INSECT CONTROL FOR ORNAMENTALS GROWN IN NURSERIES OR LANDSCAPES

NOTE: The following list of pesticides is labeled for the uses listed; however, there are different formulations of particular compounds and you must make sure the pesticide used is properly labeled. The plant which is being damaged and the site where the plant is located (nursery or landscape) must be listed on the label. The pests that a compound is registered for are also listed on the label.

Many insects are developing resistance to currently available pesticides. Practice resistance management and rotate the insecticides used to manage a pest. With most pesticides, you should rotate the compounds used at least once during a generation time for that insect. In addition, it is desirable to rotate mode of action of compounds used. A guide to rotating modes of action is the Insecticide Resistance Action Committee (IRAC) classification of the different mode of action sites and a letter for subgroups. In resistance management rotations, these number/letter codes can be used to determine which compounds have different modes of action. These are listed in the table under the column heading "Mode of Action Group" (un = unknown).

Some of the insecticides listed are extremely toxic. Handle with caution and use protective equipment required by the label. A minimum interval between application and reentry has been established. Make sure of the proper reentry period for the insecticide has been observed before allowing people without label prescribed personal protective equipment to enter the treated area. These are listed in the table under the column heading "Minimum Hours Between Application and Reentry."

Phytotoxicity (damage to the plant as the result of the application of a chemical) is an important consideration in controlling pests of ornamentals. Phytotoxicity is generally expressed as damage to the leaves, flowers, or stems and is observed as "burn" (browning of tissue), "chlorosis" (yellowing or bleaching of tissue), or modification of growth by deformation or stunting. There are many species and cultivars of ornamental plants with varying sensitivity to chemicals. Other environmental conditions, such as your particular growing conditions, will also affect phytotoxicity. You are encouraged to evaluate a pesticide for phytotoxicity on a few plants under your particular conditions before treating all plants.

Insecticides listed below are identified by common chemical name. A trade name in parentheses may also be listed as a convenience for the reader. Pesticide labels for commercial and homeowner products that are currently registered for use in Arkansas may be found through the Arkansas Department of Agriculture/State Plant Board website by clicking on the following link: https://agriculture.arkansas.gov/crops-industry/pesticides/pesticide-registration/.

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

Insect or Mite	Pesticide Common Name (Trade Name)	Minimum Hours Between Application and Reentry	IRAC Mode of Action Group	Permitted Application Sites G = greenhouse L = landscape N = nursery
Adelgid	acetamiprid (TriStar)	12 hours	4A	G, L, N
	chlorantraniliprole (Acelepryn)	4 hours	28	L
	azadirachtin (Azatin)	4 hours	18B	G,L,N
	bifenthrin (Talstar)	12 hours	3	Follow label
	bifenthrin + imidacloprid (Alectus)	12 hours	3+ 4A	L
	bifenthrin + clothianidin (Aloft)	12 hours	3 + 4A	L
	dinotefuran (Safari)	12 hours	4A	G, L, N
	cyclaniliprole + flonicamid (Pradia)	12 hours	28 + 29	G, N **Not for residential use**
	horticultural oil (various brands)	4 hours		G, L, N
	imidacloprid (Merit, Marathon, others)	12 hours	4A	Follow label
	insecticidal soap (various brands)	12 hours	---	G, L, N
	spirotetramat (Kontos)	24 hours foliar (see exception for drench application)	23	G, N
	thiamethoxam (Flagship)	12 hours	4A	G, N
Aphids	abamectin (Avid)	12 hours	6	G, L, N
	acephate (Orthene)	24 hours	1B	G, L, N
	acetamiprid (TriStar)	12 hours	4A	G, L, N
	afidopyropen (Ventigra)	Follow label directions	9D	G, L, N
	azadirachtin (Azatin XL, Ornazin)	4 hours	18B	G, L, N
	Beauveria bassiana (BotaniGard)	4 hours	---	G, L, N
	bifenthrin (Talstar)	12 hours	3	Follow label
	bifenthrin + clothianidin (Aloft)	12 hours	4 + 4A	L
	bifenthrin + imidacloprid (Allectus)	12 hours	3 + 4A	L
	carbaryl (Sevin)	12 hours	1A	L, N
	clothianidin (Arena)	12 hours	4A	Follow label
	cyclaniliprole + flonicamid (Pradia)	12 hours	28 + 29	G, N **Not for residential use**

