12 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C 12 hours
*clothianidin	Arena .25 G		C 12 hours
*deltamethrin	Suspend SC	Effective against immatures. Bee caution.	C
flonicamid	Aria		C 12 hours
horticultural oil	Damoil	WARNING: use of oil on blue colored conifers will cause color to change.	C 4 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C 12 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate		W 12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

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Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

<u>Chemical Control</u>		<u>Comments</u>	<u>Signal Word</u>	Agricultural Restricted Entry Interval (REI)^
	M-Pede	<i>Only effective against immatures.</i>	W	12 hours
lambda-cyhalothrin	Demand CS	<i>Effective against immatures. Bee caution.</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>Effective against immatures. Bee caution.</i>	C	24 hours
malathion	Malathion 5 EC	<i>Effective against immatures. Bee caution.</i>	W	12 hours
	Malathion 8 Flowable	<i>Effective against immatures. Bee caution.</i>	C	12 hours
pyriproxyfen	Distance IGR	<i>Only effective against immatures.</i>	C	12 hours
*thiamethoxam	Meridian 0.33G	BEE CAUTION	C	12 hours

Additional information on biology and control

WARNING: use of oil on blue colored conifers will cause color to change.

Signal words: C=Caution; W = Warning; DP = Danger Poison

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SPRUCE BUDWORM**

Choristoneura fumiferana

Page 28 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **BUD**

<u>Host Plants: Common Name</u>	<u>Scientific Name</u>
fir	<i>Abies</i>
hemlock	<i>Tsuga</i>
pine	<i>Pinus</i>
spruce	<i>Picea</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
larva	Apr 15	Jul 01	bud	defoliation	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
larva	Apr 20 - Apr 30	96 - 137	plants bloom: boxelder, star magnolia, periwinkle, Norway maple
larva	May 01 - Jun 10	144 - 563	Remainder of season between the beginning and end phenology
larva	Jun 10 - Jun 20	563 - 737	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn

Biological Control

Podisus maculiventris (spined soldier bug - predator)

Comments

Available commercially; occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C 24 hours
	Orthene T,T & O WSP	BEE CAUTION	C 24 hours
azadirachtin	Aza-Direct		C 4 hours
	AzaGuard		C 4 hours
B. thuringiensis aizawai	XenTari	Most effective against young larvae.	C 4 hours
B. thuringiensis kurstaki	Biobit HP	Most effective against young larvae.	C 4 hours
	DiPel DF	Most effective against young larvae.	C 4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W 12 hours
	Talstar P Professional	BEE CAUTION	C 12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C 12 hours
	Sevin SL	BEE CAUTION	C 12 hours
chlorantraniliprole	Acelepryn		4 hours
*deltamethrin	Suspend SC	BEE CAUTION	C
lambda-cyhalothrin	Demand CS	BEE CAUTION	C
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C 24 hours
*permethrin	Astro	BEE CAUTION	C 12 hours
	Perm-UP 3.2EC	BEE CAUTION	C 12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

SPRUCE BUDWORM**

Choristoneura fumiferana

Page 28 (Johnson & Lyon)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

Comments

Signal **Agricultural**
Word **Restricted Entry**
 Interval (REI)^

spinosad

Conserve SC

Most effective against young larvae.

C

4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

***restricted use pesticide**

****ESA approved common name**

^for agricultural applications only.

SPRUCE NEEDLEMINER***Endothenia albolineana*

Page 32 (Johnson & Lyon)

GROWING SEASON**Apply thorough treatment only when pest stage found.**Frequency with which pest occurs: **OCCASIONAL**Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
douglas fir	<i>Pseudotsuga menziesii</i>
spruce	<i>Picea</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
larva	Jun 01	Jun 20	foliage	discoloration (mining)	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
larva	Jun 01 - Jun 10	from - 448	plants bloom: Kousa dogwood, cranberry bush, beautybush
larva	Jun 10 - Jun 20	to - 802	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn

Chemical Control*Reference use only. NOT a label substitute.**Select the appropriate insecticide/miticide for the correct life stage of the target pest.*

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*abamectin	Mauget Abacide 2	BEE CAUTION	W	
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W	24 hours
*deltamethrin	Suspend SC	BEE CAUTION	C	
*fenpropathrin	Tame 2.4EC	BEE CAUTION	W	24 hours
*imidacloprid	Merit 75WSP	BEE CAUTION	C	12 hours
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
spinosad	Conserve SC	Most effective against young larvae.	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

DORMANT SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE, STEMS**

Host Plants: Common Name	Scientific Name
arborvitae	<i>Thuja</i>
cedar	<i>Cedrus</i>
douglas fir	<i>Pseudotsuga menziesii</i>
fir	<i>Abies</i>
hemlock	<i>Tsuga</i>
Juniper	<i>Juniperus</i>
pine	<i>Pinus</i>
spruce	<i>Picea</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
egg	Mar 01	Apr 15	foliage		visual inspection (magnification)

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
egg	Mar 01 - Apr 10	0 - 30	None Offered

Chemical Control

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
	<i>Reference use only. NOT a label substitute.</i>		
	<i>Select the appropriate insecticide/miticide for the correct life stage of the target pest.</i>		
horticultural oil	Damoil	C	4 hours
	Sunspray Ultra-Fine Spray Oil	C	4 hours

Additional information on biology and control

WARNING: use of oil on blue colored conifers will cause color to change. The spruce spider mite overwinters as bright orange eggs, with a curved setae coming out of the middle, laid in bud scales or underwebbing on twigs and branches. Eggs hatch in early April and the six-legged larvae begin feeding on older needles. They molt to an eight-legged nymph which continues feeding on needles. Adults are dark green to brown in the rear of the body, while the head area is cream to reddish in color like the legs. All stages can be dispersed by wind to surrounding plants. Most activity occurs in spring and fall. During hot weather they cease feeding and go into a diapause.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

SPRUCE SPIDER MITE**

Oligonychus ununquus

Page 118, 120, 475 (Johnson & Lyon)

Page 41 (Adams & Packauskas)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
arborvitae	<i>Thuja</i>
cedar	<i>Cedrus</i>
douglas fir	<i>Pseudotsuga menziesii</i>
fir	<i>Abies</i>
hemlock	<i>Tsuga</i>
Juniper	<i>Juniperus</i>
pine	<i>Pinus</i>
spruce	<i>Picea</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
immature	Apr 15	Nov 01	foliage	discoloration (stippling), needle drop	visual inspection (magnification), plant tapping
adult	May 10	Nov 01	foliage	discoloration (stippling), needle drop	visual inspection (magnification), plant tapping

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
immature, adult	May 01 - May 20	from - 130	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle
immature, adult	May 20 - May 31	- -	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark
immature, adult	Jun 01 - Jun 10	to - 540	plants bloom: Kousa dogwood, cranberry bush, beautybush
immature, adult	Aug 20 - Aug 31	from - 2150	plant fruit in color: Viburnum dentatum
immature, adult	Sep 01 - Sep 10	- -	plant fruit in color: sweet autumn clematis, Polygonum aubertii
immature, adult	Sep 10 - Sep 20	to - 2710	plants bloom: Pee Gee Hydrangea, Sevin-son Flower

Biological Control

- Feltiella acarisuga* (midge - spider mite predator)
- Stethorus punctillum* (lady beetle - predator)
- Phytoseiulus persimilis* (predatory mite)
- Orius sp.* (predator)
- Neoseiulus cucumeris* (predatory mite)
- Chrysoperla sp.* (green lacewing - predator)

Comments

- available commercially
- Available commercially; occurs naturally
- Available commercially; occurs naturally
- Available commercially; occurs naturally
- Available commercially; occurs naturally
- Available commercially; occurs naturally

Chemical Control

Reference use only. NOT a label substitute.
 Select the appropriate insecticide/miticide for the correct life stage of the target pest.

Comments

Signal **Agricultural**
Word **Restricted Entry**
Interval (REI)^

abamectin	Avid 0.15 EC		W	12 hours
acephate	Lepitect	BEE CAUTION	C	24 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
bifenazate	Floramite SC	BEE CAUTION	C	12 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W	24 hours
etoxazole	Tetrasan 5 WDG		C	12 hours
fenazaquin	Magus	BEE CAUTION	W	12 hours
fenpyroximate	Akari 5SC		W	12 hours
hexythiazox	Hexygon DF	most effective against immature stages	C	12 hours
horticultural oil	Damoil	WARNING: use of oil on blue colored conifers will cause color to change.	C	4 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
pyrethrin	PyGanic	OMRI listed	C	12 hours
spiromesifen	Forbid 4F	most effective against immature stages	C	

Additional information on biology and control

WARNING: use of oil on blue colored conifers will cause color to change.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

STRIPED ALDER SAWFLY**

Hemichroa crocea

Page 136 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
alder	<i>Alnus</i>
willow	<i>Salix</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
larva	Jun 01	Sep 30	foliage	defoliation	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
larva	Jun 01 - Jun 10	437 - 563	plants bloom: Kousa dogwood, cranberry bush, beautybush
larva	Jun 10 - Jun 20	563 - 737	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn
larva	Jun 20 - Jun 30	737 - 967	plants bloom: Rhododendron maximum, Spiraea bumalda, Philadelphus
larva	Aug 01 - Aug 20	1700 - 2173	plant bloom: Pee Gee Hydrangea blooms turn pink
larva	Aug 20 - Sep 30	2173 - 2719	rest of season

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	<i>BEE CAUTION</i>	C	24 hours
	Lepitect	<i>BEE CAUTION</i>	C	24 hours
	Orthene T,T & O WSP	<i>BEE CAUTION</i>	C	24 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
carbaryl	Carbaryl 4L	<i>BEE CAUTION</i>	C	12 hours
	Sevin SL	<i>BEE CAUTION</i>	C	12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	<i>Non-residential, BEE CAUTION</i>	W	24 hours
*deltamethrin	Suspend SC	<i>BEE CAUTION</i>	C	
*diflubenzuron	Dimilin 25W	<i>Effective against immatures. Bee caution.</i>	C	12 hours
*emamectin benzoate	Tree-age	<i>BEE CAUTION</i>	W	
horticultural oil	Damoil		C	4 hours
*imidacloprid	Mallet 75 WSP	<i>BEE CAUTION</i>	C	12 hours
	Merit 75WSP	<i>BEE CAUTION</i>	C	12 hours
	Xylect 2F	<i>BEE CAUTION</i>	C	
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede	<i>Only effective against immatures.</i>	W	12 hours
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
*permethrin	Perm-UP 3.2EC	<i>BEE CAUTION</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

Comments

Signal **Agricultural**
Word **Restricted Entry**
 Interval (REI)^

spinosad	Conserve SC	<i>Most effective against young larvae.</i>	C	4 hours
*thiamethoxam	Meridian 0.33G	<i>BEE CAUTION</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

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SUGAR MAPLE BORER**

Glycobius speciosus

Page 276, 278 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **TRUNK**

Host Plants: Common Name	Scientific Name
maple	<i>Acer</i>
maple, sugar	<i>Acer saccharum</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult (beetle)	Jun 01	Sep 30	trunk		visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult	Aug 10 - Aug 20	from - 2032	plant fruit in color: Mountain ash, cranberry bush
adult	Aug 20 - Aug 31	to - 2375	plant fruit in color: Viburnum dentatum

Biological Control

	<u>Comments</u>
<i>Steinernema feltiae</i> (nematode)	Available commercially
<i>Steinernema carpocapsae</i> (nematode)	Available commercially
<i>Heterorhabditis bacteriophora</i> (nematode)	Available commercially

