



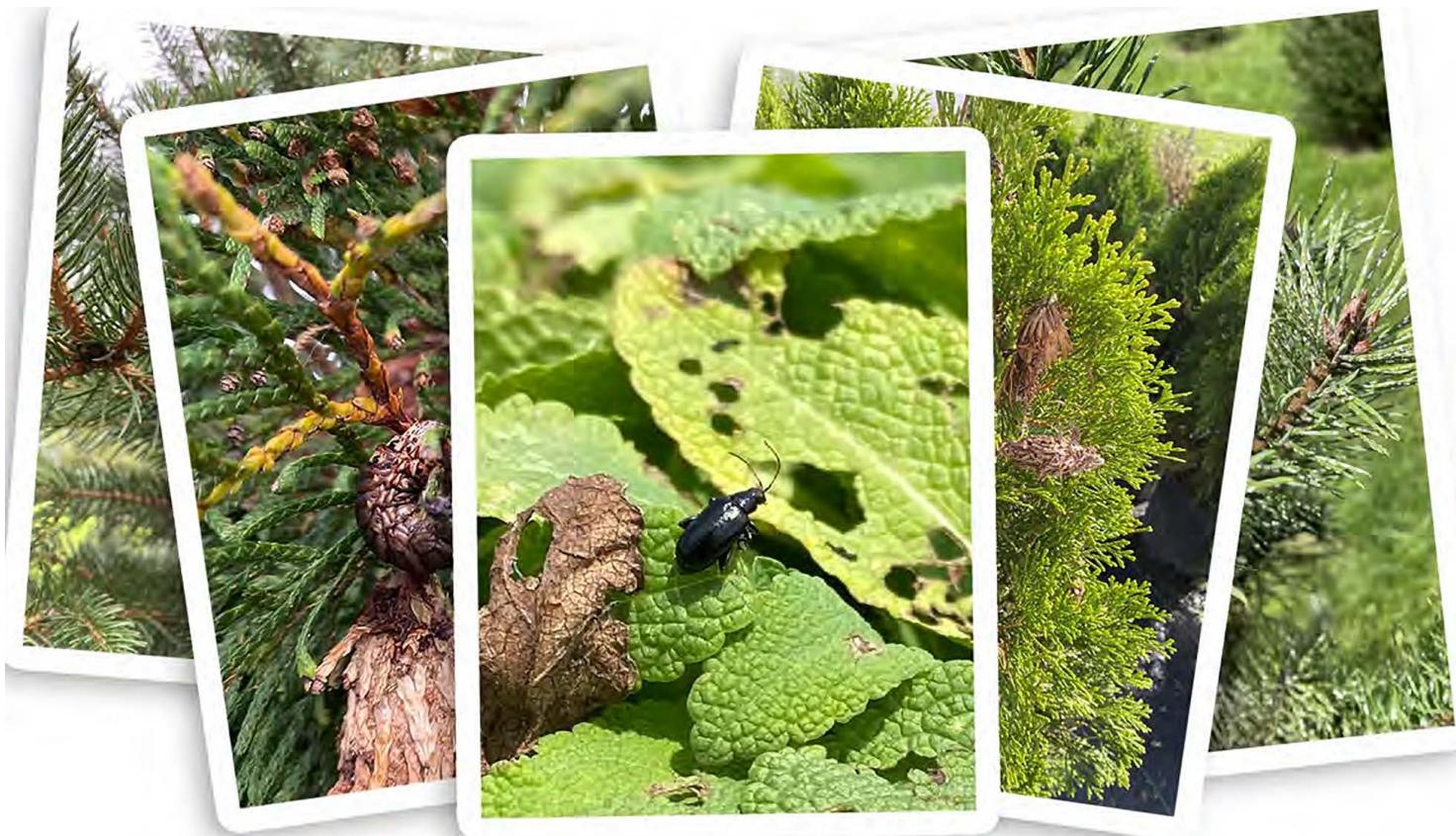
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New Jersey Agricultural
Experiment Station

Beta-version 2023
Contact: twaller@njaes.Rutgers.edu

Nursery & Landscape Pest Scouting Scouting with growing degree-days



Rutgers Green Industry Working Group

Contact: Timothy Waller, Ph.D.

twaller@njaes.Rutgers.edu

WE **R** HERE WHEN YOU NEED US

Cooperating Agencies: Rutgers, The State University of New Jersey, U.S. Department of Agriculture, and County Boards of County Commissioners. Rutgers Cooperative Extension, a unit of the Rutgers New Jersey Agricultural Experiment Station, is an equal opportunity program provider and employer.

Scan here to
Report pest GDD deviations
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Share pest / plant photos



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Timing is everything in pest management! You must obtain your local growing degree-day accumulation values to use this pest scouting guide. Degree-day models allow us to predict when to scout for pests and when to target vulnerable life stages of development (egg hatch, adult emergence, crawler activity, adult flight). Growing degree-days (**GDD50**) refer to the accumulation of heating units, which are the average air temperature over a

24h period minus the minimum temperature threshold. A ‘growing’ degree-day, means the min. (or base) temperature threshold is 50°F, whereas the max. temperature threshold is most often set to 95°F. **Growing degree-days are not exact and should be viewed as ranges, i.e., begin scouting prior to GDD50 expectations for any given pest.** Blind pesticide applications, without ground-truthing pest developmental stage, may not deliver desired outcomes in terms of control or ecological impacts on beneficials or wildlife. Please contact if you require assistance in obtaining your local GDD₅₀ values, which should be checked daily throughout the season. This scouting guide compiles research and observations from multiple universities. Please note many of these ranges have not been ground-truthed outside their original research area/range, and local discrepancies are likely to occur. Hence, we are collectively improving this document, so please alert twaller@njaes.rutgers.edu (856-451-2800 ext.1) if pest observations differ from those listed here or insects not listed, require additional LONT research.

Group	Common Name	Scientific Name	GDD Min (50F)	GDD Max (95F)	Ref.	Developmental / Target Stage / Notes	Favored Host Plants
SORTED BY GROWING DEGREE-DAY ACCUMULATION (Chronological)							
Mites	Conifer rust mites	<i>Eriophyidae</i>	7	22	4	Overwintering eggs hatch	Conifer
Mites	European red mite	<i>Panonychus ulmi</i>	7	58	2	1st adults active	Pomes, Stone fruit
Weevil	White pine weevil	<i>Pissodes strobi</i>	7	58	1	Overwintering adults become active / prevent egg laying	Conifer
Mites	Southern red mite	<i>Oligonychus ilicis</i>	7	91	5	Overwintering eggs hatch	Many
Scale / Adelgid / Whitefly / Psyllid	Taxus mealybug	<i>Dysmicoccus wistariae</i>	7	91	2	Spring control of overwintering stage	Conifer
Scale / Adelgid / Whitefly / Psyllid	Oystershell scale	<i>Lepidosaphes ulmi</i>	7	91	2	Spring control of overwintering stage	Deciduous
Scale / Adelgid / Whitefly / Psyllid	Cottony camellia / taxus scale	<i>Pulvinaria floccifera</i>	7	91	5	Spring control of overwintering stage	Deciduous, Yew
Aphids / Thrips	Aphids	<i>Aphidoidea</i>	7	120	2	Spring control of overwintering stage	Many
Scale / Adelgid / Whitefly / Psyllid	Elongate hemlock scale	<i>Fiorinia externa</i>	7	120	2	Spring control of overwintering stage	Conifer

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Mites	Spruce spider mite	<i>Oligonychus ununguis</i>	7	121	1	Overwintering eggs hatch	Conifer
Scale / Adelgid / Whitefly / Psyllid	Golden oak scale	<i>Asterolecanium variolosum</i>	7	121	5	Spring control of overwintering stage	Oaks
Weevil	Pales weevil	<i>Hylobius pales</i>	7	121	1	Overwintering adults become active / prevent egg laying	Conifer
Scale / Adelgid / Whitefly / Psyllid	Tuliptree scale	<i>Toumeyella liriodendri</i>	12	121	2	Spring control of overwintering stage	Magnoliaceae
Scale / Adelgid / Whitefly / Psyllid	Pine bark adelgid	<i>Pineus strobi</i>	22	58	2	Spring control of overwintering stage	Conifer
Aphids / Thrips	White pine aphid	<i>Cinara strobi</i>	22	91	1	Spring control of overwintering stage	White and Scotch Pine
Scale / Adelgid / Whitefly / Psyllid	Magnolia scale	<i>Neolecanium cornuparvum</i>	22	91	2	Spring control of overwintering stage	Magnoliaceae
Scale / Adelgid / Whitefly / Psyllid	Spruce bud scale	<i>Physokermes piceae</i>	22	120	2	Spring control of overwintering stage	Conifer
Scale / Adelgid / Whitefly / Psyllid	Juniper scale	<i>Carulaspis juniperi</i>	22	148	2	Spring control of overwintering stage	Conifer
Caterpillar	Zimmerman pine moth	<i>Dioryctria zimmermani</i>	25	100	3	1st larvae	Conifer
Scale / Adelgid / Whitefly / Psyllid	Eastern spruce gall adelgid	<i>Adelges abietis</i>	25	100	3	Spring control of overwintering stage	Conifer
Weevil	Northern pine weevil	<i>Pissodes approximatus</i>	25	100	4	1st adults active	Conifer
Scale / Adelgid / Whitefly / Psyllid	Cooley spruce gall adelgid	<i>Adelges cooleyi</i>	25	120	3	Spring control of overwintering stage	Conifer
Weevil	White pine weevil	<i>Pissodes strobi</i>	25	220	4	1st adults active	Conifer
Scale / Adelgid / Whitefly / Psyllid	Euonymus scale	<i>Unaspis euonymi</i>	35	120	2	Spring control of overwintering stage	Many, evergreen

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Sawfly - Wasp	European pine sawfly	<i>Neodiprion sertifer</i>	35	145	1	Hatched larvae	Conifer
Scale / Adelgid / Whitefly / Psyllid	European fruit lecanium scale	<i>Parthenolecanium corni</i>	35	145	2	Spring control of overwintering stage	Shade trees
Scale / Adelgid / Whitefly / Psyllid	Fletcher scale	<i>Parthenolecanium fletcheri</i>	35	148	2	Spring control of overwintering stage	Conifer
Caterpillar	European pine shoot moth / borer	<i>Rhyacionia buoliana</i>	50	220	4	1st larvae active	Conifer
Mites	Maple bladdergall mite	<i>Vasates quadripedes</i>	58	148	2	Spring control of overwintering stage	Maples
Scale / Adelgid / Whitefly / Psyllid	Pine tortoise scale	<i>Toumeyela parvicornis</i>	58	148	2	Cralwer activity	Conifer
Hemiptera (true bugs)	Honeylocust plant bug	<i>Diaphorinocoris chlorionis</i>	58	246	2	Nymphs / adults active	Honeylocust
Scale / Adelgid / Whitefly / Psyllid	Pine bark adelgid	<i>Pineus strobi</i>	58	618	2	Spring control of overwintering stage	Conifer
Aphids / Thrips	Balsam twig aphid	<i>Mindarus abietinus</i>	60	100	4	Egg hatch	Conifer
Mites	Southern red mite	<i>Oligonychus ilicis</i>	69	157	1	Spring hatch	Many
Borer - Caterpillar	Eastern pine shoot borer	<i>Eucosma gloriola</i>	75	200	4	1st adults active	Conifer
Scale / Adelgid / Whitefly / Psyllid	Cooley spruce gall adelgid	<i>Adelges cooleyi</i>	90	180	4	1st adults active - Douglas fir	Conifer
Caterpillar	Eastern tent caterpillar	<i>Malacosoma americanum</i>	90	190	2	Larvae treatment before tents apparent (near 150-GDD50)	Malus, Prunus, many
Caterpillar	Spongy moth (formerly Gypsy)	<i>Lymantria dispar</i>	90	448	1	Larvae treatment (early instars)	Many
Aphids / Thrips	Balsam twig aphid	<i>Mindarus abietinus</i>	100	150	4	Stem mothers present (control target)	Conifer
Beetle	Pine engraver (Ips bark beetle)	<i>Ips spp.</i>	100	150	4	1st adults active	Conifer

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Sawfly - Wasp	European pine sawfly	<i>Neodiprion sertifer</i>	100	195	4	1st larvae active	Conifer
Lacebug	Andromeda lacebug	<i>Stephanitis takeyai</i>	115	279	1	Nymphs (1st generation)	Pieris
Lacebug	Azalea lace bug	<i>Stephanitis pyrioides</i>	118	372	1	Nymphs (1st generation)	Azalea
Caterpillar	Larch casebearer	<i>Coleophora laricella</i>	120	150	4	Egg hatch	Conifer
Aphids / Thrips	Woolly elm aphid	<i>Eriosoma americana</i>	121	246	2 (6)	Control target	Elm, Service berry
Caterpillar	Spongy moth (formerly Gypsy)	<i>Lymantria dispar</i>	145	200	4	Egg hatch, 1st larvae	Many
Leafminer / Midge / Fly	Holly leafminer	<i>Phytomyza ilicis</i>	147	265	1	Adults - egg laying	Holly
Caterpillar	Cankerworms, inch-worms, loopers	(many)	148	290	2	Larvae treatment	Many
Borer - Clearwing moth	Lilac / Ash Borer	<i>Podosesia syringae</i>	148	299	2	Adult flight	Lilac, ash, privet, many
Weevil	Black Vine Weevil	<i>Otiorhynchus sulcatus</i>	148	400	2	Pupation / Adult emergence	Yews, Rhododendrons, many
Borer - Clearwing moth	Dogwood Borer	<i>Synanthedon scitula</i>	148	700	2	Adult activity	Dogwood, many
Scale / Adelgid / Whitefly / Psyllid	Hemlock woolly adelgid	<i>Adelges tsugae</i>	150	150	1	Eggs and 10% hatch	Conifer
Mites	Spruce spider mite	<i>Oligonychus ununguis</i>	150	175	4	1st egg hatch	Conifer
Caterpillar	Spruce needleminer	<i>Endothenia albolineana</i>	150	200	4	1st larvae active	Conifer
Leafminer / Midge / Fly	Balsam gall midge	<i>Paradiplosis tumifex</i>	150	300	4	Adults laying eggs	Conifer
Aphids / Thrips	Spiny witchhazel gall aphid	<i>Hamamelistes spinosus</i>	171	-	6	Control target	Witchhazel, River birch
Leafminer / Midge / Fly	Birch leafminer	<i>Fenusia pusilla</i>	190	290	1	Larvae (1st generation)	Birch