INSECT CONTROL FOR ORNAMENTALS GROWN IN NURSERIES OR LANDSCAPES

Insect or Mite	Pesticide Common Name (Trade Name)	Minimum Hours Between Application and Reentry	IRAC Mode of Action Group	Permitted Application Sites: G = greenhouse L = landscape N = nursery
Aphids	cyfluthrin (Decathlon)	Follow label directions	3	G, N
(cont.)	dinotefuran (Safari)	12 hours	4A	G, L, N
	fluvalinate (Mavrik)	Follow label directions	3	G, L
	horticultural oil (various brands)	4 hours	—	G, L, N
	imidacloprid (Merit, Marathon)	12 hours	4A	Follow label
	Isaria fumosorosea (Preferal)	4 hours	UN	G, N
	insecticidal soap (various brands)	12 hours follow label directions	—	G, L, N
	neem oil (Triact) 70	4 hours	18B	G, L, N
	permethrin (Astro, Perm-UP, others)	12 hours	3	Follow label
	pymetrozine (Endeavor)	12 hours	9B	G, L, N
	pyrethrins (various brands)	12 hours	3A	G, L, N
	pyriproxyfen (Distance)	12 hours	7C	G,L,N
	spinetoram + sulfoxaflor (XXpire)	12 hours	4C + 5	G, L, N
	spirotetramat (Kontos)	24 hours foliar (see exception for drench application)	23	G, N
	thiamethoxam (Flagship)	12 hours	4A	G, N
Armored Scale (such as juniper scale, oystershell scale, pine needle scale, tea scale, euonymus scale, white peach scale)	acephate (Orthene)	24 hours	1B	G, L, N
	acetamiprid (TriStar)	12 hours	4A	G, L, N
	afidopyropen (Ventigra)	Follow label directions. (nymphs and crawlers only)	9D	G, L, N
	azadirachtin (Azatin)	4 hours	18B	G,L,N
	bifenthrin (Talstar S Select)	12 hours	3	G, L, N
	buprofezin (Talus)	12 hours	16	G, L, N
	carbaryl (Sevin)	Follow label directions	1A	L, N
	dinotefuran (Safari)	12 hours	4A	G, L, N
	horticultural oil (various brands)	4 hours	---	G, L, N
	insecticidal soap (various brands)	12 hours follow label directions	---	G, L, N
	neem oil (Triact) 70	4 hours	18B	G, L, N
	pyriproxyfen (Distance)	12 hours	7C	G, L, N
	spinetoram + sulfoxaflor (XXpire)	12 hours	4C + 5	G, L, N
Bagworm	acephate (Orthene)	24 hours	1B	G, L, N
	acetamiprid (TriStar)	12 hours	4A	G, L, N
	azadirachtin (Azatin)	4 hours	18B	G, L, N
	Bacillus thuringiensis kurstaki (BiobitHP, DiPel or Foray)	4 hours	11B2	G, L, N
	bifenthrin (Talstar)	12 hours	3	G, L, N
	bifenthrin + clothianidin (Aloft)	12 hours	4 + 4A	L
	bifenthrin + imidacloprid (Allectus)	12 hours	3 + 4A	L
	carbaryl (Sevin)	Follow label directions	1A	L, N
	chlorantraniliprole (Acelepryn)	4 hours	28	L
	cyclaniliprole + flonicamid (Pradia)	12 hours	28 + 29	G, N **Not for residential use**
	fluvalinate (Mavrik)	Follow label directions	3	G, L
	indoxacarb (Provaunt)	12 hours	22	L