Chemical Control

		<u>Comments</u>	<u>Signal</u>	<u>Agricultural Restricted Entry</u>
			<u>Word</u>	<u>Interval (REI)^</u>
<i>Reference use only. NOT a label substitute.</i>				
<i>Select the appropriate insecticide/miticide for the correct life stage of the target pest.</i>				
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W	24 hours
*clothianidin	Arena .25 G		C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
Cotoneaster	<i>Cotoneaster</i>
sycamore	<i>Platanus occidentalis</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult	May 15	Sep 30	foliage	discoloration (brownish spots)	visual inspection
nymph	May 20	Sep 30	foliage	discoloration (brownish spots)	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult	May 10 - May 20	from - 239	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle
adult	May 20 - May 31	to - 363	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*abamectin	Mauget Abacide 2 <i>BEE CAUTION</i>	W	
acephate	Acephate 97 WDG <i>BEE CAUTION</i>	C	24 hours
	Lepitect <i>BEE CAUTION</i>	C	24 hours
	Orthene T,T & O WSP <i>BEE CAUTION</i>	C	24 hours
azadirachtin	Aza-Direct <i>BEE CAUTION</i>	C	4 hours
	AzaGuard <i>BEE CAUTION</i>	C	4 hours
*bifenthrin	Onyx Pro <i>BEE CAUTION</i>	W	12 hours
	Talstar P Professional <i>BEE CAUTION</i>	C	12 hours
carbaryl	Carbaryl 4L <i>BEE CAUTION</i>	C	12 hours
	Sevin SL <i>BEE CAUTION</i>	C	12 hours
chlorantraniliprole	Acelepryn <i>BEE CAUTION</i>		4 hours
*chlorpyrifos	Chlorpyrifos 4E AG <i>Non-residential, BEE CAUTION</i>	W	24 hours
*clothianidin + bifenthrin	Aloft GC G <i>BEE CAUTION</i>	C	12 hours
*clothianidin	Arena .25 G <i>BEE CAUTION</i>	C	12 hours
*deltamethrin	Suspend SC <i>BEE CAUTION</i>	C	
*dinotefuran	Safari 20 SG <i>BEE CAUTION</i>	C	12 hours
*fenpropathrin	Tame 2.4EC <i>BEE CAUTION</i>	W	24 hours
flonicamid	Aria <i>BEE CAUTION</i>	C	12 hours
horticultural oil	Damoil <i>BEE CAUTION</i>	C	4 hours
	Sunspray Ultra-Fine Spray Oil <i>BEE CAUTION</i>	C	4 hours
*imidacloprid	Mallet 75 WSP <i>BEE CAUTION</i>	C	12 hours
	Merit 75WSP <i>BEE CAUTION</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

SYCAMORE LACE BUG**

Corythucha ciliata

Page 426, 428 (Johnson & Lyon)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
	Xytect 2F	BEE CAUTION	C	
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
malathion	Malathion 5 EC	BEE CAUTION	W	12 hours
	Malathion 8 Flowable	BEE CAUTION	C	12 hours
*permethrin	Astro	BEE CAUTION	C	12 hours
	Perm-UP 3.2EC	BEE CAUTION	C	12 hours
pyrethrin	PyGanic	OMRI listed	C	12 hours
*thiamethoxam	Meridian 0.33G	BEE CAUTION	C	12 hours

Additional information on biology and control

The sycamore lace bug overwinters as an adult in the peeling bark of its host. As leaves emerge the adult becomes active and lays eggs on leaf undersides in pubescence near the veins. Two generations can occur in Connecticut if we have a long growing season. The spikey haired nymphs look nothing like the delicate lacy, winged adults.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

<u>Host Plants: Common Name</u>	<u>Scientific Name</u>
sycamore	<i>Platanus occidentalis</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph, adult	Jun 01	Jul 31	foliage	distortion, discoloration	visual inspection, plant tapping

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph, adult	Jun 01 - Jun 20	437 - 737	plants bloom: Kousa dogwood, cranberry bush, beautybush
nymph, adult	Jun 20 - Jul 20	737 - 1417	Remainder of season between the beginning and end phenology
nymph, adult	Jul 20 - Jul 31	1417 - 1673	plants bloom: butterfly bush, Clethra alnifolia, false spirea

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

<u>Chemical Control</u>	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*abamectin	Mauget Abacide 2	BEE CAUTION	W
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C 12 hours
azadirachtin	Aza-Direct		C 4 hours
	AzaGuard		C 4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W 12 hours
	Talstar P Professional	BEE CAUTION	C 12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C 12 hours
	Sevin SL	BEE CAUTION	C 12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W 24 hours
*deltamethrin	Suspend SC	BEE CAUTION	C
horticultural oil	Damoil		C 4 hours
*imidacloprid	Merit 75WSP	BEE CAUTION	C 12 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate		W 12 hours
	M-Pede		W 12 hours
lambda-cyhalothrin	Demand CS	BEE CAUTION	C
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C 24 hours
*permethrin	Astro	BEE CAUTION	C 12 hours
	Perm-UP 3.2EC	BEE CAUTION	C 12 hours
pyrethrin	Pyrenone		C 12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

TARNISHED PLANT BUG**

Lygus lineolaris

Page 398 (Johnson & Lyon)

Page 48 (Adams & Packauskas)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
Forsythia	<i>Forsythia</i>
viburnum	<i>Viburnum</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult	Jun 01	Aug 01	foliage, new growth	distortion, discoloration	visual inspection, plant tapping
nymph	Jun 10	Aug 01	foliage	distortion, discoloration	visual inspection, plant tapping

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph, adult	Jun 01 - Jun 10	437 - 563	plants bloom: Kousa dogwood, cranberry bush, beautybush
nymph, adult	Jun 10 - Jul 20	563 - 1417	Remainder of season between the beginning and end phenology
nymph, adult	Jul 20 - Jul 31	1417 - 1673	plants bloom: butterfly bush, Clethra alnifolia, false spirea

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Lepitect	BEE CAUTION	C 24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C 12 hours
azadirachtin	Aza-Direct		C 4 hours
	AzaGuard		C 4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W 12 hours
	Talstar P Professional	BEE CAUTION	C 12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C 12 hours
	Sevin SL	BEE CAUTION	C 12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W 24 hours
*deltamethrin	Suspend SC	BEE CAUTION	C
*fenpropathrin	Tame 2.4EC	BEE CAUTION	W 24 hours
flonicamid	Aria		C 12 hours
horticultural oil	Damoil		C 4 hours
*imidacloprid	Merit 75WSP	BEE CAUTION	C 12 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate		W 12 hours
	M-Pede		W 12 hours
lambda-cyhalothrin	Demand CS	BEE CAUTION	C
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C 24 hours
malathion	Malathion 5 EC	BEE CAUTION	W 12 hours
	Malathion 8 Flowable	BEE CAUTION	C 12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

TARNISHED PLANT BUG**

Lygus lineolaris

Page 398 (Johnson & Lyon) Page

48 (Adams & Packauskas)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

<u>Chemical Control</u>		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*permethrin	Astro	<i>BEE CAUTION</i>	C	12 hours
	Perm-UP 3.2EC	<i>BEE CAUTION</i>	C	12 hours
pyrethrin	PyGanic	<i>OMRI listed</i>	C	12 hours
	Pyrenone		C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

TAXUS BUD MITE

Cecidophyopsis psilaspis
Page 122, 478 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **BUD, FOLIAGE**

Host Plants: Common Name	Scientific Name
yew	<i>Taxus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
immature, adult	May 01	Jul 01	foliage	distortion, discoloration	visual inspection (magnification)

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
immature, adult	May 01 - May 10	from - 148	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry
immature, adult	May 10 - Jun 20	- -	Remainder of season between the beginning and end phenology
immature, adult	Jun 20 - Jun 30	to - 912	plants bloom: Rhododendron maximum, Spiraea bumalda, Philadelphus

Biological Control

Stethorus punctillum (lady beetle - predator)

Comments

Available commercially; occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
fenazaquin	Magus	BEE CAUTION	W	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

DORMANT SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **TRUNK, STEM**

Host Plants: Common Name	Scientific Name
yew	<i>Taxus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph	Mar 01	Apr 15	trunk, stem	discoloration, decline	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph	Mar 01 - Apr 10	0 - 41	None Offered

Chemical Control

Comments

Signal **Agricultural**
Word **Restricted Entry**
Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

horticultural oil	Damoil		C	4 hours
	Sunspray Ultra-Fine SprayOil		C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

TAXUS MEALYBUG

Dysmicoccus wistariae

Page 88 (Johnson & Lyon) Page

49 (Adams & Packauskas)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **TRUNK, STEM**

Host Plants: Common Name	Scientific Name
dogwood	<i>Cornus</i>
maple	<i>Acer</i>
Rhododendron	<i>Rhododendron</i>
yew	<i>Taxus</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
nymph	May 01	Jun 01	trunk, stem	discoloration, decline	visual inspection
adult	Jun 01	Sep 01	trunk, stem	discoloration, decline	visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
nymph	May 10 - May 20	from - 246	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle
nymph	May 20 - May 31	- - -	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark
nymph, adult	Jun 01 - Jun 10	to - 618	plants bloom: Kousa dogwood, cranberry bush, beautybush

Biological Control

Cryptolaemus montrouzieri (lady beetle predator)

Chrysoperla sp. (green lacewing - predator)

Comments

Available commercially; occurs naturally

Available commercially; occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C	12 hours
	Aza-Direct		C	4 hours
azadirachtin	AzaGuard		C	4 hours
	Onyx Pro	BEE CAUTION	W	12 hours
*bifenthrin	Talstar P Professional	BEE CAUTION	C	12 hours
	Carbaryl 4L	BEE CAUTION	C	12 hours
carbaryl	Sevin SL	BEE CAUTION	C	12 hours
	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W	24 hours
*chlorpyrifos				
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C	12 hours
*clothianidin	Arena .25 G		C	12 hours
	Arena 50 WDG		C	12 hours
*deltamethrin	Suspend SC	BEE CAUTION	C	
*dinotefuran	Safari 20 SG	BEE CAUTION	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	Agricultural Restricted Entry Interval (REI)^
*fenpropathrin	Tame 2.4EC	BEE CAUTION	W	24 hours
flonicamid	Aria		C	12 hours
horticultural oil	Damoil		C	4 hours
	Sunspray Ultra-Fine Spray Oil		C	4 hours
*imidacloprid	Merit 75WSP	BEE CAUTION	C	12 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
malathion	Malathion 5 EC	BEE CAUTION	W	12 hours
	Malathion 8 Flowable	BEE CAUTION	C	12 hours
*permethrin	Astro	BEE CAUTION	C	12 hours
	Perm-UP 3.2EC	BEE CAUTION	C	12 hours
phosmet	Imidan 70W	BEE CAUTION	W	24 hours
pyrethrin	PyGanic	OMRI listed, effective against immatures	C	12 hours
*thiamethoxam	Meridian 0.33G	BEE CAUTION	C	12 hours

Additional information on biology and control

Occasionally on Rhododendron, dogwood, Prunus sp., maple

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

TENTIFORM LEAFMINER

Phyllonorycter spp.

Page 196 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
crabapple	<i>Malus</i>
hawthorn	<i>Crataegus</i>

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
adult, larva	May 10 - May 20	228 - 311	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle
adult, larva	May 20 - May 31	311 - 423	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark
adult, larva	Jun 01 - Jun 10	437 - 563	plants bloom: Kousa dogwood, cranberry bush, beautybush

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		Comments	Signal Word	Agricultural Restricted Entry Interval (REI)^
*abamectin	Mauget Abacide 2	BEE CAUTION	W	
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Lepitect	BEE CAUTION	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C	12 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours
*diflubenzuron	Dimilin 25W	Effective against immatures. Bee caution.	C	12 hours
*emamectin benzoate	Tree-age	BEE CAUTION	W	
*fenpropathrin	Tame 2.4EC	BEE CAUTION	W	24 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C	12 hours
	Merit 75WSP	BEE CAUTION	C	12 hours
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
*permethrin	Astro	BEE CAUTION	C	12 hours
	Perm-UP 3.2EC	BEE CAUTION	C	12 hours
pyrethrin	Pyrenone		C	12 hours
pyriproxyfen	Distance IGR	Only effective against immatures.	C	12 hours
*thiamethoxam	Meridian 0.33G	BEE CAUTION	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

DORMANT SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**Part of plant to treat: **STEM**

Host Plants: Common Name	Scientific Name
almond, dwarf flowering	<i>Prunus glandulosa</i>
birch	<i>Betula</i>
cherry, black	<i>Prunus serotina</i>
hawthorn	<i>Crataegus</i>
linden	<i>Tilia</i>
mulberry	<i>Morus</i>
poplar or aspen	<i>Populus</i>
redbud	<i>Cercis canadensis</i>
sycamore	<i>Platanus occidentalis</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult	Mar 01	Apr 15	stem	decline	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult	Mar 01 - Apr 10	0 - 41	None Offered