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Mites	Spruce spider mite	<i>Oligonychus ununguis</i>	190	363	1	Immatures/Adults	Conifer
Leafminer / Midge / Fly	Honeylocust pod gall midge	<i>Dasineura gleditchiae</i>	192	229	1	Larvae	Honeylocust
Leafminer / Midge / Fly	Holly leafminer	<i>Phytomyza ilicis</i>	192	290	1	Egg hatch	Holly
Borer - Clearwing moth	Rhododendron borer	<i>Synanthedon rhododendri</i>	192	298	2	Typical treatment window	Rhododendron
Leafminer / Midge / Fly	*Native holly leafminer	<i>Phytomyza ilicicola</i>	192	298	2	Egg hatch	Holly
Sawfly - Wasp	Larch sawfly	<i>Pristophora erichsonii</i>	192	299	2	Typical treatment window	Larch
Lacebug	Andromeda lacebug	<i>Stephanitis takeyai</i>	192	303	1	Adults	Andromeda
Leafminer / Midge / Fly	Rhododendron gall midge	<i>Clinodiplosis rhododendri</i>	192	363	1	Larvae	Rhododendron
Beetle	Imported willow leaf beetle	<i>Plagiodera versicolora</i>	192	448	1	Larvae/Adults	Willows, Cottonwood, Poplar
Aphids / Thrips	Privet thrips	<i>Dendrothrips ornatus</i>	192	618	2	Typical treatment window	Privet
Scale / Adelgid / Whitefly / Psyllid	Tea scale	<i>Fiorinia theae</i>	195	-	6	Crawlers (1st generation)	Holly, Camellia, many
Borer - Clearwing moth	Lilac / Ash Borer	<i>Podosesia syringae</i>	200	299	1	Adults - 1st Treatment	Lilac, ash, privet, many
Caterpillar	Spruce budworm	<i>Choristoneura fumiferana</i>	200	300	5	Larvae	Spruce
Scale / Adelgid / Whitefly / Psyllid	Cooley spruce gall adelgid	<i>Adelges cooleyi</i>	200	310	4	1st galls visible - Spruce	Conifer
Leafminer / Midge / Fly	Douglas fir needle midge	<i>Contarinia pseudotsugae</i>	200	400	3	Adults emerge from soil	Conifer
Leafminer / Midge / Fly	Elm leafminer	<i>Fenus ulmi</i>	215	240	5	Adult emergence	Elm
Cicadellidae	Spotted Lantern Fly	<i>Lycorma delicatula</i>	225	1100	9	1st-4th Instar (nymphs) - control target	Many

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Sawfly - Wasp	Roseslug sawfly	<i>Endelomyia aethiops</i>	230	-	6	Egg hatch / early instars	Wild and cultivated roses
Lacebug	Hawthorn lacebug	<i>Corythucha cydoniae</i>	239	363	1	Nymphs/Adults	Deciduous, many
Beetle	Redheaded flea beetle	<i>Systema frontalis</i>	242	600	8	First control target - egg hatch / larval activity	Many
Leafminer / Midge / Fly	Arborvitae leafminer	<i>Argyresthia thuiella</i>	245	360	1	Larvae Treatments (1st generation)	Conifer
Borer - Caterpillar	American plum borer	<i>Euzophera semifuneralis</i>	245	440	5	Adult flight, egg laying	Prunus
Mites	Boxwood mites	<i>Eurytetranychus buxi</i>	245	600	1	All Stages	Boxwood
Leafminer / Midge / Fly	Lilac leafminer	<i>Caloptilia syringella</i>	246	363	5	Larvae Treatments	Lilac
Leafminer / Midge / Fly	Holly leafminer	<i>Phytomyza ilicis</i>	246	448	1	Larvae Treatment	Holly
Scale / Adelgid / Whitefly / Psyllid	Taxus mealybug	<i>Dysmicoccus wistariae</i>	246	618	1	Adults/Crawlers	Yew
Sawfly - Wasp	Pine sawflies (Red-headed)	<i>Neodiprion lecontei</i>	246	1388	1	Larvae (1st generation)	Conifer
Leafminer / Midge / Fly	Boxwood leafminer	<i>Monarthropalpus flavus</i>	249	-	6	Adult emergence	Boxwood
Scale / Adelgid / Whitefly / Psyllid	Eastern spruce gall adelgid	<i>Adelges abietis</i>	250	310	5	egg hatch, galls begin forming (not a control target)	Conifer
Leafminer / Midge / Fly	Birch Leafminer	<i>Fenusana pusilla</i>	275	375	4	Adults laying eggs	Birch
Scale / Adelgid / Whitefly / Psyllid	Boxwood Psyllid	<i>Cacopsylla busi</i>	290	440	1	Nymphs	Boxwood
Scale / Adelgid / Whitefly / Psyllid	Pine Needle Scale	<i>Chionaspis pinifoliae</i>	298	448	1	Crawlers (1st generation) - control target	Conifer
Leafminer / Midge / Fly	Locust leafminer	<i>Odontota dorsalis</i>	298	533	5	Typical treatment window	Locust
Mites	Pine eriophyid mites	<i>Eriophyidae</i>	298	533	5	Typical treatment window	Conifer

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Caterpillar	Redbanded leafroller	<i>Argyrotaenia velutinana</i>	298	618	5	Typical treatment window	Malus
Mites	Privet rust mite	<i>Aculus ligustri</i>	298	802	1	All stages	Privet
Scale / Adelgid / Whitefly / Psyllid	Kermes oak scale	<i>Allokermes spp.</i>	298	912	5	Typical treatment window	Oaks
Beetle	Turpentine beetle	<i>Dendroctonus terebrans</i>	300	350	4	Parent beetles colonizing brood material	Conifer
Weevil	Pine root collar weevil	<i>Hylobius radicis</i>	300	350	4	1st adults active	Conifer
Aphids / Thrips	Spirea aphid	<i>Aphis spiraecola</i>	326	-	6	Adults/nymphs	Spirea
Scale / Adelgid / Whitefly / Psyllid	Hemlock woolly adelgid	<i>Adelges tsugae</i>	350	350	1	Eggs and 50% hatch	Conifer
Borer - Clearwing moth	Lesser peach tree borer	<i>Synanthedon pictipes</i>	350	375	4	Adult flight, egg laying	Malus, Prunus, many
Lacebug	Azalea Lacebug	<i>Stephanitis pyrioides</i>	350	646	1	Adults (1st generation)	Rhododendron
Borer - Clearwing moth	Dogwood borer	<i>Synanthedon scitula</i>	350	850	4	adults, eggs, caterpillars	Dogwood, apple, pecan, elm, hickory, willow
Scale / Adelgid / Whitefly / Psyllid	Elongate Hemlock Scale	<i>Fiorinia externa</i>	360	700	1	Crawlers (1st generation)	Conifer
Beetle	Elm leaf beetle	<i>Xanthogaleruca luteola</i>	363	530	1	Larvae treatment (1st generation)	Elm
Caterpillar	Larch casebearer	<i>Coleophora laricella</i>	363	618	2,4	Nymphs active - typical treatment window	Conifer
Aphids / Thrips	Woolly beech aphids	<i>Glylloprociphilus imbricator & Phylaphis fagi</i>	363	707	5	Typical treatment window	Beech
Mites	Walnut blister mite	<i>Eriophyes erinea</i>	363	707	5	Typical treatment window	Walnut
Scale / Adelgid / Whitefly / Psyllid	Oystershell Scale	<i>Lepidosaphes ulmi</i>	363	707	1	Crawlers	Many

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Leafminer / Midge / Fly	Pine needle midge	<i>Thecodiplosis brachynterooides</i>	400	500	7	Adults (1st generation)	Conifer
Scale / Adelgid / Whitefly / Psyllid	Striped pine scale	<i>Toumeyella sp.</i>	400	500	3	Crawlers (1st generation)	Conifer
Scale / Adelgid / Whitefly / Psyllid	Pine tortoise scale	<i>Toumeyella parvicornis</i>	400	1000	4	Crawlers	Conifer
Weevil	Black Vine Weevil	<i>Otiorhynchus sulcatus</i>	400	2800	1	Adults treatment	Yews, Rhododendrons, many
Lacebug	Basswood lacebug	<i>Gargaphia tiliae</i>	415	-	6	Adults/nymphs	Basswood
Hemiptera (true bugs)	Fourlined plant bug	<i>Poecilocapsus lineatus</i>	435	-	6	Egg hatch / early instars	Many
Mites	Two-Spotted Mite	<i>Tetranychus urticae</i>	437	997	1	Adults (build-up activity)	Many
Borer - Flathead / Metallic beetle	Bronze Birch Borer	<i>Agrilus anxius</i>	440	880	1	Adults (egg laying)	Birch
Leafminer / Midge / Fly	Boxwood Leafminer	<i>Monarthropalpus flavus</i>	448	700	1	Larvae treatment	Boxwood
Scale / Adelgid / Whitefly / Psyllid	Azalea whitefly	<i>Pealius azaleae</i>	448	700	5	Adults/nymphs (1st generation)	Rhododendron
Caterpillar	Hemlock looper	<i>Lambdina fiscellaria</i>	448	707	5	Typical treatment window	Conifer
Caterpillar	Oak skeletonizer	<i>Bucculatrix ainsliella</i>	448	707	5	Typical treatment window	Oak
Beetle	Pine shoot beetle	<i>Tomicus piniperda</i>	450	500	4	Adults emerge; begin shoot feeding - control target	Conifer
Beetle	Pine Chafer (Anomela Beetle)	<i>Anomala obliqua</i>	450	600	7	Adults (1st generation)	Conifer
Caterpillar	Spongy moth (formerly Gypsy)	<i>Lymantria dispar</i>	450	900	4	Caterpillar to pupation - control target missed	Many
Scale / Adelgid / Whitefly / Psyllid	Maskell scale	<i>Lepidosaphes pallida</i>	470	-	6	Crawlers (1st generation)	Juniper

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Caterpillar	European pine shoot moth	<i>Rhyacionia buoliana</i>	480	710	5	Larvae Treatment	Conifer
Scale / Adelgid / Whitefly / Psyllid	Peach Tree Borer	<i>Synanthedon sp.</i>	500	600	1	Adults - emerge (1st treatment both types)	Malus, Prunus, many
Borer - Clearwing moth	Rhododendron borer	<i>Synanthedon rhododendri</i>	509	696	1	Adults emerge	Rhododendron
Scale / Adelgid / Whitefly / Psyllid	White prunicola scale	<i>Pseudaulacaspis prunicola</i>	513	-	6	Crawlers (1st generation)	Many
Beetle	Redheaded flea beetle	<i>Systema frontalis</i>	517	1028	8	Adults - feeding / laying eggs	Many
Scale / Adelgid / Whitefly / Psyllid	Cottony camellia / taxus scale	<i>Pulvinaria floccifera</i>	520	-	6	Crawlers (1st generation)	Many
Leafminer / Midge / Fly	Birch Leafminer	<i>Fenusia pusilla</i>	530	700	1	Larvae (2nd generation)	Birch
Leafminer / Midge / Fly	Arborvitae Leafminer	<i>Argyresthia thuiella</i>	533	700	1	Adults (egg laying) - larvae treatments	Conifer
Scale / Adelgid / Whitefly / Psyllid	Euonymus Scale	<i>Unaspis euonymil</i>	533	820	1	Crawlers (1st generation)	Euonymus
Leafminer / Midge / Fly	Oak blotch leafminers	<i>Cameraria spp. ; Tisheria spp.</i>	533	912	5	Typical treatment window	Oak
Caterpillar	Greenstriped mapleworm	<i>Dryocampa rubicunda</i>	533	1645	5	Control target	Maple
Leafminer / Midge / Fly	Balsam gall midge	<i>Paradiplosis tumifex</i>	550	700	4	Galls apparent	Conifer
Scale / Adelgid / Whitefly / Psyllid	Juniper scale	<i>Carulaspis juniperi</i>	550	700	7	Egg hatch	Conifer
Borer - Clearwing moth	Greater peach tree borer	<i>Synanthedon exitiosa</i>	575	710	4	Adult emergence	Malus, Prunus, many
Scale / Adelgid / Whitefly / Psyllid	Cryptomeria scale	<i>Aspidiotus cryptomeriae</i>	600	800	3	First crawler emergence	Conifer
Caterpillar	Bagworm	<i>Thyridopteryx ephemeraeformis</i>	600	900	1	Larvae (early instars) - ONLY CONTROL WINDOW	Conifer

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Scale / Adelgid / Whitefly / Psyllid	Cooley spruce gall adelgid	<i>Adelges cooleyi</i>	600	1000	7	Nymphs active - Douglas fir (control target)	Conifer
Beetle	Elm leaf beetle	<i>Xanthogaleruca luteola</i>	600	1300	7	Larvae (2nd generation)	Elm
Scale / Adelgid / Whitefly / Psyllid	Sprucebud scale	<i>Physokermes hemicyrus</i>	700	1150	4	Crawlers (1st generation)	Conifer
Scale / Adelgid / Whitefly / Psyllid	White prunicola scale	<i>Pseudaulacaspis prunicola</i>	707	1151	1	Crawlers (1st generation)	Many
Scale / Adelgid / Whitefly / Psyllid	Juniper scale	<i>Carulaspis juniperi</i>	707	1260	1	Crawlers (1st generation)	Conifer
Scale / Adelgid / Whitefly / Psyllid	Calico scale	<i>Eulecanium cerasorum</i>	714	-	6	Crawlers (1st generation)	Many
Scale / Adelgid / Whitefly / Psyllid	Striped pine scale	<i>Toumeyella pini</i>	750	800	4	Egg hatch	Conifer
Hemiptera (true bugs)	Hairy chinch bug	<i>Blissus leucopterus</i>	765	870	1	1st generation (50% - 2nd instar)	Turf
Scale / Adelgid / Whitefly / Psyllid	Oak lecanium scale	<i>Parthenolecanium quercifex</i>	789	-	6	Crawlers (1st generation)	Oak, hickory, birch, many
Lacebug	Azalea Lacebug	<i>Stephanitis pyrioides</i>	802	1029	1	Eggs / Nymphs 3rd Generation	Rhododendron
Borer - Roundhead / Longhorn	Roundheaded appletree borer	<i>Saperda candida</i>	802	1129	1	Adults	Many
Mites	Oak spider mites	<i>Oligonychus bicolor</i>	802	1265	1	All Stages	Oaks
Scale / Adelgid / Whitefly / Psyllid	Cottony maple leaf scale	<i>Pulvinaria acericola</i>	802	1265	5	Crawlers (1st generation)	Acer
Scale / Adelgid / Whitefly / Psyllid	Cottony maple scale	<i>Pulvinaria innumerabilis</i>	802	1265	1	Crawlers (1st generation) - control target	Many, shadetrees
Scale / Adelgid / Whitefly / Psyllid	Golden oak scale	<i>Asterolecanium variolosum</i>	802	1266	5	Egg hatch	Oaks