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Insect or Mite	Pesticide Common Name (Trade Name)	Minimum Hours Between Application and Reentry	IRAC Mode of Action Group	Permitted Application Sites G = greenhouse L = landscape N = nursery
Bagworm	*Isaria fumosorosea* (Preferal)	4 hours	UN	G, N
(cont.)	novaluron (Pedestal)	12 hours	15	G, N
	spinetoram + sulfoxaflor (XXpire)	12 hours	4C + 5	G, L, N
	spinosad (Conserve SC)	4 hours	5	G, N
Bark Beetle	bifenthrin (Onyx, Talstar)	Follow label directions	3	Follow label
	permethrin (Astro, Perm-UP, others)	12 hours	3	Follow label
Black Vine Weevil	acephate (Orthene)	Follow label directions	1A	G, L, N
	Beauveria bassiana (BotaniGard)	4 hours	---	G, L, N
	bifenthrin (Onyx, Talstar)	Follow label directions	3	Follow label
	cyclaniliprole + flonicamid (Pradia)	12 hours	28 + 29	G, N **Not for residential use**
	cyfluthrin + imidacloprid (Discus)	12 hours	3 + 4A	N
	dinotefuran (Safari)	12 hours	4A	G, L, N
	fluvalinate (Mavrik)	Follow label directions	3	G, L
	Isaria fumosorosea (Preferal)	4 hours	UN	G, N
	imidacloprid (Merit, Marathon, others)	12 hours	4A	Follow label
Borers (clearwing, flatheaded, and roundheaded borers are included in this section. Make sure label specifically lists the type of borer you are trying to control.)	azadirachtin (Azatin)	4 hours	18B	G, L, N
	bifenthrin (Onyx, Talstar)	Follow local regulations for landscape reentry	3	Follow label
	chlorantraniliprole (Acelepryn)	4 hours	28	L
	cyclaniliprole + flonicamid (Pradia)	12 hours	28 + 29	G, N **Not for residential use**
	cyfluthrin + imidacloprid (Discus)	12 hours	3 + 4A	N
	dinotefuran (Safari)	12 hours	4A	G, L, N
	imidacloprid (Merit, Marathon II, others)	12 hours	4A	Follow label
	permethrin (Astro, Perm-UP, Permethrin Pro)	12 hours	3	Follow label
Caterpillars (such as armyworm, budworm, eastern tent caterpillar, fall webworm, orangestriped oakworm, leafrollers)	acephate (Orthene)	24 hours	1B	G, L, N
	acetamiprid (TriStar)	12 hours	4A	G, L, N
	azadirachtin (Azatin)	4 hours	18B	G, L, N
	Bacillus thuringiensis kurstaki (DiPel)	4 hours	11B2	G, L, N
	bifenthrin (Onyx, Talstar)	Follow label directions	3	Follow label
	bifenthrin + clothianidin (Aloft)	12 hours	4 + 4A	L
	bifenthrin + imidacloprid (Allectus)	12 hours	3 + 4A	L
	carbaryl (Sevin)	12 hours	1A	L, N
	chlorantraniliprole (Acelepryn)	4 hours	28	L
	chlorfenapyr (Pylon)	12 hours	13	G
	cyclaniliprole + flonicamid (Pradia)	12 hours	28 + 29	G, N **Not for residential use**
	cyfluthrin (Decathlon)	12 hours	3A	G,L,N
	diflubenzuron (Dimilin)	12 hours	15	L, N
	emamectin benzoate (Arbormectin)	See label.	6	L
	indoxacarb (Provaunt)	12 hours	22	L
	insecticidal soap (various brands)	Follow label directions	---	G, L, N
	Isaria fumosorosea (Preferal)	4 hours	UN	G, N