Chemical Control

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
	<i>Reference use only. NOT a label substitute.</i>		
	<i>Select the appropriate insecticide/miticide for the correct life stage of the target pest.</i>		
horticultural oil	Damoil	C	4 hours
	Sunspray Ultra-Fine Spray Oil	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

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TERRAPIN SCALE**

Mesolecanium nigrofasciatum

Page 364 (Johnson & Lyon)

DELAYED DORMANT

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **STEM**

Host Plants: Common Name	Scientific Name
almond, dwarf flowering	<i>Prunus glandulosa</i>
birch	<i>Betula</i>
cherry, black	<i>Prunus serotina</i>
hawthorn	<i>Crataegus</i>
linden	<i>Tilia</i>
mulberry	<i>Morus</i>
poplar or aspen	<i>Populus</i>
redbud	<i>Cercis canadensis</i>
sycamore	<i>Platanus occidentalis</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph	Apr 01	May 01	foliage	discoloration	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph	Apr 01 - Apr 20	28 -	96 plants bloom: silver maple, Cornelian cherry, pussy willow

Chemical Control

Comments

Signal **Agricultural**
Word **Restricted Entry**
Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

horticultural oil	Damoil	C	4 hours
	Sunspray Ultra-Fine Spray Oil	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
almond, dwarf flowering	<i>Prunus glandulosa</i>
birch	<i>Betula</i>
cherry, black	<i>Prunus serotina</i>
hawthorn	<i>Crataegus</i>
linden	<i>Tilia</i>
mulberry	<i>Morus</i>
poplar or aspen	<i>Populus</i>
redbud	<i>Cercis canadensis</i>
sycamore	<i>Platanus occidentalis</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
nymph	Jul 01	Sep 30	foliage	discoloration	visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
nymph, ?adult	Apr 20 - Apr 30	96 - 137	plants bloom: boxelder, star magnolia, periwinkle, Norway maple
adult	May 01 - May 10	144 - 228	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry
nymph	Jul 10 - Jul 20	1196 - 1417	plants bloom: Abelia, golden rain tree, sourwood
nymph	Jul 20 - Jul 31	1417 - 1673	plants bloom: butterfly bush, Clethra alnifolia, false spirea

Biological Control*Lindorus lophanthae* (lady beetle - scale predator)*Cryptolaemus montrouzieri* (lady beetle predator)*Chrysoperla* sp. (green lacewing - predator)*Chilocorus stigma* (lady beetle - predator)**Comments**

Available commercially

Available commercially; occurs naturally

Available commercially; occurs naturally

occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		Comments	Signal Word	Agricultural Restricted Entry Interval (REI)^
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Lepitect	Effective against immatures. Bee caution.	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C	12 hours
carbaryl	Carbaryl 4L	Effective against immatures. Bee caution.	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W	24 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

TERRAPIN SCALE**

Mesolecanium nigrofasciatum

Page 364 (Johnson & Lyon)

<u>Chemical Control</u>		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
<i>Reference use only. NOT a label substitute.</i>				
<i>Select the appropriate insecticide/miticide for the correct life stage of the target pest.</i>				
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C	12 hours
*clothianidin	Arena .25 G		C	12 hours
*deltamethrin	Suspend SC	Effective against immatures. Bee caution.	C	
flonicamid	Aria		C	12 hours
horticultural oil	Damoil		C	4 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C	12 hours
	Merit 75WSP	BEE CAUTION	C	12 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede	Only effective against immatures.	W	12 hours
lambda-cyhalothrin	Demand CS	Effective against immatures. Bee caution.	C	
*lambda-cyhalothrin	Scimitar GC	Effective against immatures. Bee caution.	C	24 hours
malathion	Malathion 5 EC	Effective against immatures. Bee caution.	W	12 hours
	Malathion 8 Flowable	Effective against immatures. Bee caution.	C	12 hours
pyriproxyfen	Distance IGR	Only effective against immatures.	C	12 hours
*thiamethoxam	Meridian 0.33G	BEE CAUTION	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

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GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
Magnolia	<i>Magnolia</i>
tuliptree, yellow poplar	<i>Liriodendron tulipifera</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph	Jun 01	Sep 30	foliage	discoloration	visual inspection
adult	Jun 15	Sep 30	foliage	discoloration	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph, adult	Jul 10 - Jul 20	from - 1151	plants bloom: Abelia, golden rain tree, sourwood
nymph, adult	Jul 20 - Aug 20	- - -	Remainder of season between the beginning and end phenology
nymph, adult	Aug 20 - Aug 30	to - 2033	plant fruit in color: Mountain ash, cranberry bush

Biological Control

	<u>Comments</u>
<i>Orius sp. (predator)</i>	Available commercially; occurs naturally
<i>Hippodamia convergens (lady beetle - predator)</i>	Available commercially; occurs naturally
<i>Diaeretiella rapae (wasp, aphid parasite)</i>	occurs naturally
<i>Deraeocoris nebulosus (mirid bug - predator)</i>	occurs naturally
<i>Chrysoperla sp. (green lacewing - predator)</i>	Available commercially; occurs naturally
<i>Aphidoletes aphidimyza (midge, aphid predator)</i>	Available commercially; occurs naturally
<i>Aphidius matricariae (wasp, aphid parasite)</i>	Available commercially; occurs naturally

Chemical Control

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
<i>Reference use only. NOT a label substitute.</i>			
<i>Select the appropriate insecticide/miticide for the correct life stage of the target pest.</i>			
*abamectin	Mauget Abacide 2	BEE CAUTION	W
acephate	Acephate 97 WDG	BEE CAUTION	C 24 hours
	Lepitect	BEE CAUTION	C 24 hours
	Orthene T,T & O WSP	BEE CAUTION	C 24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C 12 hours
azadirachtin	Aza-Direct		C 4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W 12 hours
	Talstar P Professional	BEE CAUTION	C 12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C 12 hours
	Sevin SL	BEE CAUTION	C 12 hours
chlorantraniliprole	Acelepryn		4 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W 24 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C 12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

TULIPTREE APHID**

Macrosiphum liriodendri

Page 292 (Johnson & Lyon)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal</u>	<u>Agricultural</u>
			<u>Word</u>	<u>Restricted Entry</u>
				<u>Interval (REI)^</u>
*deltamethrin	Suspend SC	BEE CAUTION	C	
*fenpropathrin	Tame 2.4EC	BEE CAUTION	W	24 hours
flonicamid	Aria		C	12 hours
horticultural oil	Damoil		C	4 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C	12 hours
	Merit 75WSP	BEE CAUTION	C	12 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
malathion	Malathion 5 EC	BEE CAUTION	W	12 hours
	Malathion 8 Flowable	BEE CAUTION	C	12 hours
*permethrin	Astro	BEE CAUTION	C	12 hours
pymetrozine	Endeavor		C	12 hours
pyrethrin	PyGanic	OMRI listed	C	12 hours
	Pyrenone		C	12 hours
*thiamethoxam	Meridian 0.33G	BEE CAUTION	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

DORMANT SEASON**Apply thorough treatment only when pest stage found.**Frequency with which pest occurs: **COMMON**Part of plant to treat: **STEM**

Host Plants: Common Name	Scientific Name
linden	<i>Tilia</i>
Magnolia	<i>Magnolia</i>
tuliptree, yellow poplar	<i>Liriodendron tulipifera</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph	Mar 01	Apr 15	stem	decline	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph	Mar 01 - Apr 10	0 - 41	None Offered

Chemical Control**Comments**

<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
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*Reference use only. NOT a label substitute.**Select the appropriate insecticide/miticide for the correct life stage of the target pest.*

horticultural oil	Damoil	C	4 hours
	Sunspray Ultra-Fine SprayOil	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

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TULIPTREE SCALE**

Toumeyella liriiodendri

Page 362 (Johnson & Lyon)

Page 48 (Adams & Packauskas)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **STEM**

Host Plants: Common Name	Scientific Name
linden	<i>Tilia</i>
Magnolia	<i>Magnolia</i>
tuliptree, yellow poplar	<i>Liriodendron tulipifera</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult	Jun 01	Jul 01	stem, branch	decline	visual inspection
nymph (crawler)	Aug 01	Sep 30	stem, branch	decline	visual inspection, sticky tape

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph	Aug 10 - Aug 20	from - 2032	plant fruit in color: Mountain ash, cranberry bush
crawler	Aug 20 - Sep 10	- - -	Remainder of season between the beginning and end phenology
crawler	Sep 10 - Sep 20	to - 2629	plants bloom: Pee Gee Hydrangea, Sevin-son Flower

Biological Control

Lindorus lophanthae (lady beetle - scale predator)
Cryptolaemus montrouzieri (lady beetle predator)
Chrysoperla sp. (green lacewing - predator)
Chilocorus stigma (lady beetle - predator)

Comments

Available commercially
 Available commercially; occurs naturally
 Available commercially; occurs naturally
 occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Lepitect	Effective against immatures. Bee caution.	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C	12 hours
	*bifenthrin	Talstar P Professional	Effective against immatures. Bee caution.	C
carbaryl	Carbaryl 4L	Effective against immatures. Bee caution.	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C	12 hours
*clothianidin	Arena .25 G		C	12 hours
*deltamethrin	Suspend SC	Effective against immatures. Bee caution.	C	
flonicamid	Aria		C	12 hours
horticultural oil	Damoil		C	4 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

Chemical Control*Reference use only. NOT a label substitute.**Select the appropriate insecticide/miticide for the correct life stage of the target pest.*

<u>Chemical Control</u>		<u>Comments</u>	<u>Signal Word</u>	Agricultural Restricted Entry Interval (REI)^
	Merit 75WSP	<i>BEE CAUTION</i>	C	12 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede	<i>Only effective against immatures.</i>	W	12 hours
lambda-cyhalothrin	Demand CS	<i>Effective against immatures. Bee caution.</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>Effective against immatures. Bee caution.</i>	C	24 hours
malathion	Malathion 5 EC	<i>Effective against immatures. Bee caution.</i>	W	12 hours
	Malathion 8 Flowable	<i>Effective against immatures. Bee caution.</i>	C	12 hours
pyriproxyfen	Distance IGR	<i>Only effective against immatures.</i>	C	12 hours
*thiamethoxam	Meridian 0.33G	<i>BEE CAUTION</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

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TWIG PRUNER**

Elaphidionoides villosus

Page 264 (Johnson & Lyon)

DORMANT SEASON

Remove infested plant part when damaged observed.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FALLEN TWIG, STEM, SMALL BRANCH**

<u>Host Plants: Common Name</u>	<u>Scientific Name</u>
chestnut, hybrids	<i>Castanea</i>
elder	<i>Sambucus</i>
hackberry	<i>Celtis occidentalis</i>
honeylocust	<i>Gleditsia triacanthos</i>
linden	<i>Tilia</i>
maple	<i>Acer</i>
oak	<i>Quercus</i>
quince, flowering	<i>Chaenomeles</i>
redbud	<i>Cercis canadensis</i>
Sassafras	<i>Sassafras</i>
sweetgum	<i>Liquidambar</i>
Wisteria	<i>Wisteria</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
larva in stems	Jan 01	Apr 10	fallen twig, stem, small branch	fallen twig, stem, small branch	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
larva in stems	Jan 01 - Apr 10	0 - 41	Not applicable

Non Chemical Control

Pick up and destroy affected twigs.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

DELAYED DORMANT

Remove infested plant part when damaged observed.