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Scale / Adelgid / Whitefly / Psyllid	Japanese maple scale	<i>Lopholeucaspis japonica</i>	829	-	6	Crawlers (1st generation)	Maples
Scale / Adelgid / Whitefly / Psyllid	European elm scale	<i>Gossyparia spuria</i>	831	1388	6,2	Crawlers (1st generation)	Elm
Caterpillar	Mimosa webworm	<i>Homadaula anisocentra</i>	880	-	1	Larvae (1st generation)	Mimosa, Honeylocust
Weevil	Bluegrass billbug	<i>Sphenophorus parvulus</i>	884	1003	1	Larvae 20%	Turf
Beetle	N. masked chafer beetle	<i>Cyclocephala borealis</i>	898	905	1	1st adults	Turf
Mites	Honeylocust mite	<i>Eotetranychus multidigituli</i>	912	1514	2	All Stages	Honeylocust
Mites	Honeylocust spider mite	<i>Platyteanychus multidigituli</i>	912	1514	5	Typical treatment window	Honeylocust
Scale / Adelgid / Whitefly / Psyllid	European fruit lecanium scale	<i>Parthenolecanium corni</i>	932	1645	6,1	Crawlers - control target	Shade trees
Beetle	Japanese beetle	<i>Popillia japonica</i>	950	2150	5	Adults emerge and feed	Many
Borer - Flathead / Metalic beetle	Emerald ash borer	<i>Agrilus planipennis</i>	1000	1200	4	Peak adult activity	Ash
Scale / Adelgid / Whitefly / Psyllid	Pine tortoise scale	<i>Toumeyella parvicornis</i>	1000	1200	4	Egg hatch ends, last of crawlers	Conifer
Cicadellidae	Spotted Lantern Fly	<i>Lycorma delicatula</i>	1000	-	9	Adults	Many
Beetle	Redheaded flea beetle	<i>Systema frontalis</i>	1028	1570	8	2nd generation of un-hatched eggs	Many
Leafminer / Midge / Fly	Locust leafminer	<i>Odontota dorsalis</i>	1029	1388	1	Adults	Locust
Scale / Adelgid / Whitefly / Psyllid	Fletcher Scale (Yew)	<i>Parthenolecanium fletcheri</i>	1029	1388	1	Crawlers (1st generation) - control target	Yew, many conifers
Caterpillar	Walnut Caterpillar	<i>Datana integerrima</i>	1029	1514	2	Larvae Treatment	Juglandaceae

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Weevil	Bluegrass billbug	<i>Sphenophorus parvulus</i>	1094	1217	1	Larvae (40%)	Turf
Scale / Adelgid / Whitefly / Psyllid	Indian wax scale	<i>Ceroplastes ceriferus</i>	1145	-	6	Crawlers (1st generation)	Many
Beetle	Oriental Beetle	<i>Anomala orientalis</i>	1147	-	6	Adult emergence	Many
Scale / Adelgid / Whitefly / Psyllid	Euonymus Scale	<i>Unaspis euonymil</i>	1150	1388	5	2nd generation targeted treatments	Euonymus
Sawfly - Wasp	Dogwood sawfly	<i>Macremphytus tarsatus</i>	1151	1500	1	Larvae Treatment	Dogwood
Aphids / Thrips	Tuliptree aphid	<i>Illinoia liriodendri</i>	1151	1514	1	Nymphs / adults	Tulip
Leafminer / Midge / Fly	Boxwood leafminer	<i>Monoarthropalus flavus</i>	1200	1400	5	Larvae Treatment	Boxwood
Weevil	Northern pine weevil	<i>Pissodes nemorensis</i>	1200	1400	4	2nd generation adults active	Conifer
Weevil	Pales weevil	<i>Hylobius pales</i>	1200	1400	4	Adults 2nd generation	Conifer
Weevil	Pine root collar weevil	<i>Hylobius radicis</i>	1200	1400	4	2nd generation adults active	Conifer
Weevil	White pine weevil	<i>Pissodes strobi</i>	1200	1400	4	2nd generation adults active	Conifer
Scale / Adelgid / Whitefly / Psyllid	Azalea whitefly	<i>Pealius azaleae</i>	1250	1500	5	Adults/nymphs (2nd generation)	Rhododendron
Caterpillar	Bluegrass sod webworm	<i>Parapediasia teterrella</i>	1250	1920	1	Larvae	Turf
Mites	Privet rust mite	<i>Aculus ligustri</i>	1266	1515	5	Second typical treatment window	Privet
Cicadellidae	Leafhoppers	Species within Cicadellidae	1266	1544	1	Nymphs / adults	Many
Lacebug	Lacebugs (on hawthorn)	<i>Corythucha cydoniae</i>	1266	1544	1	Nymphs / adults	Many
Caterpillar	Birch Skeletonizer	<i>Bucculatrix canadensisella</i>	1266	1580	5	Typical treatment window	Birch

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Caterpillar	Fall webworm	<i>Hyphantria cunea</i>	1266	1795	2	Caterpillars present - larvae treatment	Many
Scale / Adelgid / Whitefly / Psyllid	Pine Needle Scale	<i>Chionaspis pinifoliae</i>	1290	1917	3	Crawlers emerge (2nd generation) - control target	Conifer
Mites	Two spotted spider mite	<i>Tetranychus urticae</i>	1300	2000	1	Nymphs / adults	Many
Beetle	N. masked chafer beetle	<i>Cyclocephala borealis</i>	1377	1579	1	Adults (90%)	Turf
Leafminer / Midge / Fly	Lilac leafminer	<i>Caloptilia syringella</i>	1388	1644	5	Typical treatment window	Lilac
Scale / Adelgid / Whitefly / Psyllid	Hemlock scale	<i>Abgrallaspis ithacae</i>	1388	2154	5	Typical treatment window	Conifer
Scale / Adelgid / Whitefly / Psyllid	Cooley spruce gall adelgid	<i>Adelges cooleyi</i>	1500	1775	1	Adults/nymphs (Douglas Fir)	Conifer
Scale / Adelgid / Whitefly / Psyllid	Peachtree borer	<i>Synanthedon sp.</i>	1500	1800	1	Larvae Treatment	Malus, Prunus, many
Borer - Roundhead / Longhorn	Roundheaded apple tree borer	<i>Saperda candida</i>	1514	1798	5	Typical treatment window	Many
Borer - Caterpillar	Nantucket tip moth	<i>Rhyacionia frustrana</i>	1514	1917	1	Adults 2nd generation	Conifer
Beetle	Redheaded flea beetle	<i>Systema frontalis</i>	1570	1860	8	2nd generation egg hatch	Many
Beetle	Japanese beetle	<i>Popillia japonica</i>	1590	1925	1	Adults (90%)	Many
Scale / Adelgid / Whitefly / Psyllid	White prunicola scale	<i>Pseudaulacaspis prunicola</i>	1637	-	6	Egg hatch / crawler (2nd generation)	Many
Mites	Rust-mites	<i>Nalepella and Setoptus spp.</i>	1644	2030	1	Nymphs / adults	Conifer
Aphids / Thrips	Willow twig aphids	<i>Lachnus spp.</i>	1644	2271	5	Typical treatment window	Willow
Weevil	Two-banded Japanese weevil	<i>Pseudocneorhinus bifasciatus</i>	1644	2271	1	Adults	Many

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Caterpillar	Juniper webworm	<i>Dichomeris marginella</i>	1645	1917	1	Larvae Treatment	Conifer
Scale / Adelgid / Whitefly / Psyllid	Euonymus Scale	<i>Unaspis euonymil</i>	1700	-	1	Continued 2nd generation treatments	Euonymus
Scale / Adelgid / Whitefly / Psyllid	Cryptomeria scale	<i>Aspidiotus cryptomeriae</i>	1750	2130	1, 4	Crawlers emerge (2nd generation)	Conifer
Scale / Adelgid / Whitefly / Psyllid	Obscure scale	<i>Melanaspis obscura</i>	1774	-	6	Egg hatch / crawler	Many
Caterpillar	Oak skeletonizer	<i>Bucculatrix ainsliella</i>	1798	2155	1	Larvae	Oaks
Caterpillar	Mimosa webworm	<i>Homadaula anisocentra</i>	1800	2100	1	Larvae (2nd generation)	Mimosa, Honeylocust
Leafminer / Midge / Fly	Arborvitae leafminer	<i>Argyresthia thuiella</i>	1800	2200	1	Larvae Treatment (3rd generation)	Conifer
Scale / Adelgid / Whitefly / Psyllid	Cooley spruce gall adelgid	<i>Adelges cooleyi</i>	1850	1950	1	Galls open (Spruce)	Conifer
Hemiptera (true bugs)	Hairy chinch bug	<i>Blissus leucopterus</i>	1903	2160	1	Second generation- 50%- 2nd instars	Turf
Aphids / Thrips	Tuliptree aphid	<i>Illinoia liriodendri</i>	1917	2033	1	Nymphs	Tulip
Caterpillar	Zimmerman pine moth	<i>Dioryctria zimmermani</i>	1917	2154	5	Treatment window (adult flight- 1700 GDD)	Conifer
caterpillar	Orangestriped oakworm	<i>Anisota senatoria</i>	1917	-	6	Egg hatch - early instars	Mainly Oaks
Aphids / Thrips	White pine aphid	<i>Cinara strobi</i>	1991	2271	1	Adults	Conifer
Scale / Adelgid / Whitefly / Psyllid	Gloomy scale	<i>Melanaspis tenebricosa</i>	2000	3000	6*	Crawlers emerge. (1 generation) * Approximate range, more data needed.	Maple, many
Scale / Adelgid / Whitefly / Psyllid	Azalea whitefly	<i>Pealius azaleae</i>	2032	2150	5	Adults/nymphs (3rd generation)	Rhododendron
Borer - Roundhead / Longhorn	Sugar maple borer	<i>Glycobius speciosus</i>	2032	2375	5	Typical treatment window	Maple

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Scale / Adelgid / Whitefly / Psyllid	Maskell scale	<i>lepidosaphes pallia</i>	2035	-	6	Egg hatch / crawler (2nd generation)	Conifer
Scale / Adelgid / Whitefly / Psyllid	Tulip tree scale	<i>Toumeyella liriodendri</i>	2037	2629	1	Crawlers (1st generation)	Mainly Tulip
Scale / Adelgid / Whitefly / Psyllid	Magnolia scale	<i>Neolecanium cornuparvum</i>	2155	2800	1	Crawlers (1st generation)	Mainly Magnolia
Borer - Roundhead / Longhorn	Locust borer	<i>Magacyllene robiniae</i>	2271	2805	5	Typical treatment window	Locust
Weevil	Poplar and willow borer	<i>Crytorhynchus lapathi</i>	2271	2806	5	Typical treatment window	Poplar and Willow
Mites	Spruce spider mite	<i>Oligonychus ununguis</i>	2375	2806	5	Typical treatment window	Conifer
Mites	Southern red mite	<i>Oligonychus ilicis</i>	2500	2700	5	Typical treatment window	Many
Scale / Adelgid / Whitefly / Psyllid	Japanese maple scale	<i>Lopholeucaspis japonica</i>	2508	-	6	Egg hatch / crawler (2nd generation)	Maple
Scale / Adelgid / Whitefly / Psyllid	Elongate hemlock scale	<i>Fiorinia externa</i>	2515	2625	1	Typical treatment window - fall activity	Conifer
Scale / Adelgid / Whitefly / Psyllid	Fletcher Scale (Yew)	<i>Parthenolecanium fletcheri</i>	2515	2800	1	Fall control of overwintering stage	Yew, many conifers
Caterpillar	Fall webworm	<i>Hyphantria cunea</i>	2793	-	6	Egg hatch / crawler (2nd generation)	Hardwoods
Scale / Adelgid / Whitefly / Psyllid	Cooley spruce gall adelgid	<i>Adelges cooleyi</i>	2800	3000	3	Fall control of overwintering stage	Conifer
Scale / Adelgid / Whitefly / Psyllid	Eastern spruce gall adelgid	<i>Adelges abietis</i>	2800	3000	3	Fall control of overwintering stage	Conifer
SORTED BY INSECT GROUP							
Aphids / Thrips	Aphids	<i>Aphidoidea</i>	7	120	2	Spring control of overwintering stage	Many

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Aphids / Thrips	White pine aphid	<i>Cinara strobi</i>	22	91	1	Spring control of overwintering stage	White and Scotch Pine
Aphids / Thrips	Balsam twig aphid	<i>Mindarus abietinus</i>	60	100	4	Egg hatch	Conifer
Aphids / Thrips	Balsam twig aphid	<i>Mindarus abietinus</i>	100	150	4	Stem mothers present (control target)	Conifer
Aphids / Thrips	Woolly elm aphid	<i>Eriosoma americana</i>	121	246	2 (6)	Control target	Elm, Service berry
Aphids / Thrips	Spiny witchhazel gall aphid	<i>Hamamelistes spinosus</i>	171	-	6	Control target	Witchhazel, River birch
Aphids / Thrips	Privet thrips	<i>Dendrothrips ornatus</i>	192	618	2	Typical treatment window	Privet
Aphids / Thrips	Spirea aphid	<i>Aphis spiraecola</i>	326	-	6	Adults/nymphs	Spirea
Aphids / Thrips	Woolly beech aphids	<i>Glylloprociphilus imbricator & Phyllaphis fagi</i>	363	707	5	Typical treatment window	Beech
Aphids / Thrips	Tuliptree aphid	<i>Illinoia liriodendri</i>	1151	1514	1	Nymphs / adults	Tulip
Aphids / Thrips	Willow twig aphids	<i>Lachnus spp.</i>	1644	2271	5	Typical treatment window	Willow
Aphids / Thrips	Tuliptree aphid	<i>Illinoia liriodendri</i>	1917	2033	1	Nymphs	Tulip
Aphids / Thrips	White pine aphid	<i>Cinara strobi</i>	1991	2271	1	Adults	Conifer
Beetle	Pine engraver (<i>Ips</i> bark beetle)	<i>Ips spp.</i>	100	150	4	1st adults active	Conifer
Beetle	Imported willow leaf beetle	<i>Plagiodera versicolora</i>	192	448	1	Larvae/Adults	Willows, Cottonwood, Poplar
Beetle	Redheaded flea beetle	<i>Systema frontalis</i>	242	600	8	First control target - egg hatch / larval activity	Many
Beetle	Turpentine beetle	<i>Dendroctonus terebrans</i>	300	350	4	Parent beetles colonizing brood material	Conifer
Beetle	Elm leaf beetle	<i>Xanthogaleruca luteola</i>	363	530	1	Larvae treatment (1st generation)	Elm
Beetle	Pine shoot beetle	<i>Tomicus piniperda</i>	450	500	4	Adults emerge; begin shoot feeding - control target	Conifer