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Insect or Mite	Pesticide Common Name (Trade Name)	Minimum Hours Between Application and Reentry	IRAC Mode of Action Group	Permitted Application Sites: G = greenhouse L = landscape N = nursery
Caterpillars	methoxyfenozide (Intrepid)	4 hours	18	G,L,N
(cont.)	novaluron (Pedestal)	12 hours	15	G, N
	permethrin (Astro, Perm-UP, Permethrin Pro)	12 hours	3	Follow label
	spinetoram + sulfoxaflor (XXpire)	12 hours	4C + 5	G, L, N
	spinosad (Conserve SC)	4 hours	5	G, N
	tebufenozide (Confirm)	4 hours	18A	G, L, N
Carpenter Ant	permethrin (Astro, Perm-UP, Permethrin Pro)	12 hours	3	Follow label
Cricket	bifenthrin (Onyx, Talstar)	12 hours	3	Follow label
	cyfluthrin (Decathlon)	Follow label directions	3	G, N
	insecticidal soap (various brands)	Follow label directions	3	G, L, N
	pyrethrins (Pyrenone)	Follow label directions		Follow label
Eriophyid Mite	abamectin (Avid)	12 hours	6	G, L, N
	fenpyroximate (Akari)	12 hours	21A	G,N
	horticultural oil (various brands)	4 hours	---	G, L, N
	spiromesifen (Judo, Forbid)	12 hours	23	G, N
False Spider Mite (such as privet mite)	acequinocyl (Shuttle)	12 hours	20B	G, N
	bifenazate (Floramite)	12 hours	un	G, L, N
	etoxazole (TetraSan)	12 hours	10B	G, L, N
	horticultural oil (various brands)	4 hours	---	G, L, N
	insecticidal soaps	12 hours	---	G, L, N
	spiromesifen (Judo, Forbid)	12 hours	23	Follow label
Fire Ant (Imported)	Treatment is required to ship containerized or balled plants from quarantined to non-quarantined areas. Also, maintenance of Fire Ant free status of nurseries in federal imported fire ant quarantine areas requires certain actions. Consult Arkansas Plant Board to determine your nursery's classification and consult USDA APHIS 81-25-001, "Imported Fire Ant: Quarantine Treatments for Nursery Stock, Grass Sod, and Related Materials," updated January 2015, for all rules and regulations pertaining to the Federal Imported Fire Ant quarantine and treatment requirements. The following insecticides are authorized by USDA for the treatment of regulated articles under the Imported Fire Ant (IFA) quarantine: abamectin (Award II) Bait - Field grown bifenthrin (Talstar, Onyx Pro), etc. (many) G, F, EC - Container, B&B, sod chlorpyrifos (Dursban, Chlorpyrifos) E, G - Container, B&B, field grown, sod diazinon Section 24(c) only, contact State plant regulatory official fipronil (Top Choice, Fipronil) G - Container, sod hydramethylnon (Amdro Pro) Bait - Field grown methoprene (Extinguish) Bait - Field grown pyriproxyfen (Distance) Bait - Field grown tefluthrin (no label currently available) G - Container			
Fungus Gnat Adults	bifenthrin (Talstar)	12 hours	3	follow label
	cyfluthrin (Decathlon)	12 hours	3A	G, L, N
	fluvalinate (Mavrik)	12 hours	3A	G, L, N
	insecticidal soaps	12 hours		G, L, N
	permethrin (Astro, Perm-UP, Permethrin Pro)	12 hours	3	Follow label