Host Plants: Common Name

Scientific Name

chestnut, hybrids	<i>Castanea</i>
elm	<i>Ulmus</i>
hackberry	<i>Celtis occidentalis</i>
hickory	<i>Carya</i>
honeylocust	<i>Gleditsia triacanthos</i>
linden	<i>Tilia</i>
maple	<i>Acer</i>
oak	<i>Quercus</i>
quince, flowering	<i>Chaenomeles</i>
redbud	<i>Cercis canadensis</i>
Sassafras	<i>Sassafras</i>
sweetgum	<i>Liquidambar</i>
Wisteria	<i>Wisteria</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
larva in stems	Apr 20	Apr 30	fallen twig, stem, small branch	fallen twig, stem, small branch	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
larva in stems	Apr 20 - Apr 30	96 - 137	Not applicable

Non Chemical Control

Pick up and destroy affected twigs.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

TWIG PRUNER***Elaphidionoides villosus*

Page 264 (Johnson & Lyon)

GROWING SEASON**Remove infested plant part when damaged observed.**Frequency with which pest occurs: **COMMON**Part of plant to treat: **SMALL STEMS**

Host Plants: Common Name	Scientific Name
chestnut, hybrids	<i>Castanea</i>
elm	<i>Ulmus</i>
hackberry	<i>Celtis occidentalis</i>
hickory	<i>Carya</i>
honeylocust	<i>Gleditsia triacanthos</i>
linden	<i>Tilia</i>
maple	<i>Acer</i>
oak	<i>Quercus</i>
quince, flowering	<i>Chaenomeles</i>
redbud	<i>Cercis canadensis</i>
Sassafras	<i>Sassafras</i>
sweetgum	<i>Liquidambar</i>
Wisteria	<i>Wisteria</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
larva in stems	May 01	Dec 31	in stem	dieback	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult in stem	May 01 - May 30	NA - NA	Not applicable
larva in stems	Jul 01 - Dec 31	NA - NA	Not applicable

Non Chemical Control

Pick up and destroy affected twigs.

Chemical Control**Comments**

Signal Agricultural
Restricted Entry
Word Interval (REI)^

*Reference use only. NOT a label substitute.**Select the appropriate insecticide/miticide for the correct life stage of the target pest.*

*chlorpyrifos	Chlorpyrifos 4E AG	<i>Non-residential, BEE CAUTION</i>	W	24 hours
*clothianidin	Arena .25 G		C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

restricted use pesticide***ESA approved common name****^for agricultural applications only.**

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
Abelia	<i>Abelia</i>
Azalea	<i>Azalea</i>
barberry	<i>Berberis</i>
Deutzia	<i>Deutzia</i>
Forsythia	<i>Forsythia</i>
laurel, mountain	<i>Kalmia latifolia</i>
lilac	<i>Syringa</i>
maple	<i>Acer</i>
privet	<i>Ligustrum</i>
Rhododendron	<i>Rhododendron</i>
Weigelia	<i>Weigelia</i>
yew	<i>Taxus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult	Jul 01	Sep 15	foliage	leaf notching	visual inspection, plant tapping

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult	Jul 20 - Jul 31	from - 1644	plants bloom: butterfly bush, Clethra alnifolia, false spirea
adult	Aug 01 - Aug 10	- - -	plant bloom: Pee Gee Hydrangea blooms turn pink
adult	Aug 10 - Aug 20	to - 2271	plant fruit in color: Mountain ash, cranberry bush

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG Orthene T,T & O WSP	C	24 hours
		C	24 hours
azadirachtin	Aza-Direct AzaGuard	C	4 hours
		C	4 hours
*bifenthrin	Onyx Pro Talstar P Professional	W	12 hours
		C	12 hours
*permethrin	Astro	C	12 hours
pyrethrin	Pyrenone	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

TWOLINED CHESTNUT BORER

Agrilus bilineatus

Page 270 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

<u>Host Plants: Common Name</u>	<u>Scientific Name</u>
chestnut, hybrids	<i>Castanea</i>
oak	<i>Quercus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult exit holes, bark rippling	Jan 01	Dec 31	trunk, stem, foliage	branch dieback	visual inspection
adult (beetle)	Jun 01	Jun 30	trunk, stem, foliage	branch dieback	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult (beetle)	Jun 01 - Jun 10	437 - 563	plants bloom: Kousa dogwood, cranberry bush, beautybush
adult, larva	Jun 10 - Jun 20	563 - 737	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn
adult, larva	Jun 20 - Jun 30	737 - 940	plants bloom: Rhododendron maximum, Spiraea bumalda, Philadelphus

Chemical Control

Comments

Signal **Agricultural**
Word **Restricted Entry**
Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

*clothianidin + bifenthrin	Aloft GCG	BEE CAUTION	C	12 hours
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Additional information on biology and control

The ½' long, bronze colored twolined chestnut borer overwinters as larvae in tunnels. Pupation occurs in early June, with adults emerging from D-shaped holes. Beetles feed on foliage of many hardwood tree species before mating and laying eggs in trunk bark cracks and crevices. Cream colored, flatheaded larvae bore immediately into the trunk, feeding in phloem and filling their winding tunnels with frass. Attacks usually begin in the crown and proceed down the trunk. There is one generation per year in Connecticut. Red, white, black, and scarlet oak are hosts. Maintaining good tree health may prevent twolined chestnut borer attack. Systemics, such as acephate and imidacloprid, can be applied against larvae anytime during the growing season when the soil is not waterlogged.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
almond, dwarf flowering	<i>Prunus glandulosa</i>
butterfly bush	<i>Buddleia</i>
cherry, black	<i>Prunus serotina</i>
elm	<i>Ulmus</i>
Euonymus	<i>Euonymus</i>
hawthorn	<i>Crataegus</i>
heather	<i>Calluna</i>
Hydrangea	<i>Hydrangea</i>
redbud	<i>Cercis canadensis</i>
rose	<i>Rosa</i>
spruce, dwarf alberta	<i>Picea glauca</i> var. 'Conica'

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
all stages	May 15	Sep 30	foliage	discoloration (stippling), leaf drop	visual inspection (magnification), plant tapping

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
immature, adult	May 20 - May 31	300 - 400	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark
immature, adult	Jun 01 - Jun 10	400 - 540	plants bloom: Kousa dogwood, cranberry bush, beautybush
immature, adult	Jun 10 - Jun 20	540 - 725	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn
immature, adult	Jul 10 - Jul 20	1160 - 1390	plants bloom: Abelia, golden rain tree, sourwood
immature, adult	Jul 20 - Aug 10	1390 - 1920	Remainder of season between the beginning and end phenology
immature, adult	Aug 10 - Aug 20	1920 - 2150	plant fruit in color: Mountain ash, cranberry bush

Biological Control

- Feltiella acarisuga* (midge - spider mite predator)
- Stethorus punctillum* (lady beetle - predator)
- Phytoseiulus persimilis* (predatory mite)
- Orius* sp. (predator)
- Neoseiulus cucumeris* (predatory mite)
- Chrysoperla* sp. (green lacewing - predator)

Comments

- available commercially
- Available commercially; occurs naturally
- Available commercially; occurs naturally
- Available commercially; occurs naturally
- Available commercially; occurs naturally
- Available commercially; occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

Comments

Signal Agricultural Restricted Entry
Word Interval (REI)^

abamectin	Avid 0.15 EC	W	12 hours
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Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

TWOSPOTTED SPIDER MITE**

Tetranychus urticae

Page 476 (Johnson & Lyon)

Page 41 (Adams & Packauskas)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Lepitect	BEE CAUTION	C	24 hours
bifenazate	Floramite SC	BEE CAUTION	C	12 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W	24 hours
etoxazole	Tetrasan 5 WDG		C	12 hours
fenazaquin	Magus	BEE CAUTION	W	12 hours
*fenpropathrin	Tame 2.4EC	BEE CAUTION	W	24 hours
fenpyroximate	Akari 5SC		W	12 hours
hexythiazox	Hexygon DF	most effective against immature stages	C	12 hours
horticultural oil	Damoil		C	4 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
pyrethrin	PyGanic	OMRI listed	C	12 hours
spiromesifen	Forbid 4F	most effective against immature stages	C	

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

DORMANT SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**Part of plant to treat: **TWIG, SMALL BRANCH**

Host Plants: Common Name	Scientific Name
viburnum	<i>Viburnum</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
egg	Nov 01	Feb 28	twig, small branch	capped egg slits intwigs	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
egg	Nov 01 - Feb 28	NA - NA	Not applicable

Non Chemical Control

Prune off and destroy the affected stems.

Additional information on biology and control

This leaf-feeding beetle was first found in Connecticut in 2004. Yellow to brown adults are approximately 1/4" long and feed on foliage of thin-leaved viburnums from July to September (Figures 1, 2). During the summer and fall, mature females make straight rows of cavities on the undersides of terminal twigs. They lay multiple eggs in the cavities and cover them with a mixture of feces and shredded bark (Figure 4). Flattened brown-spotted yellowish larvae hatch mid-May the following year and feed on the emerging leaves (Figure 3). As a group they skeletonize leaves beginning on the undersides, but as larvae increase in size, they begin to eat through the entire leaf, leaving only the veins. Approximately a month later, they crawl to the ground to pupate in the top 1 – 2 inches of soil. Adults emerge in three to four weeks (July), feed, mate and begin laying eggs in the twigs. Initial feeding by adults results in oval holes in leaves that can progress to total defoliation. There is one generation each year.

When noticed, larvae and adults can be handpicked. Twigs with eggs can be pruned off during the winter months when they are most visible. Azadirachtin, which is among the compounds registered for use against this pest in Connecticut, will control small larvae and repel adults. Bifenthrin, permethrin, spinosad and rotenone can also be used. Multiple applications are often necessary. Imidacloprid applied as a systemic to be taken up by the roots may provide season-long control. Consult the label for dosage rates and safety precautions.

Probably the most important control measure for viburnum leaf beetle will be to plant species that are resistant to feeding by this pest. Ratings of plant tolerances to viburnum leaf beetles were done by Dr. Paul Weston. Highly susceptible and susceptible species will die following approximately three successive years of defoliation. For further information go to <http://www.hort.cornell.edu/vlb/index.html>

Highly susceptible

V. dentatum, Arrowwood viburnum

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

VIBURNUM LEAF BEETLE

Pyrrhalta viburni

V. nudum, Smooth Witherod
V. opulus, European cranberrybush viburnum
V. opulus var. americana (formerly V. trilobum),
American cranberrybush viburnum
V. rafinesquianum, Rafinesque viburnum

Susceptible

V. acerifolium, Mapleleaf viburnum
V. lantana, Wayfaringtree viburnum
V. rufidulum, Rusty blackhaw viburnum
V. sargentii, Sargent viburnum
V. wrightii, Wright viburnum

Moderately susceptible

V. alnifolium (syn. V. lantanoides) Hobblebush
V. x burkwoodii, Burkwood viburnum
V. cassinoides, Witherod viburnum
V. x carlcephalum, Carlcephalum viburnum
V. dilatatum, Linden viburnum
V. farreri ('Nanum' is highly susceptible) Fragrant viburnum
V. lentago, Nannyberry viburnum
V. macrocephalum, Chinese snowball viburnum
V. x pragense, Prague viburnum
V. prunifolium, Blackhaw viburnum
V. rhytidophylloides, Lantanaphyllum viburnum

Resistant

V. bodnantense
V. carlesi, Koreanspice viburnum
V. x juddii, Judd viburnum
V. plicatum, Japanese snowball viburnum
V. plicatum f. tomentosum, Doublefile viburnum
V. rhytidophyllum, Leatherleaf viburnum
V. setigerum, Tea viburnum
V. sieboldi, Siebold viburnum

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

DELAYED DORMANT

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **TWIG, SMALL BRANCH**

Host Plants: Common Name	Scientific Name
viburnum	<i>Viburnum</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
egg	Mar 01	Apr 20	twig, small branch	capped egg slits intwigs	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
egg	Mar 01 - Apr 20	0 - 96	Not applicable

Non Chemical Control

Prune off and destroy the affected stems.

Additional information on biology and control

Additional information on pest biology can be found on the Dormant Season page.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

VIBURNUM LEAF BEETLE

Pyrrhalta viburni

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
viburnum	<i>Viburnum</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
larva	May 15	Jun 30	foliage	defoliation	visual inspection
adult (beetle)	Jun 15	Sep 30	foliage	defoliation	visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
larva	May 20 - Jun 15	278 - 632	plants bloom: Kousa dogwood, cranberry bush, beautybush
adult	Jul 01 - Sep 20	960 - 2712	plants bloom: butterfly bush, Clethra alnifolia, false spirea

Non Chemical Control

Where feasible, mechanically remove pest.