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Beetle	Pine Chafer (Anomela Beetle)	<i>Anomala obliqua</i>	450	600	7	Adults (1st generation)	Conifer
Beetle	Redheaded flea beetle	<i>Systema frontalis</i>	517	1028	8	Adults - feeding / laying eggs	Many
Beetle	Elm leaf beetle	<i>Xanthogaleruca luteola</i>	600	1300	7	Larvae (2nd generation)	Elm
Beetle	N. masked chafer beetle	<i>Cyclocephala borealis</i>	898	905	1	1st adults	Turf
Beetle	Japanese beetle	<i>Popillia japonica</i>	950	2150	5	Adults emerge and feed	Many
Beetle	Redheaded flea beetle	<i>Systema frontalis</i>	1028	1570	8	2nd generation of un-hatched eggs	Many
Beetle	Oriental Beetle	<i>Anomala orientalis</i>	1147	-	6	Adult emergence	Many
Beetle	N. masked chafer beetle	<i>Cyclocephala borealis</i>	1377	1579	1	Adults (90%)	Turf
Beetle	Redheaded flea beetle	<i>Systema frontalis</i>	1570	1860	8	2nd generation egg hatch	Many
Beetle	Japanese beetle	<i>Popillia japonica</i>	1590	1925	1	Adults (90%)	Many
Borer - Caterpillar	Eastern pine shoot borer	<i>Eucosma gloriola</i>	75	200	4	1st adults active	Conifer
Borer - Caterpillar	American plum borer	<i>Euzophera semifuneralis</i>	245	440	5	Adult flight, egg laying	Prunus
Borer - Caterpillar	Nantucket tip moth	<i>Rhyacionia frustrana</i>	1514	1917	1	Adults 2nd generation	Conifer
Borer - Clearwing moth	Lilac / Ash Borer	<i>Podosesia syringae</i>	148	299	2	Adult flight	Lilac, ash, privet, many
Borer - Clearwing moth	Dogwood Borer	<i>Synanthedon scitula</i>	148	700	2	Adult activity	Dogwood, many
Borer - Clearwing moth	Rhododendron borer	<i>Synanthedon rhododendri</i>	192	298	2	Typical treatment window	Rhododendron
Borer - Clearwing moth	Lilac / Ash Borer	<i>Podosesia syringae</i>	200	299	1	Adults - 1st Treatment	Lilac, ash, privet, many
Borer - Clearwing moth	Lesser peach tree borer	<i>Synanthedon pictipes</i>	350	375	4	Adult flight, egg laying	Malus, Prunus, many

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Borer - Clearwing moth	Dogwood borer	<i>Synanthedon scitula</i>	350	850	4	adults, eggs, caterpillars	Dogwood, apple, pecan, elm, hickory, willow
Borer - Clearwing moth	Rhododendron borer	<i>Synanthedon rhododendri</i>	509	696	1	Adults emerge	Rhododendron
Borer - Clearwing moth	Greater peach tree borer	<i>Synanthedon exitiosa</i>	575	710	4	Adult emergence	Malus, Prunus, many
Borer - Flathead / Metallic beetle	Bronze Birch Borer	<i>Agrilus anxius</i>	440	880	1	Adults (egg laying)	Birch
Borer - Flathead / Metallic beetle	Emerald ash borer	<i>Agrilus planipennis</i>	1000	1200	4	Peak adult activity	Ash
Borer - Roundhead / Longhorn	Roundheaded appletree borer	<i>Saperda candida</i>	802	1129	1	Adults	Many
Borer - Roundhead / Longhorn	Roundheaded apple tree borer	<i>Saperda candida</i>	1514	1798	5	Typical treatment window	Many
Borer - Roundhead / Longhorn	Sugar maple borer	<i>Glycobius speciosus</i>	2032	2375	5	Typical treatment window	Maple
Borer - Roundhead / Longhorn	Locust borer	<i>Magacyllene robiniae</i>	2271	2805	5	Typical treatment window	Locust
Caterpillar	Zimmerman pine moth	<i>Dioryctria zimmermani</i>	25	100	3	1st larvae	Conifer
Caterpillar	European pine shoot moth / borer	<i>Rhyacionia buoliana</i>	50	220	4	1st larvae active	Conifer
Caterpillar	Eastern tent caterpillar	<i>Malacosoma americanum</i>	90	190	2	Larvae treatment before tents apparent (near 150-GDD50)	Malus, Prunus, many
Caterpillar	Spongy moth (formerly Gypsy)	<i>Lymantria dispar</i>	90	448	1	Larvae treatment (early instars)	Many
Caterpillar	Larch casebearer	<i>Coleophora laricella</i>	120	150	4	Egg hatch	Conifer
Caterpillar	Spongy moth (formerly Gypsy)	<i>Lymantria dispar</i>	145	200	4	Egg hatch, 1st larvae	Many
Caterpillar	Cankerworms, inch-worms, loopers	(many)	148	290	2	Larvae treatment	Many
Caterpillar	Spruce needleminer	<i>Endothenia albolineana</i>	150	200	4	1st larvae active	Conifer
Caterpillar	Larch casebearer	<i>Coleophora laricella</i>	363	618	2,4	Nymphs active - typical treatment window	Conifer

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Group	Common Name	Scientific Name	GDD Min (50F)	GDD Max (95F)	Ref.	Developmental / Target Stage / Notes	Favored Host Plants
Caterpillar	Hemlock looper	<i>Lambdina fiscellaria</i>	448	707	5	Typical treatment window	Conifer
Caterpillar	Spongy moth (formerly Gypsy)	<i>Lymantria dispar</i>	450	900	4	Caterpillar to pupation - control target missed	Many
Caterpillar	European pine shoot moth	<i>Rhyacionia buoliana</i>	480	710	5	Larvae Treatment	Conifer
Caterpillar	Greenstriped mapleworm	<i>Dryocampa rubicunda</i>	533	1645	5	Control target	Maple
Caterpillar	Mimosa webworm	<i>Homadaula anisocentra</i>	880	-	1	Larvae (1st generation)	Mimosa, Honeylocust
Caterpillar	Walnut Caterpillar	<i>Datana integerrima</i>	1029	1514	2	Larvae Treatment	Juglandaceae
Caterpillar	Birch Skeletonizer	<i>Bucculatrix canadensisella</i>	1266	1580	5	Typical treatment window	Birch
Caterpillar	Fall webworm	<i>Hyphantria cunea</i>	1266	1795	2	Caterpillars present - larvae treatment	Many
Caterpillar	Juniper webworm	<i>Dichomeris marginella</i>	1645	1917	1	Larvae Treatment	Conifer
Caterpillar	Mimosa webworm	<i>Homadaula anisocentra</i>	1800	2100	1	Larvae (2nd generation)	Mimosa, Honeylocust
Caterpillar	Zimmerman pine moth	<i>Dioryctria zimmermani</i>	1917	2154	5	Treatment window (adult flight- 1700 GDD)	Conifer
caterpillar	Orangestriped oakworm	<i>Anisota senatoria</i>	1917	-	6	Egg hatch - early instars	Mainly Oaks
Caterpillar	Fall webworm	<i>Hyphantria cunea</i>	2793	-	6	Egg hatch / crawler (2nd generation)	Hardwoods
Caterpillar	Spruce budworm	<i>Choristoneura fumiferana</i>	200	300	5	Larvae	Spruce
Caterpillar	Redbanded leafroller	<i>Argyrotaenia velutinana</i>	298	618	5	Typical treatment window	Malus
Caterpillar	Oak skeletonizer	<i>Bucculatrix ainsliella</i>	448	707	5	Typical treatment window	Oak
Caterpillar	Bagworm	<i>Thyridopteryx ephemeraeformis</i>	600	900	1	Larvae (early instars) - ONLY CONTROL WINDOW	Conifer
Caterpillar	Bluegrass sod webworm	<i>Parapediasia teterrella</i>	1250	1920	1	Larvae	Turf

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Caterpillar	Oak skeletonizer	<i>Bucculatrix ainsliella</i>	1798	2155	1	Larvae	Oaks
Cicadellidae	Spotted Lantern Fly	<i>Lycorma delicatula</i>	225	1100	9	1st-4th Instar (nymphs) - control target	Many
Cicadellidae	Spotted Lantern Fly	<i>Lycorma delicatula</i>	1000	-	9	Adults	Many
Cicadellidae	Leafhoppers	<i>Species within Cicadellidae</i>	1266	1544	1	Nymphs / adults	Many
Hemiptera (true bugs)	Honeylocust plant bug	<i>Diaphorinocoris chlorionis</i>	58	246	2	Nymphs / adults active	Honeylocust
Hemiptera (true bugs)	Fourlined plant bug	<i>Poecilocapsus lineatus</i>	435	-	6	Egg hatch / early instars	Many
Hemiptera (true bugs)	Hairy chinch bug	<i>Blissus leucopterus</i>	765	870	1	1st generation (50% - 2nd instar)	Turf
Hemiptera (true bugs)	Hairy chinch bug	<i>Blissus leucopterus</i>	1903	2160	1	Second generation- 50%- 2nd instars	Turf
Lacebug	Andromeda lacebug	<i>Stephanitis takeyai</i>	115	279	1	Nymphs (1st generation)	Pieris
Lacebug	Azalea lace bug	<i>Stephanitis pyrioides</i>	118	372	1	Nymphs (1st generation)	Azalea
Lacebug	Andromeda lacebug	<i>Stephanitis takeyai</i>	192	303	1	Adults	Andromeda
Lacebug	Hawthorn lacebug	<i>Corythucha cydoniae</i>	239	363	1	Nymphs/Adults	Deciduous, many
Lacebug	Azalea Lacebug	<i>Stephanitis pyrioides</i>	350	646	1	Adults (1st generation)	Rhododendron
Lacebug	Basswood lacebug	<i>Gargaphia tiliae</i>	415	-	6	Adults/nymphs	Basswood
Lacebug	Azalea Lacebug	<i>Stephanitis pyrioides</i>	802	1029	1	Eggs / Nymphs 3rd Generation	Rhododendron
Lacebug	Lacebugs (on hawthorn)	<i>Corythucha cydoniae</i>	1266	1544	1	Nymphs / adults	Many
Leafminer / Midge / Fly	Holly leafminer	<i>Phytomyza ilicis</i>	147	265	1	Adults - egg laying	Holly
Leafminer / Midge / Fly	Balsam gall midge	<i>Paradiplosis tumifex</i>	150	300	4	Adults laying eggs	Conifer

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Leafminer / Midge / Fly	Birch leafminer	<i>Fenusia pusilla</i>	190	290	1	Larvae (1st generation)	Birch
Leafminer / Midge / Fly	Honeylocust pod gall midge	<i>Dasineura gleditchiae</i>	192	229	1	Larvae	Honeylocust
Leafminer / Midge / Fly	Holly leafminer	<i>Phytomyza ilicis</i>	192	290	1	Egg hatch	Holly
Leafminer / Midge / Fly	*Native holly leafminer	<i>Phytomyza ilicicola</i>	192	298	2	Egg hatch	Holly
Leafminer / Midge / Fly	Rhododendron gall midge	<i>Clinodiplosis rhododendri</i>	192	363	1	Larvae	Rhododendron
Leafminer / Midge / Fly	Douglas fir needle midge	<i>Contarinia pseudotsugae</i>	200	400	3	Adults emerge from soil	Conifer
Leafminer / Midge / Fly	Elm leafminer	<i>Fenusia ulmi</i>	215	240	5	Adult emergence	Elm
Leafminer / Midge / Fly	Arborvitae leafminer	<i>Argyresthia thuiella</i>	245	360	1	Larvae Treatments (1st generation)	Conifer
Leafminer / Midge / Fly	Lilac leafminer	<i>Caloptilia syringella</i>	246	363	5	Larvae Treatments	Lilac
Leafminer / Midge / Fly	Holly leafminer	<i>Phytomyza ilicis</i>	246	448	1	Larvae Treatment	Holly
Leafminer / Midge / Fly	Boxwood leafminer	<i>Monarthropalpus flavus</i>	249	-	6	Adult emergence	Boxwood
Leafminer / Midge / Fly	Birch Leafminer	<i>Fenusia pusilla</i>	275	375	4	Adults laying eggs	Birch
Leafminer / Midge / Fly	Locust leafminer	<i>Odontota dorsalis</i>	298	533	5	Typical treatment window	Locust
Leafminer / Midge / Fly	Pine needle midge	<i>Thecodiplosis brachynteroides</i>	400	500	7	Adults (1st generation)	Conifer
Leafminer / Midge / Fly	Boxwood Leafminer	<i>Monarthropalpus flavus</i>	448	700	1	Larvae treatment	Boxwood
Leafminer / Midge / Fly	Birch Leafminer	<i>Fenusia pusilla</i>	530	700	1	Larvae (2nd generation)	Birch
Leafminer / Midge / Fly	Arborvitae Leafminer	<i>Argyresthia thuiella</i>	533	700	1	Adults (egg laying) - larvae treatments	Conifer
Leafminer / Midge / Fly	Oak blotch leafminers	<i>Cameraria spp. ; Tisheria spp.</i>	533	912	5	Typical treatment window	Oak