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Insect or Mite	Pesticide Common Name (Trade Name)	Minimum Hours Between Application and Reentry	IRAC Mode of Action Group	Permitted Application Sites G = greenhouse L = landscape N = nursery
Fungus Gnat Larvae	acetamiprid (TriStar)	12 hours	4A	G, L, N
	azadirachtin (Azatin XL)	12 hours	18B	G, L, N
	Bacillus thuringiensis var. *israelensis*	4 hours	11A1	Follow label
	chlorfenapyr (Pylon)	12 hours	13	G
	cyromazine (Citation)	12 hours	17	G, L, N
	diflubenzuron (Adept)	12 hours	15	G
	kinoprene (Enstar II)	4 hours	7A	G
	pyriproxyfen (Distance)	12 hours	7C	G, L, N
	Steinernema feltiae (various; beneficial nematode)	0 hours	biological	G, L, N
Granulate Ambrosia Beetle	permethrin (Astro, Perm-UP, Permethrin Pro)	12 hours	3	Follow label
	cyclaniliprole + flonicamid (Pradia)	12 hours	28 + 29	G, N **Not for residential use**
Grasshopper	bifenthrin (Onyx, Talstar)	12 hours	3	Follow label
	carbaryl (Sevin 5) bait	Follow label directions	1A	Follow label
	cyfluthrin (Decathlon)	Follow label directions	3	G, N
	insecticidal soap (various brands)	12 hours	---	G, L, N
Gypsy Moth	Contact the Arkansas State Plant Board, 1 Natural Resources Drive, P. O. Box 1069, Little Rock, AR 72203-1069, Phone 501-225-1598, Fax 501-219-1697.			
Japanese Beetle (adult) **and other leaf-feeding scarab beetles**	acephate (Orthene)	Follow label directions	1A	G, L, N
	acetamiprid (TriStar)	12 hours	4A	G, L, N
	azadirachtin (Azatin XL)	4 hours	18B	G, L, N
	bifenthrin (Onyx, Talstar)	Follow label directions	3	Follow label
	bifenthrin + clothianidin (Aloft)	12 hours	4 + 4A	L
	bifenthrin + imidacloprid (Allectus)	12 hours	3 + 4A	L
	carbaryl (Sevin)	Follow label directions	3	L, N
	chlorantraniliprole (Acelepryn)	4 hours	28	L
	clothianidin (Arena)	12 hours	4A	L
	cyclaniliprole + flonicamid (Pradia)	12 hours	28 + 29	G, N **Not for residential use**
	cyfluthrin (Decathlon) 20 WP	Follow label directions	3	G, N
	cyfluthrin + imidacloprid (Discus)	12 hours	3 + 4A	N
	dinotefuran (Safari)	12 hours	4A	G, L, N
	imidacloprid (Merit, Marathon II, others)	12 hours	4A	Follow label
	permethrin (Astro, Perm-UP, Permethrin Pro)	12 hours	3	Follow label
	spinetoram + sulfoxaflor (XXpire)	12 hours	4C + 5	G, L, N
	spinosad (Conserve SC)	4 hours	5	G,N
	thiamethoxam (Flagship)	12 hours	4A	G, N
June Beetle	carbaryl (Sevin)	Follow label directions	1A	L, N
	cyclaniliprole + flonicamid (Pradia)	12 hours	28 + 29	G, N **Not for residential use**
	cyfluthrin (Decathlon)	Follow label directions	3	G, N

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Insect or Mite	Pesticide Common Name (Trade Name)	Minimum Hours Between Application and Reentry	IRAC Mode of Action Group	Permitted Application Sites G = greenhouse L = landscape N = nursery
Lace Bug	abamectin (Avid)	12 hours	6	G,L,N
	acephate (Orthene)	Follow label directions	1A	G, L, N
	acetamiprid (Tri-Star)	12 hours	4A	G, L, N
	azadirachtin (Azatin XL)	4 hours	18B	G,L,N
	Beauveria bassiana (BotaniGard)	4 hours	---	G, L, N
	bifenthrin (Talstar, Onyx)	12 hours	3	Follow label
	bifenthrin + clothianidin (Aloft)	12 hours	4 + 4A	L
	bifenthrin + imidacloprid (Allectus)	12 hours	3 + 4A	L
	carbaryl (Sevin)	12 hours	1A	L, N
	chlorantraniliprole (Acelepryn)	4 hours	28	L
	Chromobacterium subtsugae (Grandevo WDG)	4 hours	UN	G,L,N
	cyclaniliprole + flonicamid (Pradia)	12 hours	28 + 29	G, N **Not for residential use**
	cyfluthrin + imidacloprid (Discus)	12 hours	3 + 4A	N
	dinotefuran (Safari)	12 hours	4A	G, L, N
	imidacloprid (Merit, Marathon, others)	12 hours	4A	Follow label
	permethrin (Astro, Perm-UP, Permethrin Pro)	12 hours	3	Follow label
	spinetoram + sulfoxaflor (XXpire)	12 hours	4C + 5	G, L, N
	soap (Olympic Insecticidal)	12 hours; follow label directions	---	Follow label
	thiamethoxam (Flagship)	12 hours	4A	G, N
Leaf Beetles (such as cucumber beetle, elm leaf beetle, willow leaf beetle, and flea beetles including *Altica* spp.)	acephate (Orthene)	12 hours	1A	G, L, N
	acetamiprid (TriStar)	12 hours	4A	G, L, N
	azadirachtin (Azatin XL)	4 hours	18B	G,L,N
	Beauveria bassiana (BotaniGard)	4 hours		G,L,N
	bifenthrin (Onyx, Talstar)	12 hours	3	Follow label
	bifenthrin + clothianidin (Aloft)	12 hours	4 + 4A	L
	bifenthrin + imidacloprid (Allectus)	12 hours	3 + 4A	L
	carbaryl (Sevin)	12 hours	3	L, N
	chlorantraniliprole (Acelepryn)	4 hours	28	L
	cyclaniliprole + flonicamid (Pradia)	12 hours	28 + 29	G, N **Not for residential use**
	cyfluthrin + imidacloprid (Discus)	12 hours	3 + 4A	N
	dinotefuran (Safari)	12 hours	4A	G, L, N
	imidacloprid (Merit, Marathon II, others)	12 hours	4A	Follow label
	spinetoram + sulfoxaflor (XXpire)	12 hours	4C + 5	G, L, N
	spinosad (Conserve SC)	4 hours	5	G, N
	thiamethoxam (Flagship)	12 hours	4A	G, N