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		Comments	Signal Word	Agricultural Restricted Entry Interval (REI)^
*chlorpyrifos	Chlorpyrifos 4E AG	<i>Non-residential, BEE CAUTION</i>	W	24 hours
*clothianidin	Arena .25 G		C	12 hours
*dinotefuran	Safari 20 SG	<i>BEE CAUTION</i>	C	12 hours
*imidacloprid	Mallet 75 WSP	<i>BEE CAUTION</i>	C	12 hours
	Merit 75WSP	<i>BEE CAUTION</i>	C	12 hours
	Xytect 2F	<i>BEE CAUTION</i>	C	
pyrethrin	PyGanic	<i>OMRI listed</i>	C	12 hours
	Pyrenone		C	12 hours
*thiamethoxam	Meridian 0.33G	<i>BEE CAUTION</i>	C	12 hours

Additional information on biology and control

Additional information on pest biology can be found on the Dormant Season page.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **EXPANDING FOLIAGE**

Host Plants: Common Name	Scientific Name
walnut	<i>Juglans</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult, immature	May 01	Jul 01	new foliage	distortion	visual inspection (magnification)

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
immature	May 20 - May 31	from - 363	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark
immature, adult	Jun 01 - Jun 10	- -	plants bloom: Kousa dogwood, cranberry bush, beautybush
immature, adult	Jun 10 - Jun 20	to - 707	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn

Biological Control

Stethorus punctillum (lady beetle - predator)

Comments

Available commercially; occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
carbaryl	Carbaryl 4L	C	12 hours
	Sevin SL	C	12 hours
fenazaquin	Magus	W	12 hours
horticultural oil	Damoil	C	4 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate	W	12 hours
	M-Pede	W	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

WALNUT CATERPILLAR**

Datana integerrima

Page 150, 154 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE**

Host Plants: <u>Common Name</u>	<u>Scientific Name</u>
walnut	<i>Juglans</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
larva	Jul 01	Sep 30	foliage	defoliation	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
larva	Jul 01 - Jul 10	from - 1029	plants bloom: Ceanothus americanus, Clematis jackmanii, Tilia cordata
larva	Jul 10 - Jul 20	to - 1514	plants bloom: Abelia, golden rain tree, sourwood

Biological Control

Podisus maculiventris (spined soldier bug - predator)

Comments

Available commercially; occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C	12 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
B. thuringiensis aizawai	XenTari	Most effective against young larvae.	C	4 hours
B. thuringiensis kurstaki	DiPel DF	Most effective against young larvae.	C	4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
chlorantraniliprole	Acelepryn			4 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W	24 hours
*deltamethrin	Suspend SC	BEE CAUTION	C	
*diflubenzuron	Dimilin 25W	Effective against immatures. Bee caution.	C	12 hours
indoxacarb	Provaunt	BEE CAUTION	C	
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
*permethrin	Perm-UP 3.2EC	BEE CAUTION	C	12 hours
pyrethrin	Pyrenone		C	12 hours
spinosad	Conserve SC	Most effective against young larvae.	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

WALNUT CATERPILLAR**

Datana integerrima

Page 150, 154 (Johnson & Lyon)

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

***restricted use pesticide**

****ESA approved common name**

^for agricultural applications only.

WALNUT LACE BUG

Corythucha juglandis

Page 426 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
linden	<i>Tilia</i>
walnut	<i>Juglans</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult	May 15	Sep 30	foliage	discoloration (brownish spots)	visual inspection
nymph	May 20	Sep 30	foliage	discoloration (brownish spots)	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph, ?adult	May 10 - May 20	from - 239	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle
adult, egg	May 20 - May 31	to - 363	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C 24 hours
	Lepitect	BEE CAUTION	C 24 hours
	Orthene T,T & O WSP	BEE CAUTION	C 24 hours
azadirachtin	Aza-Direct		C 4 hours
	AzaGuard		C 4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W 12 hours
	Talstar P Professional	BEE CAUTION	C 12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C 12 hours
	Sevin SL	BEE CAUTION	C 12 hours
chlorantraniliprole	Acelepryn		4 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W 24 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C 12 hours
*deltamethrin	Suspend SC	BEE CAUTION	C
*dinotefuran	Safari 20 SG	BEE CAUTION	C 12 hours
*fenpropathrin	Tame 2.4EC	BEE CAUTION	W 24 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C 12 hours
	Merit 75WSP	BEE CAUTION	C 12 hours
	Xylect 2F	BEE CAUTION	C
insecticidal soap	Des-X Insecticidal Soap Concentrate		W 12 hours
	M-Pede		W 12 hours
lambda-cyhalothrin	Demand CS	BEE CAUTION	C
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C 24 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	Agricultural Restricted Entry Interval (REI)^
malathion	Malathion 5 EC	<i>BEE CAUTION</i>	W	12 hours
	Malathion 8 Flowable	<i>BEE CAUTION</i>	C	12 hours
*permethrin	Astro	<i>BEE CAUTION</i>	C	12 hours
	Perm-UP 3.2EC	<i>BEE CAUTION</i>	C	12 hours
pyrethrin	PyGanic	<i>OMRI listed</i>	C	12 hours
	Pyrenone		C	12 hours
*thiamethoxam	Meridian 0.33G	<i>BEE CAUTION</i>	C	12 hours

Additional information on biology and control

The walnut lace bug overwinters as an adult on or near its host in a protected spot. Eggs are laid on foliage in the spring. Wingless nymphs withdraw cell contents leaving yellow patches on the upper leaf surface. Dark, shiny fecal spots and shed skins on lower leaf surfaces can be diagnostic for this insect. Adults look nothing like the nymphs, having two sculptured but delicate lacy wings.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

WALNUT SCALE**

Quadraspidiotus juglansregiae

Page 386 (Johnson & Lyon)

DORMANT SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **STEM**

<u>Host Plants: Common Name</u>	<u>Scientific Name</u>
birch	<i>Betula</i>
dogwood	<i>Cornus</i>
elm	<i>Ulmus</i>
hackberry	<i>Celtis occidentalis</i>
holly	<i>Ilex</i>
honeylocust	<i>Gleditsia triacanthos</i>
horsechestnut	<i>Aesculus hippocastanum</i>
kentucky coffee tree	<i>Gymnocladus dioicus</i>
linden	<i>Tilia</i>
maple	<i>Acer</i>
mountain ash, European	<i>Sorbus aucuparia</i>
poplar or aspen	<i>Populus</i>
privet	<i>Ligustrum</i>
sweetgum	<i>Liquidambar</i>
witchhazel	<i>Hamamelis</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult, nymph	Mar 01	Apr 15	stem	decline	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph	Mar 01 - Apr 10	0 - 41	None Offered

Chemical Control

Comments

Signal Agricultural
Word Restricted Entry
Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

horticultural oil	Damoil	C	4 hours
	Sunspray Ultra-Fine SprayOil	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **STEM**

Host Plants: Common Name	Scientific Name
birch	<i>Betula</i>
dogwood	<i>Cornus</i>
elm	<i>Ulmus</i>
hackberry	<i>Celtis occidentalis</i>
holly	<i>Ilex</i>
honeylocust	<i>Gleditsia triacanthos</i>
horsechestnut	<i>Aesculus hippocastanum</i>
kentucky coffee tree	<i>Gymnocladus dioicus</i>
linden	<i>Tilia</i>
maple	<i>Acer</i>
mountain ash, European	<i>Sorbus aucuparia</i>
poplar or aspen	<i>Populus</i>
privet	<i>Ligustrum</i>
sweetgum	<i>Liquidambar</i>
walnut	<i>Juglans</i>
witchhazel	<i>Hamamelis</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph (crawler)	Jun 15	Sep 30	stem	decline	visual inspection, sticky tape

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
crawler, ?nymph	Jun 20 - Jun 30	737 - 967	plants bloom: Rhododendron maximum, Spiraea bumalda, Philadelphus
crawler, ?nymph	Jun 30 - Sep 20	967 - 2719	Remainder of season between the beginning and end phenology
crawler, ?nymph	Sep 20 - Sep 30	2719 - 2862	None Offered

Biological Control

	<u>Comments</u>
<i>Lindorus lophanthae</i> (lady beetle - scale predator)	Available commercially
<i>Cryptolaemus montrouzieri</i> (lady beetle predator)	Available commercially; occurs naturally
<i>Chrysoperla sp.</i> (green lacewing - predator)	Available commercially; occurs naturally
<i>Chilocorus stigma</i> (lady beetle - predator)	occurs naturally
<i>Aphytis melinus</i> (wasp, scale parasite)	Available commercially; occurs naturally

Chemical Control

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
<i>Reference use only. NOT a label substitute.</i>			
<i>Select the appropriate insecticide/miticide for the correct life stage of the target pest.</i>			
acephate	Acephate 97 WDG	BEE CAUTION	C 24 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

WALNUT SCALE**

Quadraspidiotus juglansregiae

Page 386 (Johnson & Lyon)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
	Lepitect	<i>Effective against immatures. Bee caution.</i>	C	24 hours
	Orthene T,T & O WSP	<i>BEE CAUTION</i>	C	24 hours
acetamiprid	TriStar 8.5 SL	<i>BEE CAUTION</i>	C	12 hours
*bifenthrin	Talstar P Professional	<i>Effective against immatures. Bee caution.</i>	C	12 hours
carbaryl	Carbaryl 4L	<i>Effective against immatures. Bee caution.</i>	C	12 hours
	Sevin SL	<i>BEE CAUTION</i>	C	12 hours
*deltamethrin	Suspend SC	<i>Effective against immatures. Bee caution.</i>	C	
flonicamid	Aria		C	12 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede	<i>Only effective against immatures.</i>	W	12 hours
lambda-cyhalothrin	Demand CS	<i>Effective against immatures. Bee caution.</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>Effective against immatures. Bee caution.</i>	C	24 hours
malathion	Malathion 5 EC	<i>Effective against immatures. Bee caution.</i>	W	12 hours
	Malathion 8 Flowable	<i>Effective against immatures. Bee caution.</i>	C	12 hours
pyrethrin	PyGanic	<i>OMRI listed, effective against immatures</i>	C	12 hours
pyriproxyfen	Distance IGR	<i>Only effective against immatures.</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **STEM, TRUNK**

Host Plants: Common Name	Scientific Name
pine	<i>Pinus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph	May 01	Sep 30	stem, trunk	decline	visual inspection
adult	May 15	Sep 30	stem, trunk	decline	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph, (?adult)	May 01 - May 10	121 - 246	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle
nymph, (?adult)	May 01 - May 10	121 - 246	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry
nymph, (?adult)	Aug 10 - Aug 31	1917 - 2271	

Biological Control

	<u>Comments</u>
<i>Orius sp. (predator)</i>	Available commercially; occurs naturally
<i>Hippodamia convergens (lady beetle - predator)</i>	Available commercially; occurs naturally
<i>Diaeretiella rapae (wasp, aphid parasite)</i>	occurs naturally
<i>Deraeocoris nebulosus (mirid bug - predator)</i>	occurs naturally
<i>Chrysoperla sp. (green lacewing - predator)</i>	Available commercially; occurs naturally
<i>Aphidoletes aphidimyza (midge, aphid predator)</i>	Available commercially; occurs naturally
<i>Aphidius matricariae (wasp, aphid parasite)</i>	Available commercially; occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*abamectin	Mauget Abacide 2	BEE CAUTION	W
acephate	Acephate 97 WDG	BEE CAUTION	C 24 hours
	Lepitect	BEE CAUTION	C 24 hours
	Orthene T,T & O WSP	BEE CAUTION	C 24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C 12 hours
azadirachtin	Aza-Direct		C 4 hours
	AzaGuard		C 4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W 12 hours
	Talstar P Professional	BEE CAUTION	C 12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C 12 hours
	Sevin SL	BEE CAUTION	C 12 hours
chlorantraniliprole	Acelepryn		4 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W 24 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C 12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

WHITE PINE APHID**

Cinara strobi

Page 84 (Johnson & Lyon)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*clothianidin	Arena 50 WDG		C	12 hours
*deltamethrin	Suspend SC	BEE CAUTION	C	
*fenpropathrin	Tame 2.4EC	BEE CAUTION	W	24 hours
flonicamid	Aria		C	12 hours
horticultural oil	Damoil		C	4 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C	12 hours
	Merit 75WSP	BEE CAUTION	C	12 hours
	Xytect 2F	BEE CAUTION	C	
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
malathion	Malathion 5 EC	BEE CAUTION	W	12 hours
	Malathion 8 Flowable	BEE CAUTION	C	12 hours
*permethrin	Astro	BEE CAUTION	C	12 hours
pymetrozine	Endeavor		C	12 hours
pyrethrin	PyGanic	OMRI listed	C	12 hours
	Pyrenone		C	12 hours
*thiamethoxam	Meridian 0.33G	BEE CAUTION	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

DELAYED DORMANT

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **ANNUAL**

Part of plant to treat: **LEADER AND LATERAL STEMS**

Host Plants: Common Name	Scientific Name
pine, eastern white	<i>Pinus strobus</i>
spruce	<i>Picea</i>
spruce, Colorado	<i>Picea pungens</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult	Apr 01	Apr 20	leader and lateral stems	some notching	visual inspection: tree base, branch, bud

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult	Apr 01 - Apr 20	28 -	96 plants bloom: silver maple, Cornelian cherry, pussy willow

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours
*diflubenzuron	Dimilin 25W	Effective against immatures. Bee caution.	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

WHITE PINE WEEVIL**

Pissodes strobi

Page 54 (Johnson & Lyon) Page

21 (Adams & Packauskas)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: ANNUAL

Part of plant to treat: LEADER AND LATERAL STEMS

Host Plants: Common Name	Scientific Name
pine, eastern white	<i>Pinus strobus</i>
spruce, Colorado	<i>Picea pungens</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult	Apr 20	Jun 01	leader and lateral stems	some notching	visual inspection: tree base, branch, bud
larva	Jun 15	Aug 01	leader and lateral stems	dieback	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult	Apr 20 - Apr 30	7 - 58	plants bloom: boxelder, star magnolia, periwinkle, Norway maple

Non Chemical Control

Remove and destroy infested plant parts.