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Leafminer / Midge / Fly	Balsam gall midge	<i>Paradiplosis tumifex</i>	550	700	4	Galls apparent	Conifer
Leafminer / Midge / Fly	Locust leafminer	<i>Odontota dorsalis</i>	1029	1388	1	Adults	Locust
Leafminer / Midge / Fly	Boxwood leafminer	<i>Monoarthropalpus flavus</i>	1200	1400	5	Larvae Treatment	Boxwood
Leafminer / Midge / Fly	Lilac leafminer	<i>Caloptilia syringella</i>	1388	1644	5	Typical treatment window	Lilac
Leafminer / Midge / Fly	Arborvitae leafminer	<i>Argyresthia thuiella</i>	1800	2200	1	Larvae Treatment (3rd generation)	Conifer
Mites	Conifer rust mites	<i>Eriophyidae</i>	7	22	4	Overwintering eggs hatch	Conifer
Mites	European red mite	<i>Panonychus ulmi</i>	7	58	2	1st adults active	Pomes, Stone fruit
Mites	Southern red mite	<i>Oligonychus ilicis</i>	7	91	5	Overwintering eggs hatch	Many
Mites	Spruce spider mite	<i>Oligonychus ununguis</i>	7	121	1	Overwintering eggs hatch	Conifer
Mites	Maple bladdergall mite	<i>Vasates quadripedes</i>	58	148	2	Spring control of overwintering stage	Maples
Mites	Southern red mite	<i>Oligonychus ilicis</i>	69	157	1	Spring hatch	Many
Mites	Spruce spider mite	<i>Oligonychus ununguis</i>	150	175	4	1st egg hatch	Conifer
Mites	Spruce spider mite	<i>Oligonychus ununguis</i>	190	363	1	Immatures/Adults	Conifer
Mites	Boxwood mites	<i>Eurytetranychus buxi</i>	245	600	1	All Stages	Boxwood
Mites	Pine eriophyid mites	<i>Eriophyidae</i>	298	533	5	Typical treatment window	Conifer
Mites	Privet rust mite	<i>Aculus ligustri</i>	298	802	1	All stages	Privet
Mites	Walnut blister mite	<i>Eriophyes erinea</i>	363	707	5	Typical treatment window	Walnut
Mites	Two-Spotted Mite	<i>Tetranychus urticae</i>	437	997	1	Adults (build-up activity)	Many

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Mites	Oak spider mites	<i>Oligonychus bicolor</i>	802	1265	1	All Stages	Oaks
Mites	Honeylocust mite	<i>Eotetranychus multidigituli</i>	912	1514	2	All Stages	Honeylocust
Mites	Honeylocust spider mite	<i>Platytepyranthus multidigituli</i>	912	1514	5	Typical treatment window	Honeylocust
Mites	Privet rust mite	<i>Aculus ligustri</i>	1266	1515	5	Second typical treatment window	Privet
Mites	Two spotted spider mite	<i>Tetranychus urticae</i>	1300	2000	1	Nymphs / adults	Many
Mites	Rust-mites	<i>Nalepella and Setoptus spp.</i>	1644	2030	1	Nymphs / adults	Conifer
Mites	Spruce spider mite	<i>Oligonychus ununguis</i>	2375	2806	5	Typical treatment window	Conifer
Mites	Southern red mite	<i>Oligonychus ilicis</i>	2500	2700	5	Typical treatment window	Many
Sawfly - Wasp	European pine sawfly	<i>Neodiprion sertifer</i>	35	145	1	Hatched larvae	Conifer
Sawfly - Wasp	European pine sawfly	<i>Neodiprion sertifer</i>	100	195	4	1st larvae active	Conifer
Sawfly - Wasp	Larch sawfly	<i>Pristophora erichsonii</i>	192	299	2	Typical treatment window	Larch
Sawfly - Wasp	Roseslug sawfly	<i>Endelomyia aethiops</i>	230	-	6	Egg hatch / early instars	Wild and cultivated roses
Sawfly - Wasp	Pine sawflies (Red-headed)	<i>Neodiprion lecontei</i>	246	1388	1	Larvae (1st generation)	Conifer
Sawfly - Wasp	Dogwood sawfly	<i>Macremphytus tarsatus</i>	1151	1500	1	Larvae Treatment	Dogwood
Scale / Adelgid / Whitefly / Psyllid	Taxus mealybug	<i>Dysmicoccus wistariae</i>	7	91	2	Spring control of overwintering stage	Conifer
Scale / Adelgid / Whitefly / Psyllid	Oystershell scale	<i>Lepidosaphes ulmi</i>	7	91	2	Spring control of overwintering stage	Deciduous
Scale / Adelgid / Whitefly / Psyllid	Cottony camellia / taxus scale	<i>Pulvinaria floccifera</i>	7	91	5	Spring control of overwintering stage	Deciduous, Yew
Scale / Adelgid / Whitefly / Psyllid	Elongate hemlock scale	<i>Fiorinia externa</i>	7	120	2	Spring control of overwintering stage	Conifer

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Scale / Adelgid / Whitefly / Psyllid	Golden oak scale	<i>Asterolecanium variolosum</i>	7	121	5	Spring control of overwintering stage	Oaks
Scale / Adelgid / Whitefly / Psyllid	Tuliptree scale	<i>Toumeyella liriodendri</i>	12	121	2	Spring control of overwintering stage	Magnoliaceae
Scale / Adelgid / Whitefly / Psyllid	Pine bark adelgid	<i>Pineus strobi</i>	22	58	2	Spring control of overwintering stage	Conifer
Scale / Adelgid / Whitefly / Psyllid	Magnolia scale	<i>Neolecanium cornuparvum</i>	22	91	2	Spring control of overwintering stage	Magnoliaceae
Scale / Adelgid / Whitefly / Psyllid	Spruce bud scale	<i>Physokermes piceae</i>	22	120	2	Spring control of overwintering stage	Conifer
Scale / Adelgid / Whitefly / Psyllid	Juniper scale	<i>Carulaspis juniperi</i>	22	148	2	Spring control of overwintering stage	Conifer
Scale / Adelgid / Whitefly / Psyllid	Eastern spruce gall adelgid	<i>Adelges abietis</i>	25	100	3	Spring control of overwintering stage	Conifer
Scale / Adelgid / Whitefly / Psyllid	Cooley spruce gall adelgid	<i>Adelges cooleyi</i>	25	120	3	Spring control of overwintering stage	Conifer
Scale / Adelgid / Whitefly / Psyllid	Euonymus scale	<i>Unaspis euonymi</i>	35	120	2	Spring control of overwintering stage	Many, evergreen
Scale / Adelgid / Whitefly / Psyllid	European fruit lecanium scale	<i>Parthenolecanium corni</i>	35	145	2	Spring control of overwintering stage	Shade trees
Scale / Adelgid / Whitefly / Psyllid	Fletcher scale	<i>Parthenolecanium fletcheri</i>	35	148	2	Spring control of overwintering stage	Conifer
Scale / Adelgid / Whitefly / Psyllid	Pine tortoise scale	<i>Toumeyella parvicornis</i>	58	148	2	Crawler activity	Conifer
Scale / Adelgid / Whitefly / Psyllid	Pine bark adelgid	<i>Pineus strobi</i>	58	618	2	Spring control of overwintering stage	Conifer
Scale / Adelgid / Whitefly / Psyllid	Cooley spruce gall adelgid	<i>Adelges cooleyi</i>	90	180	4	1st adults active - Douglas fir	Conifer
Scale / Adelgid / Whitefly / Psyllid	Hemlock woolly adelgid	<i>Adelges tsugae</i>	150	150	1	Eggs and 10% hatch	Conifer
Scale / Adelgid / Whitefly / Psyllid	Tea scale	<i>Fiorinia theae</i>	195	-	6	Crawlers (1st generation)	Holly, Camellia, many
Scale / Adelgid / Whitefly / Psyllid	Cooley spruce gall adelgid	<i>Adelges cooleyi</i>	200	310	4	1st galls visible - Spruce	Conifer
Scale / Adelgid / Whitefly / Psyllid	Taxus mealybug	<i>Dysmicoccus wistariae</i>	246	618	1	Adults/Crawlers	Yew

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Scale / Adelgid / Whitefly / Psyllid	Eastern spruce gall adelgid	<i>Adelges abietis</i>	250	310	5	egg hatch, galls begin forming (not a control target)	Conifer
Scale / Adelgid / Whitefly / Psyllid	Boxwood Psyllid	<i>Cacopsylla busi</i>	290	440	1	Nymphs	Boxwood
Scale / Adelgid / Whitefly / Psyllid	Pine Needle Scale	<i>Chionaspis pinifoliae</i>	298	448	1	Crawlers (1st generation) - control target	Conifer
Scale / Adelgid / Whitefly / Psyllid	Kermes oak scale	<i>Allokermes spp.</i>	298	912	5	Typical treatment window	Oaks
Scale / Adelgid / Whitefly / Psyllid	Hemlock woolly adelgid	<i>Adelges tsugae</i>	350	350	1	Eggs and 50% hatch	Conifer
Scale / Adelgid / Whitefly / Psyllid	Elongate Hemlock Scale	<i>Fiorinia externa</i>	360	700	1	Crawlers (1st generation)	Conifer
Scale / Adelgid / Whitefly / Psyllid	Oystershell Scale	<i>Lepidosaphes ulmi</i>	363	707	1	Crawlers	Many
Scale / Adelgid / Whitefly / Psyllid	Striped pine scale	<i>Toumeyella sp.</i>	400	500	3	Crawlers (1st generation)	Conifer
Scale / Adelgid / Whitefly / Psyllid	Pine tortoise scale	<i>Toumeyella parvicornis</i>	400	1000	4	Crawlers	Conifer
Scale / Adelgid / Whitefly / Psyllid	Azalea whitefly	<i>Pealius azaleae</i>	448	700	5	Adults/nymphs (1st generation)	Rhododendron
Scale / Adelgid / Whitefly / Psyllid	Maskell scale	<i>Lepidosaphes pallida</i>	470	-	6	Crawlers (1st generation)	Juniper
Scale / Adelgid / Whitefly / Psyllid	Peach Tree Borer	<i>Synanthedon sp.</i>	500	600	1	Adults - emerge (1st treatment both types)	Malus, Prunus, many
Scale / Adelgid / Whitefly / Psyllid	White prunicola scale	<i>Psedaulacaspis prunicola</i>	513	-	6	Crawlers (1st generation)	Many
Scale / Adelgid / Whitefly / Psyllid	Cottony camellia / taxus scale	<i>Pulvinaria floccifera</i>	520	-	6	Crawlers (1st generation)	Many
Scale / Adelgid / Whitefly / Psyllid	Euonymus Scale	<i>Unaspis euonymil</i>	533	820	1	Crawlers (1st generation)	Euonymus
Scale / Adelgid / Whitefly / Psyllid	Juniper scale	<i>Carulaspis juniperi</i>	550	700	7	Egg hatch	Conifer
Scale / Adelgid / Whitefly / Psyllid	Cryptomeria scale	<i>Aspidiotus cryptomeriae</i>	600	800	3	First crawler emergence	Conifer
Scale / Adelgid / Whitefly / Psyllid	Cooley spruce gall adelgid	<i>Adelges cooleyi</i>	600	1000	7	Nymphs active - Douglas fir (control target)	Conifer

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Scale / Adelgid / Whitefly / Psyllid	Sprucebud scale	<i>Physokermes hemicyrphus</i>	700	1150	4	Crawlers (1st generation)	Conifer
Scale / Adelgid / Whitefly / Psyllid	White prunicola scale	<i>Psedaulacaspis prunicola</i>	707	1151	1	Crawlers (1st generation)	Many
Scale / Adelgid / Whitefly / Psyllid	Juniper scale	<i>Carulaspis juniperi</i>	707	1260	1	Crawlers (1st generation)	Conifer
Scale / Adelgid / Whitefly / Psyllid	Calico scale	<i>Eulecanium cerasorum</i>	714	-	6	Crawlers (1st generation)	Many
Scale / Adelgid / Whitefly / Psyllid	Striped pine scale	<i>Toumeyella pini</i>	750	800	4	Egg hatch	Conifer
Scale / Adelgid / Whitefly / Psyllid	Oak lecanium scale	<i>Parthenolecanium quercifex</i>	789	-	6	Crawlers (1st generation)	Oak, hickory, birch, many
Scale / Adelgid / Whitefly / Psyllid	Cottony maple leaf scale	<i>Pulvinaria acericola</i>	802	1265	5	Crawlers (1st generation)	Acer
Scale / Adelgid / Whitefly / Psyllid	Cottony maple scale	<i>Pulvinaria innumerabilis</i>	802	1265	1	Crawlers (1st generation) - control target	Many, shade trees
Scale / Adelgid / Whitefly / Psyllid	Golden oak scale	<i>Asterolecanium variolosum</i>	802	1266	5	Egg hatch	Oaks
Scale / Adelgid / Whitefly / Psyllid	Japanese maple scale	<i>Lopholeucaspis japonica</i>	829	-	6	Crawlers (1st generation)	Maples
Scale / Adelgid / Whitefly / Psyllid	European elm scale	<i>Gossyparia spuria</i>	831	1388	6,2	Crawlers (1st generation)	Elm
Scale / Adelgid / Whitefly / Psyllid	European fruit lecanium scale	<i>Parthenolecanium corni</i>	932	1645	6,1	Crawlers - control target	Shade trees
Scale / Adelgid / Whitefly / Psyllid	Pine tortoise scale	<i>Toumeyella parvicornis</i>	1000	1200	4	Egg hatch ends, last of crawlers	Conifer
Scale / Adelgid / Whitefly / Psyllid	Fletcher Scale (Yew)	<i>Parthenolecanium fletcheri</i>	1029	1388	1	Crawlers (1st generation) - control target	Yew, many conifers
Scale / Adelgid / Whitefly / Psyllid	Indian wax scale	<i>Ceroplastes ceriferus</i>	1145	-	6	Crawlers (1st generation)	Many
Scale / Adelgid / Whitefly / Psyllid	Euonymus Scale	<i>Unaspis euonymil</i>	1150	1388	5	2nd generation targeted treatments	Euonymus
Scale / Adelgid / Whitefly / Psyllid	Azalea whitefly	<i>Pealius azaleae</i>	1250	1500	5	Adults/nymphs (2nd generation)	Rhododendron
Scale / Adelgid / Whitefly / Psyllid	Pine Needle Scale	<i>Chionaspis pinifoliae</i>	1290	1917	3	Crawlers emerge (2nd generation) - control target	Conifer