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Leafhoppers (such as potato leafhopper and sharpshooter)	abamectin (Avid)	12 hours	6	G,L,N
	acephate (Orthene)	Follow label directions	1A	G, L, N
	acetamiprid (TriStar) 70 WSP	24 hours	4A	G, L, N
	azadirachtin (Azatin XL)	4 hours	18B	G,L,N
	bifenthrin (Onyx, Talstar)	Follow label directions	3	Follow label
	bifenthrin + clothianidin (Aloft)	12 hours	4 + 4A	L
	bifenthrin + imidacloprid (Allectus)	12 hours	3 + 4A	L
	carbaryl (Sevin)	Follow label directions	1A	L, N
	chlorantraniliprole (Acelepryn)	4 hours	28	L
	Chromobacterium subtsugae (Grandevo WDG)	4 hours	UN	G,L,N
	clothianidin (Arena)	12 hours	4A	L
	cyfluthrin (Decathlon)	Follow label directions	3	G, N
	cyfluthrin + imidacloprid (Discus)	12 hours	3 + 4A	N
	dinotefuran (Safari)	12 hours	4A	G, L, N
	fluvalinate (Mavrik)	Follow label directions	3	G, L
	imidacloprid (Merit, Marathon II, others)	12 hours	4A	Follow label
	insecticidal soap (various brands)	12 hours; follow label directions	---	G, L, N
	neem oil (Triact) 90 EC	4 hours	18B	G, L, N
	permethrin (Astro, Perm-UP, Permethrin Pro)	12 hours	3	Follow label
	spinetoram + sulfoxaflor (XXpire)	12 hours	4C + 5	G,L,N
	spirotetramat (Kontos)	24 hours foliar (see exception for drench application)	23	G, N
	thiamethoxam (Flagship)	12 hours	4A	G, N
Leafminers (such as boxwood leafminer, holly leafminer, birch leafminer) **Note:** This includes dipterous, lepidopterous, and coleopterous leafminers. Make sure leafminer to be treated is listed on label.	abamectin (Avid)	Follow label directions	6	G, L, N
	acephate (Orthene)	Follow label directions	1A	G, L, N
	acetamiprid (TriStar)	24 hours	4A	G, L, N
	azadirachtin (Azatin XL)	12 hours	18B	G, L, N
	bifenthrin (Onyx, Talstar)	Follow label directions	3	Follow label
	chlorantraniliprole (Acelepryn SC)	4 hours	28	L
	clothianidin (Arena)	12 hours	4A	L
	cyclaniliprole + flonicamid (Pradia)	12 hours	28 + 29	G, N **Not for residential use**
	cyfluthrin + imidacloprid (Discus)	12 hours	3 + 4A	N
	cvromazine (Citation)	12 hours	17	G,L,N
	dinotefuran (Safari)	12 hours	4A	G, L, N
	imidacloprid (Merit, Marathon, others)	12 hours	4A	Follow label
	Isaria fumosorosea (Preferal)	4 hours	UN	G, N
	permethrin (Astro, Perm-UP, Permethrin Pro)	12 hours	3	Follow label
	pyriproxyfen (Distance)	12 hours	7C	G, L, N
	spinosad (Conserve SC)	4 hours	5	G, N