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours
*diflubenzuron	Dimilin 25W	Effective against immatures. Bee caution.	C	12 hours
*imidacloprid	Xytect 2F	BEE CAUTION	C	
pyrethrin	Pyrenone		C	12 hours

Additional information on biology and control

White pine weevils emerge from hibernation the first warm day in spring. They fly to the leaders of susceptible trees and mate. Females dig a hole into the bark and lay multiple eggs. Larvae then feed on the cambium, killing all plant parts above the feeding site. A pupal chamber filled with shredded wood and bark is made in the wood. Mechanical removal and destruction of plant material must occur BEFORE the adults emerge in late summer.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

DORMANT SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **WHOLE PLANT**

Host Plants: Common Name	Scientific Name
almond, dwarf flowering	<i>Prunus glandulosa</i>
cherry, black	<i>Prunus serotina</i>
cherry, flowering	<i>Prunus</i>
golden raintree	<i>Koelreuteria paniculata</i>
lilac	<i>Syringa</i>
privet	<i>Ligustrum</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult	Apr 01	May 01	trunk, stem	decline	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult	Mar 01 - Apr 10	0 - 41	None Offered

Chemical Control

Comments

Signal Agricultural
Word Restricted Entry
Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

horticultural oil	Damoil	C	4 hours
	Sunspray Ultra-Fine SprayOil	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

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WHITE PRUNICOLA SCALE

Pseudaulacaspis prunicola
Page 392 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **COMMON**

Part of plant to treat: **WHOLE PLANT**

<u>Host Plants: Common Name</u>	<u>Scientific Name</u>
almond, dwarf flowering	<i>Prunus glandulosa</i>
cherry, black	<i>Prunus serotina</i>
cherry, flowering	<i>Prunus</i>
golden raintree	<i>Koelreuteria paniculata</i>
lilac	<i>Syringa</i>
privet	<i>Ligustrum</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph (crawler)	Jun 01	Sep 01	trunk, stem	decline	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
egg	Apr 20 - Apr 30	from - 35	plants bloom: boxelder, star magnolia, periwinkle, Norway maple
egg, adult, some (crawlers, nymphs)	May 01 - May 10	to - 145	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry
egg	Jun 20 - Jun 30	from - 707	plants bloom: Rhododendron maximum, Spiraea bumalda, Philadelphus
egg, adult, some (crawlers, nymphs)	Jul 01 - Jul 10	to - 1151	plants bloom: Ceanothus americanus, Clematis jackmanii, Tilia cordata

Biological Control

Lindorus lophanthae (lady beetle - scale predator)

Cryptolaemus montrouzieri (lady beetle predator)

Chrysoperla sp. (green lacewing - predator)

Chilocorus stigma (lady beetle - predator)

Comments

Available commercially

Available commercially; occurs naturally

Available commercially; occurs naturally

occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Lepitect	Effective against immatures. Bee caution.	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C	12 hours
*bifenthrin	Talstar P Professional	Effective against immatures. Bee caution.	C	12 hours
buprofezin	Talus 70DF	Only effective against immatures.	W	12 hours
carbaryl	Carbaryl 4L	Effective against immatures. Bee caution.	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W	24 hours
*deltamethrin	Suspend SC	Effective against immatures. Bee caution.	C	

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

WHITE PRUNICOLA SCALE

Pseudaulacaspis prunicola
Page 392 (Johnson & Lyon)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

<u>Chemical Control</u>		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*dinotefuran	Safari 20 SG	<i>BEE CAUTION</i>	C	12 hours
flonicamid	Aria		C	12 hours
horticultural oil	Damoil		C	4 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede	<i>Only effective against immatures.</i>	W	12 hours
lambda-cyhalothrin	Demand CS	<i>Effective against immatures. Bee caution.</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>Effective against immatures. Bee caution.</i>	C	24 hours
malathion	Malathion 5 EC	<i>Effective against immatures. Bee caution.</i>	W	12 hours
	Malathion 8 Flowable	<i>Effective against immatures. Bee caution.</i>	C	12 hours
pyrethrin	PyGanic	<i>OMRI listed, effective against immatures</i>	C	12 hours
pyriproxyfen	Distance IGR	<i>Only effective against immatures.</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

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WHITEMARKED TUSSOCK MOTH**

Orgyia leucostigma

Page 158-160 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
Ginkgo	<i>Ginkgo biloba</i>
horsechestnut	<i>Aesculus hippocastanum</i>
redbud	<i>Cercis canadensis</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
larva	May 10	Jun 01	foliage	defoliation	visual inspection
larva	Aug 10	Sep 01	foliage	defoliation	visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
larva	May 10 - May 20	192 - 298	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle
larva	Aug 10 - Aug 20	1917 - 2149	plant fruit in color: Mountain ash, cranberry bush
larva	Aug 20 - Aug 31	2150 - 2380	plant fruit in color: Viburnum dentatum

Biological Control

Podisus maculiventris (spined soldier bug - predator)

Comments

Available commercially; occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Lepitect	BEE CAUTION	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C	12 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
B. thuringiensis aizawai	XenTari	Most effective against young larvae.	C	4 hours
B. thuringiensis kurstaki	DiPel DF	Most effective against young larvae.	C	4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
chlorantraniliprole	Acelepryn			4 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W	24 hours
*deltamethrin	Suspend SC	BEE CAUTION	C	
*diflubenzuron	Dimilin 25W	Effective against immatures. Bee caution.	C	12 hours
*emamectin benzoate	Tree-age	BEE CAUTION	W	

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

Chemical Control*Reference use only. NOT a label substitute.**Select the appropriate insecticide/miticide for the correct life stage of the target pest.*

<u>Chemical Control</u>		<u>Comments</u>	<u>Signal Word</u>	Agricultural Restricted Entry Interval (REI)^
indoxacarb	Provaunt	<i>BEE CAUTION</i>	C	
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
*permethrin	Perm-UP 3.2EC	<i>BEE CAUTION</i>	C	12 hours
pyrethrin	PyGanic	<i>OMRI listed</i>	C	12 hours
	Pyrenone		C	12 hours
spinosad	Conserve SC	<i>Most effective against young larvae.</i>	C	4 hours

Additional information on biology and control

Handle caterpillars with care. Some people are quite sensitive to the hairs of this caterpillar.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

WILLOW FLEA WEEVIL**

Rhynchaenus rufipes

Page 190 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE**

Host Plants: Common Name	Scientific Name
willow	<i>Salix</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult	May 15	Jul 01	foliage	defoliation	visual inspection
larva	Jun 01	Aug 01	foliage	discoloration (mining)	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult	May 20 - May 31	from - 363	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark
adult	Jun 01 - Jun 10	- -	plants bloom: Kousa dogwood, cranberry bush, beautybush
adult, larva	Jun 10 - Jun 20	- -	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn
adult, larva	Jun 20 - Jun 30	- -	plants bloom: Rhododendron maximum, Spiraea bumalda, Philadelphus
adult, larva	Jul 01 - Jul 10	to - 1029	plants bloom: Ceanothus americanus, Clematis jackmanii, Tilia cordata

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Acephate 97 WDG	<i>BEE CAUTION</i>	C	24 hours
	Orthene T,T & O WSP	<i>BEE CAUTION</i>	C	24 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
*bifenthrin	Onyx Pro	<i>BEE CAUTION</i>	W	12 hours
	Talstar P Professional	<i>BEE CAUTION</i>	C	12 hours
carbaryl	Carbaryl 4L	<i>BEE CAUTION</i>	C	12 hours
	Sevin SL	<i>BEE CAUTION</i>	C	12 hours
*clothianidin + bifenthrin	Aloft GC G	<i>BEE CAUTION</i>	C	12 hours
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
pyrethrin	Pyrenone		C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

DORMANT SEASON

Apply thorough treatment only when pest stage found.

Host Plants: Common Name	Scientific Name
basswood	<i>Tilia americana</i>
cherry, flowering	<i>Prunus</i>
crabapple	<i>Malus</i>
maple	<i>Acer</i>
oak	<i>Quercus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
egg	Mar 01	Apr 01	trunk		visual inspection (magnification)

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
egg	Mar 15 - Apr 15	5 - 45	None Offered

Non Chemical Control

Band trees in late winter to trap hatching caterpillars.

Additional information on biology and control

As of March 2019, this invasive European moth has been found in southeastern Connecticut and further west along the shore. Small brown to beige 1” male moths emerge from the soil and begin flying around Thanksgiving. They mate with wingless females on the trunks of host trees. Tiny, rusty red eggs laid on host tree trunks in December and January overwinter and in spring turn a dark blue black prior to hatching in late March to mid-April. Small green caterpillars inch their way up the trunk and begin to feed on flower or foliar buds that have shed their scales. Small caterpillars also move about by spinning a silken thread and ballooning to new plants by winds. As time goes on new leaves are shredded and damage looks similar to that caused by the cankerworms. At maturity, the one inch long, green caterpillars with white longitudinal stripes will drop to the ground and pupate in the soil. Dr. Joe Elkinton, UMass, has released a parasitic fly in Connecticut to control winter moth. This fly has successfully lowered populations of winter moth in Nova Scotia so that it is no longer a problem there

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

WINTER MOTH

Operophtera brumata

Page 146 (Johnson & Lyon)

DELAYED DORMANT

Apply thorough treatment only when pest stage found.

Host Plants: Common Name

Scientific Name

basswood

Tilia americana

cherry, flowering

Prunus

crabapple

Malus

maple

Acer

oak

Quercus

Pest Survey Information:

Pest Stage

From

To

Plant Part

Plant Damage

Survey Method

larva (caterpillar)

Apr 01

May 01

bud, foliage

chewed buds, small leafholes

visual inspection
(magnification)

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE, NEW SHOOTS**

Host Plants: Common Name	Scientific Name
basswood	<i>Tilia americana</i>
cherry, flowering	<i>Prunus</i>
crabapple	<i>Malus</i>
maple	<i>Acer</i>
oak	<i>Quercus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
larva (caterpillar)	May 01	Jun 15	foliage	skeletonized leaf, defoliation	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
larva (caterpillar)	May 01 - May 10	135 - 190	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry
larva	May 10 - May 31	190 - 395	Remainder of season between the beginning and end phenology
larva	Jun 01 - Jun 10	410 - 540	plants bloom: Kousa dogwood, cranberry bush, beautybush

Non Chemical Control

Band trees in late summer to trap emerging females.