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Scale / Adelgid / Whitefly / Psyllid	Hemlock scale	<i>Abgrallaspis ithacae</i>	1388	2154	5	Typical treatment window	Conifer
Scale / Adelgid / Whitefly / Psyllid	Cooley spruce gall adelgid	<i>Adelges cooleyi</i>	1500	1775	1	Adults/nymphs (Douglas Fir)	Conifer
Scale / Adelgid / Whitefly / Psyllid	Peachtree borer	<i>Synanthedon sp.</i>	1500	1800	1	Larvae Treatment	Malus, Prunus, many
Scale / Adelgid / Whitefly / Psyllid	White prunicola scale	<i>Pseudaulacaspis prunicola</i>	1637	-	6	Egg hatch / crawler (2nd generation)	Many
Scale / Adelgid / Whitefly / Psyllid	Euonymus Scale	<i>Unaspis euonymil</i>	1700	-	1	Continued 2nd generation treatments	Euonymus
Scale / Adelgid / Whitefly / Psyllid	Cryptomeria scale	<i>Aspidiotus cryptomeriae</i>	1750	2130	1, 4	Crawlers emerge (2nd generation)	Conifer
Scale / Adelgid / Whitefly / Psyllid	Obscure scale	<i>Melanaspis obscura</i>	1774	-	6	Egg hatch / crawler	Many
Scale / Adelgid / Whitefly / Psyllid	Cooley spruce gall adelgid	<i>Adelges cooleyi</i>	1850	1950	1	Galls open (Spruce)	Conifer
Scale / Adelgid / Whitefly / Psyllid	Gloomy scale	<i>Melanaspis tenebricosa</i>	2000	3000	6*	Crawlers emerge. (1 generation) * Approximate range, more data needed.	Maple, many
Scale / Adelgid / Whitefly / Psyllid	Azalea whitefly	<i>Pealius azaleae</i>	2032	2150	5	Adults/nymphs (3rd generation)	Rhododendron
Scale / Adelgid / Whitefly / Psyllid	Maskell scale	<i>lepidosaphes pallia</i>	2035	-	6	Egg hatch / crawler (2nd generation)	Conifer
Scale / Adelgid / Whitefly / Psyllid	Tulip tree scale	<i>Toumeyella liriodendri</i>	2037	2629	1	Crawlers (1st generation)	Mainly Tulip
Scale / Adelgid / Whitefly / Psyllid	Magnolia scale	<i>Neolecanium cornuparvum</i>	2155	2800	1	Crawlers (1st generation)	Mainly Magnolia
Scale / Adelgid / Whitefly / Psyllid	Japanese maple scale	<i>Lopholeucaspis japonica</i>	2508	-	6	Egg hatch / crawler (2nd generation)	Maple
Scale / Adelgid / Whitefly / Psyllid	Elongate hemlock scale	<i>Fiorinia externa</i>	2515	2625	1	Typical treatment window - fall activity	Conifer
Scale / Adelgid / Whitefly / Psyllid	Fletcher Scale (Yew)	<i>Parthenolecanium fletcheri</i>	2515	2800	1	Fall control of overwintering stage	Yew, many conifers
Scale / Adelgid / Whitefly / Psyllid	Cooley spruce gall adelgid	<i>Adelges cooleyi</i>	2800	3000	3	Fall control of overwintering stage	Conifer
Scale / Adelgid / Whitefly / Psyllid	Eastern spruce gall adelgid	<i>Adelges abietis</i>	2800	3000	3	Fall control of overwintering stage	Conifer

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Group	Common Name	Scientific Name	GDD Min (50F)	GDD Max (95F)	Ref.	Developmental / Target Stage / Notes	Favored Host Plants
Weevil	White pine weevil	<i>Pissodes strobi</i>	7	58	1	Overwintering adults become active / prevent egg laying	Conifer
Weevil	Pales weevil	<i>Hylobius pales</i>	7	121	1	Overwintering adults become active / prevent egg laying	Conifer
Weevil	Northern pine weevil	<i>Pissodes approximatus</i>	25	100	4	1st adults active	Conifer
Weevil	White pine weevil	<i>Pissodes strobi</i>	25	220	4	1st adults active	Conifer
Weevil	Black Vine Weevil	<i>Otiorhynchus sulcatus</i>	148	400	2	Pupation / Adult emergence	Yews, Rhododendrons, many
Weevil	Pine root collar weevil	<i>Hylobius radicis</i>	300	350	4	1st adults active	Conifer
Weevil	Black Vine Weevil	<i>Otiorhynchus sulcatus</i>	400	2800	1	Adults treatment	Yews, Rhododendrons, many
Weevil	Bluegrass billbug	<i>Sphenophorus parvulus</i>	884	1003	1	Larvae 20%	Turf
Weevil	Bluegrass billbug	<i>Sphenophorus parvulus</i>	1094	1217	1	Larvae (40%)	Turf
Weevil	Northern pine weevil	<i>Pissodes nemorensis</i>	1200	1400	4	2nd generation adults active	Conifer
Weevil	Pales weevil	<i>Hylobius pales</i>	1200	1400	4	Adults 2nd generation	Conifer
Weevil	Pine root collar weevil	<i>Hylobius radicis</i>	1200	1400	4	2nd generation adults active	Conifer
Weevil	White pine weevil	<i>Pissodes strobi</i>	1200	1400	4	2nd generation adults active	Conifer
Weevil	Two-banded Japanese weevil	<i>Pseudocneorhinus bifasciatus</i>	1644	2271	1	Adults	Many
Weevil	Poplar and willow borer	<i>Crytorhynchus lapathi</i>	2271	2806	5	Typical treatment window	Poplar and Willow

SORTED BY FAVERED HOST PLANT

Scale / Adelgid / Whitefly / Psyllid	Cottony maple leaf scale	<i>Pulvinaria acericola</i>	802	1265	5	Crawlers (1st generation)	Acer
Lacebug	Andromeda lacebug	<i>Stephanitis takeyai</i>	192	303	1	Adults	Andromeda

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Borer - Flathead / Metallic beetle	Emerald ash borer	<i>Agrilus planipennis</i>	1000	1200	4	Peak adult activity	Ash
Lacebug	Azalea lace bug	<i>Stephanitis pyrioides</i>	118	372	1	Nymphs (1st generation)	Azalea
Lacebug	Basswood lacebug	<i>Gargaphia tiliae</i>	415	-	6	Adults/nymphs	Basswood
Aphids / Thrips	Woolly beech aphids	<i>Glyloprociphilus imbricator & Phylaphis fagi</i>	363	707	5	Typical treatment window	Beech
Leafminer / Midge / Fly	Birch leafminer	<i>Fenusaa pusilla</i>	190	290	1	Larvae (1st generation)	Birch
Leafminer / Midge / Fly	Birch Leafminer	<i>Fenusaa pusilla</i>	275	375	4	Adults laying eggs	Birch
Borer - Flathead / Metallic beetle	Bronze Birch Borer	<i>Agrilus anxius</i>	440	880	1	Adults (egg laying)	Birch
Leafminer / Midge / Fly	Birch Leafminer	<i>Fenusaa pusilla</i>	530	700	1	Larvae (2nd generation)	Birch
Caterpillar	Birch Skeletonizer	<i>Bucculatrix canadensisella</i>	1266	1580	5	Typical treatment window	Birch
Mites	Boxwood mites	<i>Eurytetranychus buxi</i>	245	600	1	All Stages	Boxwood
Leafminer / Midge / Fly	Boxwood leafminer	<i>Monarthropalpus flavus</i>	249	-	6	Adult emergence	Boxwood
Scale / Adelgid / Whitefly / Psyllid	Boxwood Psyllid	<i>Cacopsylla busi</i>	290	440	1	Nymphs	Boxwood
Leafminer / Midge / Fly	Boxwood Leafminer	<i>Monarthropalpus flavus</i>	448	700	1	Larvae treatment	Boxwood
Leafminer / Midge / Fly	Boxwood leafminer	<i>Monoarthropalpus flavus</i>	1200	1400	5	Larvae Treatment	Boxwood
Mites	Conifer rust mites	<i>Eriophyidae</i>	7	22	4	Overwintering eggs hatch	Conifer
Weevil	White pine weevil	<i>Pissodes strobi</i>	7	58	1	Overwintering adults become active / prevent egg laying	Conifer
Scale / Adelgid / Whitefly / Psyllid	Taxus mealybug	<i>Dysmicoccus wistariae</i>	7	91	2	Spring control of overwintering stage	Conifer
Scale / Adelgid / Whitefly / Psyllid	Elongate hemlock scale	<i>Fiorinia externa</i>	7	120	2	Spring control of overwintering stage	Conifer

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Mites	Spruce spider mite	<i>Oligonychus ununguis</i>	7	121	1	Overwintering eggs hatch	Conifer
Weevil	Pales weevil	<i>Hylobius pales</i>	7	121	1	Overwintering adults become active / prevent egg laying	Conifer
Scale / Adelgid / Whitefly / Psyllid	Pine bark adelgid	<i>Pineus strobi</i>	22	58	2	Spring control of overwintering stage	Conifer
Scale / Adelgid / Whitefly / Psyllid	Spruce bud scale	<i>Physokermes piceae</i>	22	120	2	Spring control of overwintering stage	Conifer
Scale / Adelgid / Whitefly / Psyllid	Juniper scale	<i>Carulaspis juniperi</i>	22	148	2	Spring control of overwintering stage	Conifer
Caterpillar	Zimmerman pine moth	<i>Dioryctria zimmermani</i>	25	100	3	1st larvae	Conifer
Scale / Adelgid / Whitefly / Psyllid	Eastern spruce gall adelgid	<i>Adelges abietis</i>	25	100	3	Spring control of overwintering stage	Conifer
Weevil	Northern pine weevil	<i>Pissodes approximatus</i>	25	100	4	1st adults active	Conifer
Scale / Adelgid / Whitefly / Psyllid	Cooley spruce gall adelgid	<i>Adelges cooleyi</i>	25	120	3	Spring control of overwintering stage	Conifer
Weevil	White pine weevil	<i>Pissodes strobi</i>	25	220	4	1st adults active	Conifer
Sawfly - Wasp	European pine sawfly	<i>Neodiprion sertifer</i>	35	145	1	Hatched larvae	Conifer
Scale / Adelgid / Whitefly / Psyllid	Fletcher scale	<i>Parthenolecanium fletcheri</i>	35	148	2	Spring control of overwintering stage	Conifer
Caterpillar	European pine shoot moth / borer	<i>Rhyacionia buoiana</i>	50	220	4	1st larvae active	Conifer
Scale / Adelgid / Whitefly / Psyllid	Pine tortoise scale	<i>Toumeyela parvicornis</i>	58	148	2	Cralwer activity	Conifer
Scale / Adelgid / Whitefly / Psyllid	Pine bark adelgid	<i>Pineus strobi</i>	58	618	2	Spring control of overwintering stage	Conifer
Aphids / Thrips	Balsam twig aphid	<i>Mindarus abietinus</i>	60	100	4	Egg hatch	Conifer
Borer - Caterpillar	Eastern pine shoot borer	<i>Eucosma gloriola</i>	75	200	4	1st adults active	Conifer
Scale / Adelgid / Whitefly / Psyllid	Cooley spruce gall adelgid	<i>Adelges cooleyi</i>	90	180	4	1st adults active - Douglas fir	Conifer

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Aphids / Thrips	Balsam twig aphid	<i>Mindarus abietinus</i>	100	150	4	Stem mothers present (control target)	Conifer
Beetle	Pine engraver (<i>Ips</i> bark beetle)	<i>Ips spp.</i>	100	150	4	1st adults active	Conifer
Sawfly - Wasp	European pine sawfly	<i>Neodiprion sertifer</i>	100	195	4	1st larvae active	Conifer
Caterpillar	Larch casebearer	<i>Coleophora laricella</i>	120	150	4	Egg hatch	Conifer
Scale / Adelgid / Whitefly / Psyllid	Hemlock woolly adelgid	<i>Adelges tsugae</i>	150	150	1	Eggs and 10% hatch	Conifer
Mites	Spruce spider mite	<i>Oligonychus ununguis</i>	150	175	4	1st egg hatch	Conifer
Caterpillar	Spruce needleminer	<i>Endothenia albolineana</i>	150	200	4	1st larvae active	Conifer
Leafminer / Midge / Fly	Balsam gall midge	<i>Paradiplosis tumifex</i>	150	300	4	Adults laying eggs	Conifer
Mites	Spruce spider mite	<i>Oligonychus ununguis</i>	190	363	1	Immatures/Adults	Conifer
Scale / Adelgid / Whitefly / Psyllid	Cooley spruce gall adelgid	<i>Adelges cooleyi</i>	200	310	4	1st galls visible - Spruce	Conifer
Leafminer / Midge / Fly	Douglas fir needle midge	<i>Contarinia pseudotsugae</i>	200	400	3	Adults emerge from soil	Conifer
Leafminer / Midge / Fly	Arborvitae leafminer	<i>Argyresthia thuiella</i>	245	360	1	Larvae Treatments (1st generation)	Conifer
Sawfly - Wasp	Pine sawflies (Red-headed)	<i>Neodiprion lecontei</i>	246	1388	1	Larvae (1st generation)	Conifer
Scale / Adelgid / Whitefly / Psyllid	Eastern spruce gall adelgid	<i>Adelges abietis</i>	250	310	5	egg hatch, galls begin forming (not a control target)	Conifer
Scale / Adelgid / Whitefly / Psyllid	Pine Needle Scale	<i>Chionaspis pinifoliae</i>	298	448	1	Crawlers (1st generation) - control target	Conifer
Mites	Pine eriophyid mites	<i>Eriophyidae</i>	298	533	5	Typical treatment window	Conifer
Beetle	Turpentine beetle	<i>Dendroctonus terebrans</i>	300	350	4	Parent beetles colonizing brood material	Conifer
Weevil	Pine root collar weevil	<i>Hylobius radicis</i>	300	350	4	1st adults active	Conifer