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Mealybugs	acephate (Orthene)	12 hours	1A	G, L, N
	acetamiprid (TriStar)	24 hours	4A	G, L, N
	afidopyropen (Ventigra)	Follow label directions	9D	G, L, N
	Beauveria bassiana (BotaniGard)	4 hours	---	G, L, N
	bifenthrin (Onyx, Talstar)	Follow label directions	3	Follow label
	buprofezin (Talus)	12 hours	16	G, N
	carbaryl (Sevin)	Follow label directions	1A	L, N
	clothianidin (Arena)	12 hours	4A	L
	cyclaniliprole + flonicamid (Pradia)	12 hours	28 + 29	G, N **Not for residential use**
	cyfluthrin (Decathlon) 20 WP	Follow label directions	3	G, N
	cyfluthrin + imidacloprid (Discus)	12 hours	3 + 4A	N
	dinotefuran (Safari)	12 hours	4A	G, L, N
	fluvalinate (Mavrik) 22.3 F	Follow label directions	3	G, L
	horticultural oil (various brands)	4 hours	---	G, L, N
	imidacloprid (Merit, Marathon, others)	12 hours	4A	Follow label
	insecticidal soap (various brands)	12 hours follow label directions	---	G, L, N
	Isaria fumosorosea (Preferal)	4 hours	UN	G, N
	neem oil (Triact) 70	4 hours	18B	G, L, N
	permethrin (Astro, Perm-UP, Permethrin Pro)	12 hours	3	Follow label
	spinetoram + sulfoxaflor (XXpire)	12 hours	4C + 5	G, L, N
	spirotetramat (Kontos)	24 hours foliar (see exception for drench application)	23	G, N
	thiamethoxam (Flagship)	12 hours	4A	G, N
Pillbug	bifenthrin (Onyx, Talstar)	12 hours	3	Follow label
	cyfluthrin (Decathlon) 20 WP	Follow label directions	3	G, N
Plant Bugs	bifenthrin (Onyx, Talstar)	Follow label directions	3	Follow label
	cyclaniliprole + flonicamid (Pradia)	12 hours	28 + 29	G, N **Not for residential use**
	cyfluthrin (Decathlon)	Follow label directions	3	G, N
	insecticidal soap (various brands)	Follow label directions	---	G, L, N
	Isaria fumosorosea (Preferal)	4 hours	UN	G, N
	permethrin (Astro, others)	12 hours	3	Follow label
	spinetoram + sulfoxaflor (XXpire)	12 hours	4C + 5	G, L, N
	thiamethoxam (Flagship)	12 hours	4A	G, N
Psyllid	abamectin (Avid)	Follow label directions	6	G, L, N
	acephate (Orthene)	Follow label directions	1A	G, L, N
	acetamiprid (TriStar)	24 hours	4A	G, L, N
	azadirachtin (Azatin XL)	12 hours	18B	G, L, N
	Beauveria bassiana (BotaniGard)	4 hours	---	G, L, N
	bifenthrin (Onyx, Talstar)	Follow label directions	3	**Follow label**
	buprofezin (Talus)	12 hours	16	**G,N**