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
acephate	Lepitect	BEE CAUTION	C	24 hours
B. thuringiensis aizawai	XenTari	Most effective against young larvae.	C	4 hours
B. thuringiensis kurstaki	DiPel DF	Most effective against young larvae.	C	4 hours
*bifenthrin	Talstar P Professional	BEE CAUTION	C	12 hours
*diflubenzuron	Dimilin 25W	Effective against immatures. Bee caution.	C	12 hours
indoxacarb	Provaunt	BEE CAUTION	C	
pyrethrin	PyGanic	OMRI listed	C	12 hours
	Pyrenone		C	12 hours
spinosad	Conserve SC	Most effective against young larvae.	C	4 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

WITCHHAZEL LEAF GALL APHID (SPRING)

Hormaphis hamamelidis

Page 450 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE**

Host Plants: <u>Common Name</u>	<u>Scientific Name</u>
witchhazel	<i>Hamamelis</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph	May 01	Jun 01	foliage	gall	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph	May 01 - May 10	144 - 228	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry
adult, nymph	May 20 - May 31	311 - 423	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark

Chemical Control

Comments

Signal **Agricultural**
Word **Restricted Entry**
Interval (REI)^

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

*abamectin	Mauget Abacide 2	<i>BEE CAUTION</i>	W	
acephate	Acephate 97 WDG	<i>BEE CAUTION</i>	C	24 hours
	Orthene T,T & O WSP	<i>BEE CAUTION</i>	C	24 hours
acetamiprid	TriStar 8.5 SL	<i>BEE CAUTION</i>	C	12 hours
	azadirachtin			
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
*bifenthrin	Onyx Pro	<i>BEE CAUTION</i>	W	12 hours
	Talstar P Professional	<i>BEE CAUTION</i>	C	12 hours
carbaryl	Carbaryl 4L	<i>BEE CAUTION</i>	C	12 hours
	Sevin SL	<i>BEE CAUTION</i>	C	12 hours
*clothianidin	Arena 50 WDG		C	12 hours
*deltamethrin	Suspend SC	<i>BEE CAUTION</i>	C	
*fenpropathrin	Tame 2.4EC	<i>BEE CAUTION</i>	W	24 hours
horticultural oil	Damoil		C	4 hours
*imidacloprid	Mallet 75 WSP	<i>BEE CAUTION</i>	C	12 hours
	Merit 75WSP	<i>BEE CAUTION</i>	C	12 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
malathion	Malathion 5 EC	<i>BEE CAUTION</i>	W	12 hours
	Malathion 8 Flowable	<i>BEE CAUTION</i>	C	12 hours
pymetrozine	Endeavor		C	12 hours
pyrethrin	Pyrenone		C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

WITCHHAZEL LEAF GALL APHID (SUMMER)

Hormaphis hamamelidis
Page 450 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE**

Host Plants: <u>Common Name</u>	<u>Scientific Name</u>
birch	<i>Betula</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
adult	Jun 01	Jul 01	foliage	gall	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
adult, nymph	Jun 10 - Jun 20	563 - 737	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn
adult, nymph	Jun 20 - Jun 30	737 - 967	plants bloom: Rhododendron maximum, Spiraea bumalda, Philadelphus

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

<u>Chemical Control</u>	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*abamectin	Mauget Abacide 2	BEE CAUTION	W
acephate	Acephate 97 WDG	BEE CAUTION	C 24 hours
	Lepitect	BEE CAUTION	C 24 hours
	Orthene T,T & O WSP	BEE CAUTION	C 24 hours
	TriStar 8.5 SL	BEE CAUTION	C 12 hours
azadirachtin	Aza-Direct		C 4 hours
	AzaGuard		C 4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W 12 hours
	Talstar P Professional	BEE CAUTION	C 12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C 12 hours
	Sevin SL	BEE CAUTION	C 12 hours
chlorantraniliprole	Acelepryn		4 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W 24 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C 12 hours
*clothianidin	Arena 50 WDG		C 12 hours
*deltamethrin	Suspend SC	BEE CAUTION	C
*fenpropathrin	Tame 2.4EC	BEE CAUTION	W 24 hours
flonicamid	Aria		C 12 hours
horticultural oil	Damoil		C 4 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C 12 hours
	Merit 75WSP	BEE CAUTION	C 12 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate		W 12 hours
	M-Pede		W 12 hours
lambda-cyhalothrin	Demand CS	BEE CAUTION	C

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

WITCHHAZEL LEAF GALL APHID (SUMMER)

Hormaphis hamamelidis

Page 450 (Johnson & Lyon)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

<u>Chemical Control</u>		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
malathion	Malathion 5 EC	BEE CAUTION	W	12 hours
	Malathion 8 Flowable	BEE CAUTION	C	12 hours
*permethrin	Astro	BEE CAUTION	C	12 hours
pymetrozine	Endeavor		C	12 hours
pyrethrin	Pyrenone		C	12 hours
*thiamethoxam	Meridian 0.33G	BEE CAUTION	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

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GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **STEM**

<u>Host Plants: Common Name</u>	<u>Scientific Name</u>
elm	<i>Ulmus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph, adult	Apr 20	May 31	opening buds, foliage	discoloration, distortion	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph, adult	May 01 - May 31	144 - 423	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry

Biological Control

	<u>Comments</u>
<i>Orius sp. (predator)</i>	Available commercially; occurs naturally
<i>Hippodamia convergens (lady beetle - predator)</i>	Available commercially; occurs naturally
<i>Diaeretiella rapae (wasp, aphid parasite)</i>	occurs naturally
<i>Deraeocoris nebulosus (mirid bug - predator)</i>	occurs naturally
<i>Chrysoperla sp. (green lacewing - predator)</i>	Available commercially; occurs naturally
<i>Aphidoletes aphidimyza (midge, aphid predator)</i>	Available commercially; occurs naturally
<i>Aphidius matricariae (wasp, aphid parasite)</i>	Available commercially; occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*abamectin	Mauget Abacide 2	BEE CAUTION	W
acephate	Acephate 97 WDG	BEE CAUTION	C 24 hours
	Orthene T,T & O WSP	BEE CAUTION	C 24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C 12 hours
azadirachtin	Aza-Direct		C 4 hours
	AzaGuard		C 4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W 12 hours
	Talstar P Professional	BEE CAUTION	C 12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C 12 hours
	Sevin SL	BEE CAUTION	C 12 hours
*clothianidin	Arena 50 WDG		C 12 hours
*deltamethrin	Suspend SC	BEE CAUTION	C
*fenpropathrin	Tame 2.4EC	BEE CAUTION	W 24 hours
horticultural oil	Damoil		C 4 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C 12 hours
	Merit 75WSP	BEE CAUTION	C 12 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate		W 12 hours
	M-Pede		W 12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

WOOLLY APPLE APHID (SPRING)**

Eriosoma lanigerum

Page 316 (Johnson & Lyon)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
malathion	Malathion 5 EC	BEE CAUTION	W	12 hours
	Malathion 8 Flowable	BEE CAUTION	C	12 hours
pymetrozine	Endeavor		C	12 hours
pyrethrin	Pyrenone		C	12 hours

Additional information on biology and control

These aphids cause knotty galls on the roots and twigs and reduce the vigor of trees. Woolly apple aphids have a complex life cycle during which they may use several hosts, but elm and apple are the principal hosts. In spring, nymphs hatch from the eggs that have overwintered on elm trees, and they begin to feed on the buds and leaves. The reddish brown to purple nymphs easily are identified because they secrete tufts of a white, cottony-like substance on their bodies. After 2-3 generations, winged females develop and migrate to apple or other rosaceous plants. On apple, the females start colonies that may complete several generations. Subterranean colonies of nymphs also can spend the winter on apple roots. These colonies develop through several generations on apple roots, finally producing winged females that move to the aerial parts of the tree to start new infestations in the cracks and the crevices on the bark or at the base of growing shoots. In autumn, the winged adults of both sexes migrate to elm where the females lay eggs that will overwinter. Infestations of the woolly apple aphid may be reduced during the summer by pruning branches with colonies. The removal of suckers at the base of trees and on the main scaffold limbs is especially important. An application of horticultural oil, which is among the compounds registered for use against this pest in Connecticut, at the 1/2"-growth stage sometimes provides good control. Consult the label for dosage rates and safety precautions (From 'The Plant Pest Handbook ', Published by the Connecticut Agricultural Experiment Station)

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **TWIG AND TRUNK SCARS, ROOTS**

Host Plants: Common Name	Scientific Name
apple	<i>Malus</i>
Cotoneaster	<i>Cotoneaster</i>
firethorn	<i>Pyracantha</i>
hawthorn	<i>Crataegus</i>
mountain ash, European	<i>Sorbus aucuparia</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
nymph, adult	Jun 20	Sep 30	stem	galls: twig, branch, root	visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
nymph, adult	Jun 01 - Jun 10	437 - 563	plants bloom: Kousa dogwood, cranberry bush, beautybush
nymph, adult	Jun 10 - Jun 20	563 - 737	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn
nymph, adult	Aug 10 - Aug 20	1933 - 2173	plant fruit in color: Mountain ash, cranberry bush

Biological Control

	Comments
<i>Orius sp. (predator)</i>	Available commercially; occurs naturally
<i>Hippodamia convergens (lady beetle - predator)</i>	Available commercially; occurs naturally
<i>Diaeretiella rapae (wasp, aphid parasite)</i>	occurs naturally
<i>Deraeocoris nebulosus (mirid bug - predator)</i>	occurs naturally
<i>Chrysoperla sp. (green lacewing - predator)</i>	Available commercially; occurs naturally
<i>Aphidoletes aphidimyza (midge, aphid predator)</i>	Available commercially; occurs naturally
<i>Aphidius matricariae (wasp, aphid parasite)</i>	Available commercially; occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	Comments	Signal Word	Agricultural Restricted Entry Interval (REI)^
*abamectin	Mauget Abacide 2	BEE CAUTION	W
acephate	Acephate 97 WDG	BEE CAUTION	C 24 hours
	Orthene T,T & O WSP	BEE CAUTION	C 24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C 12 hours
azadirachtin	Aza-Direct		C 4 hours
	AzaGuard		C 4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W 12 hours
	Talstar P Professional	BEE CAUTION	C 12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C 12 hours
	Sevin SL	BEE CAUTION	C 12 hours
chlorantraniliprole	Acelepryn		4 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W 24 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

WOOLLY APPLE APHID (SUMMER)**

Eriosoma lanigerum

Page 316 (Johnson & Lyon)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*clothianidin	Arena 50 WDG		C	12 hours
*deltamethrin	Suspend SC	BEE CAUTION	C	
*fenpropathrin	Tame 2.4EC	BEE CAUTION	W	24 hours
flonicamid	Aria		C	12 hours
horticultural oil	Damoil		C	4 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C	12 hours
	Merit 75WSP	BEE CAUTION	C	12 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
malathion	Malathion 5 EC	BEE CAUTION	W	12 hours
	Malathion 8 Flowable	BEE CAUTION	C	12 hours
pymetrozine	Endeavor		C	12 hours
pyrethrin	Pyrenone		C	12 hours
*thiamethoxam	Meridian 0.33G	BEE CAUTION	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **FOLIAGE**

Host Plants: <u>Common Name</u>	<u>Scientific Name</u>
beech	<i>Fagus</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
egg, nymph	May 20	May 31	foliage	discoloration, distortion	visual inspection
nymph, adult	Jun 01	Jul 01	foliage	discoloration, distortion	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
egg, nymph	May 20 - May 31	from - 363	plants bloom: ruby horsechestnut, Laburnum alpinum, black locust, ninebark
nymph, adult	Jun 01 - Jun 10	- - -	plants bloom: Kousa dogwood, cranberry bush, beautybush
nymph, adult	Jun 10 - Jun 20	to - 707	plants bloom: mountain laurel, mock-orange, Japanese tree lilac, Washington hawthorn

Biological Control

	<u>Comments</u>
<i>Orius sp.</i> (predator)	Available commercially; occurs naturally
<i>Hippodamia convergens</i> (lady beetle - predator)	Available commercially; occurs naturally
<i>Diaeretiella rapae</i> (wasp, aphid parasite)	occurs naturally
<i>Deraeocoris nebulosus</i> (mirid bug - predator)	occurs naturally
<i>Chrysoperla sp.</i> (green lacewing - predator)	Available commercially; occurs naturally
<i>Aphidoletes aphidimyza</i> (midge, aphid predator)	Available commercially; occurs naturally
<i>Aphidius matricariae</i> (wasp, aphid parasite)	Available commercially; occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*abamectin	Mauget Abacide 2	BEE CAUTION	W
acephate	Acephate 97 WDG	BEE CAUTION	C 24 hours
	Lepitect	BEE CAUTION	C 24 hours
	Orthene T,T & O WSP	BEE CAUTION	C 24 hours
	TriStar 8.5 SL	BEE CAUTION	C 12 hours
azadirachtin	Aza-Direct		C 4 hours
	AzaGuard		C 4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W 12 hours
	Talstar P Professional	BEE CAUTION	C 12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C 12 hours
	Sevin SL	BEE CAUTION	C 12 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W 24 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C 12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