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Scale / Adelgid / Whitefly / Psyllid	Hemlock woolly adelgid	<i>Adelges tsugae</i>	350	350	1	Eggs and 50% hatch	Conifer
Scale / Adelgid / Whitefly / Psyllid	Elongate Hemlock Scale	<i>Fiorinia externa</i>	360	700	1	Crawlers (1st generation)	Conifer
Caterpillar	Larch casebearer	<i>Coleophora laricella</i>	363	618	2,4	Nymphs active - typical treatment window	Conifer
Leafminer / Midge / Fly	Pine needle midge	<i>Thecodiplosis brachynteroides</i>	400	500	7	Adults (1st generation)	Conifer
Scale / Adelgid / Whitefly / Psyllid	Striped pine scale	<i>Toumeyella sp.</i>	400	500	3	Crawlers (1st generation)	Conifer
Scale / Adelgid / Whitefly / Psyllid	Pine tortoise scale	<i>Toumeyella parvicornis</i>	400	1000	4	Crawlers	Conifer
Caterpillar	Hemlock looper	<i>Lambdina fiscellaria</i>	448	707	5	Typical treatment window	Conifer
Beetle	Pine shoot beetle	<i>Tomicus piniperda</i>	450	500	4	Adults emerge; begin shoot feeding - control target	Conifer
Beetle	Pine Chafer (Anomela Beetle)	<i>Anomala obliqua</i>	450	600	7	Adults (1st generation)	Conifer
Caterpillar	European pine shoot moth	<i>Rhyacionia buoliana</i>	480	710	5	Larvae Treatment	Conifer
Leafminer / Midge / Fly	Arborvitae Leafminer	<i>Argyresthia thuiella</i>	533	700	1	Adults (egg laying) - larvae treatments	Conifer
Leafminer / Midge / Fly	Balsam gall midge	<i>Paradiplosis tumifex</i>	550	700	4	Galls apparent	Conifer
Scale / Adelgid / Whitefly / Psyllid	Juniper scale	<i>Carulaspis juniperi</i>	550	700	7	Egg hatch	Conifer
Scale / Adelgid / Whitefly / Psyllid	Cryptomeria scale	<i>Aspidotus cryptomeriae</i>	600	800	3	First crawler emergence	Conifer
Caterpillar	Bagworm	<i>Thyridopteryx ephemeraeformis</i>	600	900	1	Larvae (early instars) - ONLY CONTROL WINDOW	Conifer
Scale / Adelgid / Whitefly / Psyllid	Cooley spruce gall adelgid	<i>Adelges cooleyi</i>	600	1000	7	Nymphs active - Douglas fir (control target)	Conifer
Scale / Adelgid / Whitefly / Psyllid	Sprucebud scale	<i>Physokermes hemicyprhus</i>	700	1150	4	Crawlers (1st generation)	Conifer
Scale / Adelgid / Whitefly / Psyllid	Juniper scale	<i>Carulaspis juniperi</i>	707	1260	1	Crawlers (1st generation)	Conifer

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Scale / Adelgid / Whitefly / Psyllid	Striped pine scale	<i>Toumeyella pini</i>	750	800	4	Egg hatch	Conifer
Scale / Adelgid / Whitefly / Psyllid	Pine tortoise scale	<i>Toumeyella parvicornis</i>	1000	1200	4	Egg hatch ends, last of crawlers	Conifer
Weevil	Northern pine weevil	<i>Pissodes nemorensis</i>	1200	1400	4	2nd generation adults active	Conifer
Weevil	Pales weevil	<i>Hylobius pales</i>	1200	1400	4	Adults 2nd generation	Conifer
Weevil	Pine root collar weevil	<i>Hylobius radicis</i>	1200	1400	4	2nd generation adults active	Conifer
Weevil	White pine weevil	<i>Pissodes strobi</i>	1200	1400	4	2nd generation adults active	Conifer
Scale / Adelgid / Whitefly / Psyllid	Pine Needle Scale	<i>Chionaspis pinifoliae</i>	1290	1917	3	Crawlers emerge (2nd generation) - control target	Conifer
Scale / Adelgid / Whitefly / Psyllid	Hemlock scale	<i>Abgrallaspis ithacae</i>	1388	2154	5	Typical treatment window	Conifer
Scale / Adelgid / Whitefly / Psyllid	Cooley spruce gall adelgid	<i>Adelges cooleyi</i>	1500	1775	1	Adults/nymphs (Douglas Fir)	Conifer
Borer - Caterpillar	Nantucket tip moth	<i>Rhyacionia frustrana</i>	1514	1917	1	Adults 2nd generation	Conifer
Mites	Rust-mites	<i>Nalepella and Setoptus spp.</i>	1644	2030	1	Nymphs / adults	Conifer
Caterpillar	Juniper webworm	<i>Dichomeris marginella</i>	1645	1917	1	Larvae Treatment	Conifer
Scale / Adelgid / Whitefly / Psyllid	Cryptomeria scale	<i>Aspidiotus cryptomeriae</i>	1750	2130	1, 4	Crawlers emerge (2nd generation)	Conifer
Leafminer / Midge / Fly	Arborvitae leafminer	<i>Argyresthia thuiella</i>	1800	2200	1	Larvae Treatment (3rd generation)	Conifer
Scale / Adelgid / Whitefly / Psyllid	Cooley spruce gall adelgid	<i>Adelges cooleyi</i>	1850	1950	1	Galls open (Spruce)	Conifer
Caterpillar	Zimmerman pine moth	<i>Dioryctria zimmermani</i>	1917	2154	5	Treatment window (adult flight- 1700 GDD)	Conifer
Aphids / Thrips	White pine aphid	<i>Cinara strobi</i>	1991	2271	1	Adults	Conifer
Scale / Adelgid / Whitefly / Psyllid	Maskell scale	<i>lepidosaphes pallia</i>	2035	-	6	Egg hatch / crawler (2nd generation)	Conifer

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Mites	Spruce spider mite	<i>Oligonychus ununguis</i>	2375	2806	5	Typical treatment window	Conifer
Scale / Adelgid / Whitefly / Psyllid	Elongate hemlock scale	<i>Fiorinia externa</i>	2515	2625	1	Typical treatment window - fall activity	Conifer
Scale / Adelgid / Whitefly / Psyllid	Cooley spruce gall adelgid	<i>Adelges cooleyi</i>	2800	3000	3	Fall control of overwintering stage	Conifer
Scale / Adelgid / Whitefly / Psyllid	Eastern spruce gall adelgid	<i>Adelges abietis</i>	2800	3000	3	Fall control of overwintering stage	Conifer
Scale / Adelgid / Whitefly / Psyllid	Oystershell scale	<i>Lepidosaphes ulmi</i>	7	91	2	Spring control of overwintering stage	Deciduous
Lacebug	Hawthorn lacebug	<i>Corythucha cydoniae</i>	239	363	1	Nymphs/Adults	Deciduous, many
Scale / Adelgid / Whitefly / Psyllid	Cottony camellia / taxus scale	<i>Pulvinaria floccifera</i>	7	91	5	Spring control of overwintering stage	Deciduous, Yew
Sawfly - Wasp	Dogwood sawfly	<i>Macremphytus tarsatus</i>	1151	1500	1	Larvae Treatment	Dogwood
Borer - Clearwing moth	Dogwood borer	<i>Synanthedon scitula</i>	350	850	4	adults, eggs, caterpillars	Dogwood, apple, pecan, elm, hickory, willow
Borer - Clearwing moth	Dogwood Borer	<i>Synanthedon scitula</i>	148	700	2	Adult activity	Dogwood, many
Leafminer / Midge / Fly	Elm leafminer	<i>Fenusia ulmi</i>	215	240	5	Adult emergence	Elm
Beetle	Elm leaf beetle	<i>Xanthogaleruca luteola</i>	363	530	1	Larvae treatment (1st generation)	Elm
Beetle	Elm leaf beetle	<i>Xanthogaleruca luteola</i>	600	1300	7	Larvae (2nd generation)	Elm
Scale / Adelgid / Whitefly / Psyllid	European elm scale	<i>Gossyparia spuria</i>	831	1388	6,2	Crawlers (1st generation)	Elm
Aphids / Thrips	Woolly elm aphid	<i>Eriosoma americana</i>	121	246	2 (6)	Control target	Elm, Service berry
Scale / Adelgid / Whitefly / Psyllid	Euonymus Scale	<i>Unaspis euonymil</i>	533	820	1	Crawlers (1st generation)	Euonymus
Scale / Adelgid / Whitefly / Psyllid	Euonymus Scale	<i>Unaspis euonymil</i>	1150	1388	5	2nd generation targeted treatments	Euonymus
Scale / Adelgid / Whitefly / Psyllid	Euonymus Scale	<i>Unaspis euonymil</i>	1700	-	1	Continued 2nd generation treatments	Euonymus

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Caterpillar	Fall webworm	<i>Hyphantria cunea</i>	2793	-	6	Egg hatch / crawler (2nd generation)	Hardwoods
Leafminer / Midge / Fly	Holly leafminer	<i>Phytomyza ilicis</i>	147	265	1	Adults - egg laying	Holly
Leafminer / Midge / Fly	Holly leafminer	<i>Phytomyza ilicis</i>	192	290	1	Egg hatch	Holly
Leafminer / Midge / Fly	*Native holly leafminer	<i>Phytomyza ilicicola</i>	192	298	2	Egg hatch	Holly
Leafminer / Midge / Fly	Holly leafminer	<i>Phytomyza ilicis</i>	246	448	1	Larvae Treatment	Holly
Scale / Adelgid / Whitefly / Psyllid	Tea scale	<i>Fiorinia theae</i>	195	-	6	Crawlers (1st generation)	Holly, Camellia, many
Hemiptera (true bugs)	Honeylocust plant bug	<i>Diaphorinocoris chlorionis</i>	58	246	2	Nymphs / adults active	Honeylocust
Leafminer / Midge / Fly	Honeylocust pod gall midge	<i>Dasineura gleditchiae</i>	192	229	1	Larvae	Honeylocust
Mites	Honeylocust mite	<i>Eotetranychus multidigituli</i>	912	1514	2	All Stages	Honeylocust
Mites	Honeylocust spider mite	<i>Platytetranychus multidigituli</i>	912	1514	5	Typical treatment window	Honeylocust
Caterpillar	Walnut Caterpillar	<i>Datana integerrima</i>	1029	1514	2	Larvae Treatment	Juglandaceae
Scale / Adelgid / Whitefly / Psyllid	Maskell scale	<i>Lepidosaphes pallida</i>	470	-	6	Crawlers (1st generation)	Juniper
Sawfly - Wasp	Larch sawfly	<i>Pristophora erichsonii</i>	192	299	2	Typical treatment window	Larch
Leafminer / Midge / Fly	Lilac leafminer	<i>Caloptilia syringella</i>	246	363	5	Larvae Treatments	Lilac
Leafminer / Midge / Fly	Lilac leafminer	<i>Caloptilia syringella</i>	1388	1644	5	Typical treatment window	Lilac
Borer - Clearwing moth	Lilac / Ash Borer	<i>Podosesia syringae</i>	148	299	2	Adult flight	Lilac, ash, privet, many
Borer - Clearwing moth	Lilac / Ash Borer	<i>Podosesia syringae</i>	200	299	1	Adults - 1st Treatment	Lilac, ash, privet, many
Leafminer / Midge / Fly	Locust leafminer	<i>Odontota dorsalis</i>	298	533	5	Typical treatment window	Locust

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Leafminer / Midge / Fly	Locust leafminer	<i>Odontota dorsalis</i>	1029	1388	1	Adults	Locust
Borer - Roundhead / Longhorn	Locust borer	<i>Magacyllene robiniae</i>	2271	2805	5	Typical treatment window	Locust
Scale / Adelgid / Whitefly / Psyllid	Tuliptree scale	<i>Toumeyella liriodendri</i>	12	121	2	Spring control of overwintering stage	Magnoliaceae
Scale / Adelgid / Whitefly / Psyllid	Magnolia scale	<i>Neolecanium cornuparvum</i>	22	91	2	Spring control of overwintering stage	Magnoliaceae
Scale / Adelgid / Whitefly / Psyllid	Magnolia scale	<i>Neolecanium cornuparvum</i>	2155	2800	1	Crawlers (1st generation)	Mainly Magnolia
caterpillar	Orangestriped oakworm	<i>Anisota senatoria</i>	1917	-	6	Egg hatch - early instars	Mainly Oaks
Scale / Adelgid / Whitefly / Psyllid	Tulip tree scale	<i>Toumeyella liriodendri</i>	2037	2629	1	Crawlers (1st generation)	Mainly Tulip
Caterpillar	Redbanded leafroller	<i>Argyrotaenia velutinana</i>	298	618	5	Typical treatment window	Malus
Caterpillar	Eastern tent caterpillar	<i>Malacosoma americanum</i>	90	190	2	Larvae treatment before tents apparent (near 150-GDD50)	Malus, Prunus, many
Borer - Clearwing moth	Lesser peach tree borer	<i>Synanthedon pictipes</i>	350	375	4	Adult flight, egg laying	Malus, Prunus, many
Scale / Adelgid / Whitefly / Psyllid	Peach Tree Borer	<i>Synanthedon sp.</i>	500	600	1	Adults - emerge (1st treatment both types)	Malus, Prunus, many
Borer - Clearwing moth	Greater peach tree borer	<i>Synanthedon exitiosa</i>	575	710	4	Adult emergence	Malus, Prunus, many
Scale / Adelgid / Whitefly / Psyllid	Peachtree borer	<i>Synanthedon sp.</i>	1500	1800	1	Larvae Treatment	Malus, Prunus, many
Mites	Southern red mite	<i>Oligonychus ilicis</i>	7	91	5	Overwintering eggs hatch	Many
Aphids / Thrips	Aphids	<i>Aphidoidea</i>	7	120	2	Spring control of overwintering stage	Many
Mites	Southern red mite	<i>Oligonychus ilicis</i>	69	157	1	Spring hatch	Many
Caterpillar	Spongy moth (formerly Gypsy)	<i>Lymantria dispar</i>	90	448	1	Larvae treatment (early instars)	Many
Caterpillar	Spongy moth (formerly Gypsy)	<i>Lymantria dispar</i>	145	200	4	Egg hatch, 1st larvae	Many

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Caterpillar	Cankerworms, inch-worms, loopers	(many)	148	290	2	Larvae treatment	Many
Cicadellidae	Spotted Lantern Fly	<i>Lycorma delicatula</i>	225	1100	9	1st-4th Instar (nymphs) - control target	Many
Beetle	Redheaded flea beetle	<i>Systema frontalis</i>	242	600	8	First control target - egg hatch / larval activity	Many
Scale / Adelgid / Whitefly / Psyllid	Oystershell Scale	<i>Lepidosaphes ulmi</i>	363	707	1	Crawlers	Many
Hemiptera (true bugs)	Fourlined plant bug	<i>Poecilocapsus lineatus</i>	435	-	6	Egg hatch / early instars	Many
Mites	Two-Spotted Mite	<i>Tetranychus urticae</i>	437	997	1	Adults (build-up activity)	Many
Caterpillar	Spongy moth (formerly Gypsy)	<i>Lymantria dispar</i>	450	900	4	Caterpillar to pupation - control target missed	Many
Scale / Adelgid / Whitefly / Psyllid	White prunicola scale	<i>Psedaulacaspis prunicola</i>	513	-	6	Crawlers (1st generation)	Many
Beetle	Redheaded flea beetle	<i>Systema frontalis</i>	517	1028	8	Adults - feeding / laying eggs	Many
Scale / Adelgid / Whitefly / Psyllid	Cottony camellia / taxus scale	<i>Pulvinaria floccifera</i>	520	-	6	Crawlers (1st generation)	Many
Scale / Adelgid / Whitefly / Psyllid	White prunicola scale	<i>Psedaulacaspis prunicola</i>	707	1151	1	Crawlers (1st generation)	Many
Scale / Adelgid / Whitefly / Psyllid	Calico scale	<i>Eulecanium cerasorum</i>	714	-	6	Crawlers (1st generation)	Many
Borer - Roundhead / Longhorn	Roundheaded appletree borer	<i>Saperda candida</i>	802	1129	1	Adults	Many
Beetle	Japanese beetle	<i>Popillia japonica</i>	950	2150	5	Adults emerge and feed	Many
Cicadellidae	Spotted Lantern Fly	<i>Lycorma delicatula</i>	1000	-	9	Adults	Many
Beetle	Redheaded flea beetle	<i>Systema frontalis</i>	1028	1570	8	2nd generation of un-hatched eggs	Many
Scale / Adelgid / Whitefly / Psyllid	Indian wax scale	<i>Ceroplastes ceriferus</i>	1145	-	6	Crawlers (1st generation)	Many
Beetle	Oriental Beetle	<i>Anomala orientalis</i>	1147	-	6	Adult emergence	Many