WOOLLY BEECH APHIDS**

Aphididae

Page 296 (Johnson & Lyon)

Page 37 (Adams & Packauskas)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*clothianidin	Arena 50 WDG		C	12 hours
*deltamethrin	Suspend SC	BEE CAUTION	C	
*fenpropathrin	Tame 2.4EC	BEE CAUTION	W	24 hours
flonicamid	Aria		C	12 hours
horticultural oil	Damoil		C	4 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C	12 hours
	Merit 75WSP	BEE CAUTION	C	12 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
malathion	Malathion 5 EC	BEE CAUTION	W	12 hours
	Malathion 8 Flowable	BEE CAUTION	C	12 hours
pymetrozine	Endeavor		C	12 hours
pyrethrin	Pyrenone		C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

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GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **UNFOLDING FOLIAGE**

Host Plants: Common Name	Scientific Name
elm	<i>Ulmus</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
nymph, adult	May 01	Jun 30	foliage	discoloration, distortion	visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
adult, nymph	May 01 - May 10	from - 121	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry
adult, nymph	May 10 - May 20	- - -	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry
adult, nymph	Jun 20 - Jun 30	to - 246	plants bloom: Rhododendron maximum, Spiraea bumalda, Philadelphus

Biological Control

	Comments
<i>Orius sp. (predator)</i>	Available commercially; occurs naturally
<i>Hippodamia convergens (lady beetle - predator)</i>	Available commercially; occurs naturally
<i>Diaeretiella rapae (wasp, aphid parasite)</i>	occurs naturally
<i>Deraeocoris nebulosus (mirid bug - predator)</i>	occurs naturally
<i>Chrysoperla sp. (green lacewing - predator)</i>	Available commercially; occurs naturally
<i>Aphidoletes aphidimyza (midge, aphid predator)</i>	Available commercially; occurs naturally
<i>Aphidius matricariae (wasp, aphid parasite)</i>	Available commercially; occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

	Comments	Signal Word	Agricultural Restricted Entry Interval (REI)^
*abamectin	Mauget Abacide 2	BEE CAUTION	W
acephate	Acephate 97 WDG	BEE CAUTION	C 24 hours
	Orthene T,T & O WSP	BEE CAUTION	C 24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C 12 hours
	Aza-Direct		C 4 hours
azadirachtin	AzaGuard		C 4 hours
	Onyx Pro	BEE CAUTION	W 12 hours
*bifenthrin	Talstar P Professional	BEE CAUTION	C 12 hours
	Carbaryl 4L	BEE CAUTION	C 12 hours
carbaryl			C 12 hours
*clothianidin	Arena 50 WDG		C 12 hours
*deltamethrin	Suspend SC	BEE CAUTION	C
*fenpropathrin	Tame 2.4EC	BEE CAUTION	W 24 hours
horticultural oil	Damoil		C 4 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C 12 hours
	Merit 75WSP	BEE CAUTION	C 12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

^for agricultural applications only.

WOOLLY ELM APHID (SPRING)**

Eriosoma americanum

Page 306 (Johnson & Lyon)

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal</u>	<u>Agricultural</u>
			<u>Word</u>	<u>Restricted Entry</u>
				<u>Interval (REI)^</u>
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
malathion	Malathion 5 EC	BEE CAUTION	W	12 hours
	Malathion 8 Flowable	BEE CAUTION	C	12 hours
pymetrozine	Endeavor		C	12 hours
pyrethrin	Pyrenone		C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

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GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **ROOT ZONE**

Host Plants: <u>Common Name</u>	<u>Scientific Name</u>
serviceberry, shadbush	<i>Amelanchier</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph, adult	Aug 01	Sep 30	foliage	discoloration, distortion	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph, adult	Aug 10 - Aug 20	1933 - 2173	plant fruit in color: Mountain ash, cranberry bush

Biological Control

	<u>Comments</u>
<i>Orius sp. (predator)</i>	Available commercially; occurs naturally
<i>Hippodamia convergens (lady beetle - predator)</i>	Available commercially; occurs naturally
<i>Diaeretiella rapae (wasp, aphid parasite)</i>	occurs naturally
<i>Deraeocoris nebulosus (mirid bug - predator)</i>	occurs naturally
<i>Chrysoperla sp. (green lacewing - predator)</i>	Available commercially; occurs naturally
<i>Aphidoletes aphidimyza (midge, aphid predator)</i>	Available commercially; occurs naturally
<i>Aphidius matricariae (wasp, aphid parasite)</i>	Available commercially; occurs naturally

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*abamectin	Mauget Abacide 2	BEE CAUTION	W	
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Lepitect	BEE CAUTION	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
	TriStar 8.5 SL	BEE CAUTION	C	12 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
chlorantraniliprole	Acelepryn			4 hours
*clothianidin	Arena 50 WDG		C	12 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C	12 hours
	Merit 75WSP	BEE CAUTION	C	12 hours
*thiamethoxam	Meridian 0.33G	BEE CAUTION	C	12 hours

Additional information on biology and control

Moves to roots from stems.

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

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WOOLLY ELM BARK APHID

Eriosoma rileyi

Page 306 (Johnson & Lyon)

GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **TRUNK, STEM**

Host Plants: Common Name	Scientific Name
elm	<i>Ulmus</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
nymph	May 15	Sep 30	bark, stem	knot and gall	visual inspection
adult	May 15	Sep 30	bark, stem	knot and gall	visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
immature, adult	May 01 - May 10	144 - 228	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry
immature, adult	May 10 - Jul 31	228 - 1673	Remainder of season between the beginning and end phenology
immature, adult	Aug 01 - Aug 10	1700 - 1933	plant bloom: Pee Gee Hydrangea blooms turn pink

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		Comments	Signal Word	Agricultural Restricted Entry Interval (REI)^
*abamectin	Mauget Abacide 2	BEE CAUTION	W	
acephate	Acephate 97 WDG	BEE CAUTION	C	24 hours
	Lepitect	BEE CAUTION	C	24 hours
	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C	12 hours
azadirachtin	Aza-Direct		C	4 hours
	AzaGuard		C	4 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours
carbaryl	Carbaryl 4L	BEE CAUTION	C	12 hours
	Sevin SL	BEE CAUTION	C	12 hours
chlorantraniliprole	Acelepryn			4 hours
*chlorpyrifos	Chlorpyrifos 4E AG	Non-residential, BEE CAUTION	W	24 hours
*clothianidin + bifenthrin	Aloft GC G	BEE CAUTION	C	12 hours
*clothianidin	Arena 50 WDG		C	12 hours
*deltamethrin	Suspend SC	BEE CAUTION	C	
*fenpropathrin	Tame 2.4EC	BEE CAUTION	W	24 hours
horticultural oil	Damoil		C	4 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C	12 hours
	Merit 75WSP	BEE CAUTION	C	12 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

Growing season control may not be necessary if Dormant or Delayed Dormant Season control is effective.

*restricted use pesticide

**ESA approved common name

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Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

Comments

Signal **Agricultural**
Word **Restricted Entry**
 Interval (REI)^

lambda-cyhalothrin	Demand CS	<i>BEE CAUTION</i>	C	
*lambda-cyhalothrin	Scimitar GC	<i>BEE CAUTION</i>	C	24 hours
malathion	Malathion 5 EC	<i>BEE CAUTION</i>	W	12 hours
pymetrozine	Endeavor		C	12 hours
pyrethrin	Pyrenone		C	12 hours
*thiamethoxam	Meridian 0.33G	<i>BEE CAUTION</i>	C	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

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WOOLLY LARCH ADELGID

Adelges laricis

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GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **EXPANDING BUDS AND FOLIAGE**

Host Plants: <u>Common Name</u>	<u>Scientific Name</u>
larch	<i>Larix</i>

Pest Survey Information:

<u>Pest Stage</u>	<u>From</u>	<u>To</u>	<u>Plant Part</u>	<u>Plant Damage</u>	<u>Survey Method</u>
nymph	May 01	Jun 01	foliage	discoloration, gall	visual inspection

Control: Stage(s) and Timing

<u>Stage(s)</u>	<u>Ideal Control Dat</u>	<u>Degree Days</u>	<u>Treat HOST PLANT when the following</u>
nymph	May 01 - May 10	121 - 192	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry
nymph	May 10 - May 20	121 - 192	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal</u>	<u>Agricultural Restricted Entry</u>
			<u>Word</u>	<u>Interval (REI)^</u>
acetamiprid	TriStar 8.5 SL	BEE CAUTION	C	12 hours
*bifenthrin	Talstar P Professional	BEE CAUTION	C	12 hours
*deltamethrin	Suspend SC	BEE CAUTION	C	
horticultural oil	Damoil		C	4 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C	12 hours
	Merit 75WSP	BEE CAUTION	C	12 hours
insecticidal soap	Des-X Insecticidal Soap Concentrate		W	12 hours
	M-Pede		W	12 hours

Signal words: C=Caution; W = Warning; DP = Danger Poison

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GROWING SEASON

Apply thorough treatment only when pest stage found.

Frequency with which pest occurs: **OCCASIONAL**

Part of plant to treat: **TERMINAL SHOOTS**

Host Plants: Common Name	Scientific Name
pine	<i>Pinus</i>

Pest Survey Information:

Pest Stage	From	To	Plant Part	Plant Damage	Survey Method
larva	Apr 15	May 31	terminal shoots	discoloration, dieback	visual inspection
adult	Jun 15	Sep 30	foliage		visual inspection

Control: Stage(s) and Timing

Stage(s)	Ideal Control Dat	Degree Days	Treat HOST PLANT when the following
larva	Apr 20 - Apr 30	from - 96	plants bloom: boxelder, star magnolia, periwinkle, Norway maple
larva	May 01 - May 10	- -	plants bloom: Japanese quince, saucer magnolia, bridalwreath, Japanese flowering cherry
larva	May 10 - May 20	to - 311	plants bloom: redbud, Sargent crabapple, flowering almond, Tatarian honeysuckle
adult	Jun 20 - Jun 30	from - 737	plants bloom: Rhododendron maximum, Spiraea bumalda, Philadelphus
adult	Jul 01 - Jul 10	- -	plants bloom: Ceanothus americanus, Clematis jackmanii, Tilia cordata
adult	Jul 10 - Jul 20	- -	plants bloom: Abelia, golden rain tree, sourwood
adult, larva	Jul 20 - Jul 31	- -	plants bloom: butterfly bush, Clethra alnifolia, false spirea
adult, larva	Aug 01 - Aug 10	to - 1933	plant bloom: Pee Gee Hydrangea blooms turn pink
adult, larva	Aug 10 - Aug 20	1933 - 2173	plant fruit in color: Mountain ash, cranberry bush

Chemical Control

Reference use only. NOT a label substitute.

Select the appropriate insecticide/miticide for the correct life stage of the target pest.

		<u>Comments</u>	<u>Signal Word</u>	<u>Agricultural Restricted Entry Interval (REI)^</u>
*abamectin	Mauget Abacide 2	BEE CAUTION	W	
acephate	Orthene T,T & O WSP	BEE CAUTION	C	24 hours
*bifenthrin	Onyx Pro	BEE CAUTION	W	12 hours
	Talstar P Professional	BEE CAUTION	C	12 hours
*deltamethrin	Suspend SC	BEE CAUTION	C	
*diflubenzuron	Dimilin 25W	Effective against immatures. Bee caution.	C	12 hours
dimethoate	Dimate 4EC	BEE CAUTION	W	48 hours
	Dimethoate 400 EC	BEE CAUTION	W	48 hours
*imidacloprid	Mallet 75 WSP	BEE CAUTION	C	12 hours
	Merit 75WSP	BEE CAUTION	C	12 hours
lambda-cyhalothrin	Demand CS	BEE CAUTION	C	
*lambda-cyhalothrin	Scimitar GC	BEE CAUTION	C	24 hours
*permethrin	Astro	BEE CAUTION	C	12 hours
	Perm-UP 3.2EC	BEE CAUTION	C	12 hours

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