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Cicadellidae	Leafhoppers	<i>Species within Cicadellidae</i>	1266	1544	1	Nymphs / adults	Many
Lacebug	Lacebugs (on hawthorn)	<i>Corythucha cydoniae</i>	1266	1544	1	Nymphs / adults	Many
Caterpillar	Fall webworm	<i>Hyphantria cunea</i>	1266	1795	2	Caterpillars present - larvae treatment	Many
Mites	Two spotted spider mite	<i>Tetranychus urticae</i>	1300	2000	1	Nymphs / adults	Many
Borer - Roundhead / Longhorn	Roundheaded apple tree borer	<i>Saperda candida</i>	1514	1798	5	Typical treatment window	Many
Beetle	Redheaded flea beetle	<i>Systema frontalis</i>	1570	1860	8	2nd generation egg hatch	Many
Beetle	Japanese beetle	<i>Popillia japonica</i>	1590	1925	1	Adults (90%)	Many
Scale / Adelgid / Whitefly / Psyllid	White prunicola scale	<i>Pseudaulacaspis prunicola</i>	1637	-	6	Egg hatch / crawler (2nd generation)	Many
Weevil	Two-banded Japanese weevil	<i>Pseudocneorhinus bifasciatus</i>	1644	2271	1	Adults	Many
Scale / Adelgid / Whitefly / Psyllid	Obscure scale	<i>Melanaspis obscura</i>	1774	-	6	Egg hatch / crawler	Many
Mites	Southern red mite	<i>Oligonychus ilicis</i>	2500	2700	5	Typical treatment window	Many
Scale / Adelgid / Whitefly / Psyllid	Euonymus scale	<i>Unaspis euonymi</i>	35	120	2	Spring control of overwintering stage	Many, evergreen
Scale / Adelgid / Whitefly / Psyllid	Cottony maple scale	<i>Pulvinaria innumerabilis</i>	802	1265	1	Crawlers (1st generation) - control target	Many, shadetrees
Caterpillar	Greenstriped mapleworm	<i>Dryocampa rubicunda</i>	533	1645	5	Control target	Maple
Borer - Roundhead / Longhorn	Sugar maple borer	<i>Glycobius speciosus</i>	2032	2375	5	Typical treatment window	Maple
Scale / Adelgid / Whitefly / Psyllid	Japanese maple scale	<i>Lopholeucaspis japonica</i>	2508	-	6	Egg hatch / crawler (2nd generation)	Maple
Scale / Adelgid / Whitefly / Psyllid	Gloomy scale	<i>Melanaspis tenebricosa</i>	2000	3000	6*	Crawlers emerge. (1 generation) * Approximate range, more data needed.	Maple, many
Mites	Maple bladdergall mite	<i>Vasates quadripedes</i>	58	148	2	Spring control of overwintering stage	Maples

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Scale / Adelgid / Whitefly / Psyllid	Japanese maple scale	<i>Lopholeucaspis japonica</i>	829	-	6	Crawlers (1st generation)	Maples
Caterpillar	Mimosa webworm	<i>Homadaula anisocentra</i>	880	-	1	Larvae (1st generation)	Mimosa, Honeylocust
Caterpillar	Mimosa webworm	<i>Homadaula anisocentra</i>	1800	2100	1	Larvae (2nd generation)	Mimosa, Honeylocust
Caterpillar	Oak skeletonizer	<i>Bucculatrix ainsliella</i>	448	707	5	Typical treatment window	Oak
Leafminer / Midge / Fly	Oak blotch leafminers	<i>Cameraria spp.</i> ; <i>Tisheria spp.</i>	533	912	5	Typical treatment window	Oak
Scale / Adelgid / Whitefly / Psyllid	Oak leacanium scale	<i>Parthenolecanium quercifex</i>	789	-	6	Crawlers (1st generation)	Oak, hickory, birch, many
Scale / Adelgid / Whitefly / Psyllid	Golden oak scale	<i>Asterolecanium variolosum</i>	7	121	5	Spring control of overwintering stage	Oaks
Scale / Adelgid / Whitefly / Psyllid	Kermes oak scale	<i>Allokermes spp.</i>	298	912	5	Typical treatment window	Oaks
Mites	Oak spider mites	<i>Oligonychus bicolor</i>	802	1265	1	All Stages	Oaks
Scale / Adelgid / Whitefly / Psyllid	Golden oak scale	<i>Asterolecanium variolosum</i>	802	1266	5	Egg hatch	Oaks
Caterpillar	Oak skeletonizer	<i>Bucculatrix ainsliella</i>	1798	2155	1	Larvae	Oaks
Lacebug	Andromeda lacebug	<i>Stephanitis takeyai</i>	115	279	1	Nymphs (1st generation)	Pieris
Mites	European red mite	<i>Panonychus ulmi</i>	7	58	2	1st adults active	Pomes, Stone fruit
Weevil	Poplar and willow borer	<i>Crytorhynchus lapathi</i>	2271	2806	5	Typical treatment window	Poplar and Willow
Aphids / Thrips	Privet thrips	<i>Dendrothrips ornatus</i>	192	618	2	Typical treatment window	Privet
Mites	Privet rust mite	<i>Aculus ligustri</i>	298	802	1	All stages	Privet
Mites	Privet rust mite	<i>Aculus ligustri</i>	1266	1515	5	Second typical treatment window	Privet
Borer - Caterpillar	American plum borer	<i>Euzophera semifuneralis</i>	245	440	5	Adult flight, egg laying	Prunus

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Borer - Clearwing moth	Rhododendron borer	<i>Synanthedon rhododendri</i>	192	298	2	Typical treatment window	Rhododendron
Leafminer / Midge / Fly	Rhododendron gall midge	<i>Clinodiplosis rhododendri</i>	192	363	1	Larvae	Rhododendron
Lacebug	Azalea Lacebug	<i>Stephanitis pyrioides</i>	350	646	1	Adults (1st generation)	Rhododendron
Scale / Adelgid / Whitefly / Psyllid	Azalea whitefly	<i>Pealius azaleae</i>	448	700	5	Adults/nymphs (1st generation)	Rhododendron
Borer - Clearwing moth	Rhododendron borer	<i>Synanthedon rhododendri</i>	509	696	1	Adults emerge	Rhododendron
Lacebug	Azalea Lacebug	<i>Stephanitis pyrioides</i>	802	1029	1	Eggs / Nymphs 3rd Generation	Rhododendron
Scale / Adelgid / Whitefly / Psyllid	Azalea whitefly	<i>Pealius azaleae</i>	1250	1500	5	Adults/nymphs (2nd generation)	Rhododendron
Scale / Adelgid / Whitefly / Psyllid	Azalea whitefly	<i>Pealius azaleae</i>	2032	2150	5	Adults/nymphs (3rd generation)	Rhododendron
Scale / Adelgid / Whitefly / Psyllid	European fruit lecanium scale	<i>Parthenolecanium corni</i>	35	145	2	Spring control of overwintering stage	Shade trees
Scale / Adelgid / Whitefly / Psyllid	European fruit lecanium scale	<i>Parthenolecanium corni</i>	932	1645	6,1	Crawlers - control target	Shade trees
Aphids / Thrips	Spirea aphid	<i>Aphis spiraecola</i>	326	-	6	Adults/nymphs	Spirea
Caterpillar	Spruce budworm	<i>Choristoneura fumiferana</i>	200	300	5	Larvae	Spruce
Aphids / Thrips	Tuliptree aphid	<i>Illinoia liriodendri</i>	1151	1514	1	Nymphs / adults	Tulip
Aphids / Thrips	Tuliptree aphid	<i>Illinoia liriodendri</i>	1917	2033	1	Nymphs	Tulip
Hemiptera (true bugs)	Hairy chinch bug	<i>Blissus leucopterus</i>	765	870	1	1st generation (50% - 2nd instar)	Turf
Weevil	Bluegrass billbug	<i>Sphenophorus parvulus</i>	884	1003	1	Larvae 20%	Turf
Beetle	N. masked chafer beetle	<i>Cyclocephala borealis</i>	898	905	1	1st adults	Turf
Weevil	Bluegrass billbug	<i>Sphenophorus parvulus</i>	1094	1217	1	Larvae (40%)	Turf

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Caterpillar	Bluegrass sod webworm	<i>Parapediasia teterrella</i>	1250	1920	1	Larvae	Turf
Beetle	N. masked chafer beetle	<i>Cyclocephala borealis</i>	1377	1579	1	Adults (90%)	Turf
Hemiptera (true bugs)	Hairy chinch bug	<i>Blissus leucopterus</i>	1903	2160	1	Second generation- 50%- 2nd instars	Turf
Mites	Walnut blister mite	<i>Eriophyes erinea</i>	363	707	5	Typical treatment window	Walnut
Aphids / Thrips	White pine aphid	<i>Cinara strobi</i>	22	91	1	Spring control of overwintering stage	White and Scotch Pine
Sawfly - Wasp	Roseslug sawfly	<i>Endelomyia aethiops</i>	230	-	6	Egg hatch / early instars	Wild and cultivated roses
Aphids / Thrips	Willow twig aphids	<i>Lachnus spp.</i>	1644	2271	5	Typical treatment window	Willow
Beetle	Imported willow leaf beetle	<i>Plagiodera versicolora</i>	192	448	1	Larvae/Adults	Willows, Cottonwood, Poplar
Aphids / Thrips	Spiny witchhazel gall aphid	<i>Hamamelistes spinosus</i>	171	-	6	Control target	Witchhazel, River birch
Scale / Adelgid / Whitefly / Psyllid	Taxus mealybug	<i>Dysmicoccus wistariae</i>	246	618	1	Adults/Crawlers	Yew
Scale / Adelgid / Whitefly / Psyllid	Fletcher Scale (Yew)	<i>Parthenolecanium fletcheri</i>	1029	1388	1	Crawlers (1st generation) - control target	Yew, many conifers
Scale / Adelgid / Whitefly / Psyllid	Fletcher Scale (Yew)	<i>Parthenolecanium fletcheri</i>	2515	2800	1	Fall control of overwintering stage	Yew, many conifers
Weevil	Black Vine Weevil	<i>Otiorhynchus sulcatus</i>	148	400	2	Pupation / Adult emergence	Yews, Rhododendrons, many
Weevil	Black Vine Weevil	<i>Otiorhynchus sulcatus</i>	400	2800	1	Adults treatment	Yews, Rhododendrons, many

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References

Institution	Link	Cited #
Rutgers University	<i>Rutgers Cooperative Extension - Landscape IPM Notes (numerous)</i>	1
Cornell Univ. & Univ. of New Hampshire	http://ccetompkins.org/resources/using-growing-degree-days-for-insect-management	2
Penn State University	https://extension.psu.edu/ipm-basics-for-christmas-trees#section-2	3
Michigan State University	https://www.canr.msu.edu/ipm/agriculture/christmas_trees/gdd_of_conifer_insects	4
University of New Hampshire	https://www.agriculture.nh.gov/publications-forms/documents/landscape-pests.pdf	5
University of Maryland	https://extension.umd.edu/ipm/pest-predictive-calendar-landscapenursery	6
Michigan State University	https://www.canr.msu.edu/ipm/agriculture/christmas_trees/gdd_of_landscape_insects	7
Unv. Delaware & North Carolina State	<i>Correspondence with B. Kunkel (Unv. Del.) and D. Lauderdale (NC)</i>	8
PA Department of Agriculture	https://www.agriculture.pa.gov/Plants_Land_Water/PlantIndustry/Entomology/spotted_lanternfly/Pages/default.aspx	9

Degree-Day Calculators

Link	Selection criteria per calculator (MODEL type & LOW temp. threshold & UPPER temp. threshold)	Base
https://uspest.org/dd/model_app	Select "All models" --> "Simple average / DD" --> set 50F (lower/base) --> set 95F (upper)	50F
https://newwa.cornell.edu/degree-day-calculator/	Select "Base 50" --> modify date range	50F

Please note; Growing degree-day ranges are for scouting purposes only, and may not account for all variations in locations, micro-climates, or pest populations. Many of these ranges have not been ground-truthed outside their original research range, and local discrepancies are likely to occur. Therefor please help us collectively improve the accuracy of this document, by alerting twaller@njaes.rutgers.edu (856-451-2800 ext.1) if pest observations differ from those listed here, or insects not listed here are of interest and require additional research. Rutgers University is not responsible for the misuse of this information.

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(FOLLOW THE URL IN PDF FORMAT OR SCAN THE QR CODE IF HANDHELD)

UPEST

Growing degree-day calculator

https://uspest.org/dd/model_app



NEWA

Growing degree-day calculator

<https://newa.cornell.edu/degree-day-calculator>



Rutgers Plant and Pest Advisory

<https://plant-pest-advisory.rutgers.edu/category/landscape-nursery-tur>



Instructions on obtaining your local growing degree-days

<https://plant-pest-advisory.rutgers.edu/?s=obtaining>



Additional Growing Degree-day Resources and Source / Citation Information

<http://ccetompkins.org/resources/using-growing-degree-days-for-insect-management>
<https://extension.psu.edu/ipm-basics-for-christmas-trees#section-2>

https://www.canr.msu.edu/ipm/agriculture/christmas_trees/gdd_of_conifer_insects

<https://www.agriculture.nh.gov/publications-forms/documents/landscape-pests.pdf>
<https://extension.umd.edu/ipm/pest-predictive-calendar-landscapenursery>

https://www.canr.msu.edu/ipm/agriculture/christmas_trees/gdd_of_landscape_insects

https://www.agriculture.pa.gov/Plants_Land_Water/PlantIndustry/Entomology/spotted_lanternfly/Pages/default.aspx

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