Insect or Mite	Pesticide Common Name (Trade Name)	Minimum Hours Between Application and Reentry	IRAC Mode of Action Group	Permitted Application Sites G = greenhouse L = landscape N = nursery
Psyllid (cont.)	clothianidin (Arena, Celero)		4A	**L**
	cyclaniliprole + flonicamid (Pradia)	12 hours	28 + 29	G, N **Not for residential use**
	cyfluthrin (Decathlon) 20 WP	Follow label directions	3	**G,N**
	cyfluthrin + imidacloprid (Discus)	12 hours	3 + 4A	**N**
	dinotefuran (Safari)	12 hours	4A	G, L, N
	imidacloprid (Merit, Marathon, others)	12 hours	4A	Follow label
	insecticidal soap (various brands)	12 hours	---	G, L, N
	Isaria fumosorosea (Preferal)	4 hours	UN	G, N
	neem oil (Triact) 70	4 hours	18B	G, L, N
	spinosad (Conserve SC)	4 hours	5	G, N
	spirotetramat (Kontos)	24 hours foliar (see exception for drench application)	23	G,N
	thiamethoxam (Flagship)	12 hours	4A	G, N
Sawfly	acephate (Orthene)	Follow label directions	1A	G, L, N
	acetamiprid (TriStar)	24 hours	4A	G, L, N
	azadirachtin (Azatin XL)	12 hours	18B	G, L, N
	bifenthrin (Onyx, Talstar)	Follow label directions	3	Follow label
	carbaryl (Sevin)	Follow label directions	1A	L, N
	chlorantraniliprole (Acelepryn SC)	4 hours	28	L
	cyclaniliprole + flonicamid (Pradia)	12 hours	28 + 29	G, N **Not for residential use**
	cyfluthrin (Decathlon) 20 WP	Follow label directions	3	G, N
	cyfluthrin + imidacloprid (Discus)	12 hours	3 + 4A	N
	imidacloprid (Merit, Marathon, others)	12 hours	4A	Follow label
	diflubenzuron (Dimilin)	12 hours	15	L, N
	dinotefuran (Safari)	12 hours	4A	G,L,N
	emamectin benzoate (Arbormectin)	See label.	6	L
	indoxacarb (Provaunt)	12 hours	22	L
	insecticidal soap (various brands)	12 hours	---	G, L, N
	spinetoram + sulfoxaflor (XXpire)	12 hours	4C + 5	G, L, N
	spinosad (Conserve SC)	4 hours	5	G, N
	thiamethoxam (Flagship)	12 hours	4A	G,N
Slug, Snail	iron phosphate (bait)	Follow label directions	un	Follow label
	metaldehyde + carbaryl (Sevin) bait	Follow label directions	Follow label	Follow label
	methiocarb (Mesurol)	24 hours	1A	Follow label
Soft Scale (such as Fletcher scale, cottony cushion scale, wax scale, San Jose scale)	acetamiprid (TriStar)	12 hours	4A	G, L, N
	acephate (Orthene)	24 hours	16	G,L,N
	azadirachtin (Azatin)	4 hours	18B	G,L,N
	afidopyropen (Ventigra)	Follow label directions (nymphs and crawlers only)	9D	G, L, N
	bifenthrin (Talstar)	12 hours	3	Follow label
	buprofezin (Talus)	12 hours	16	G, N
	cyclaniliprole + flonicamid (Pradia)	12 hours	28 + 29	G, N **Not for residential use**
	cyfluthrin + imidacloprid (Discus)	12 hours	3 + 4A	N
	dinotefuran (Safari)	12 hours	4A	G, L, N

INSECT CONTROL FOR ORNAMENTALS GROWN IN NURSERIES OR LANDSCAPES

Insect or Mite	Pesticide Common Name (Trade Name)	Minimum Hours Between Application and Reentry	IRAC Mode of Action Group	Permitted Application Sites G = greenhouse L = landscape N = nursery
Soft Scale (cont.)	fenoxycarb (Preclude)	12 hours	76	G
	flonicamid (Aria)	12 hours	96	G,L,N
	horticultural oil (various brands)	4 hours	---	G, L, N
	imidacloprid (Merit, Marathon, others)	Follow label directions	4A	Follow label
	insecticidal soap (various)	12 hours		G,L,N
	neem oil (Various)	4 hours	UN	G,L,N
	pyriproxyfen (Distance)	12 hours	7C	G, L, N
	spinetoram + sulfoxaflor (XXpire)	12 hours	4C + 5	G, L, N
	spirotetramat (Kontos)	24 hours foliar (see exception for drench application)	23	G,N
	thiamethoxam (Flagship)	12 hours	4A	G, N
Sowbug	cyfluthrin (Decathlon)	Follow label directions	3	G, N
Spider Mite (such as twospotted, southern red, and spruce spider mite)	abamectin (Avid)	12 hours	6	G, L, N
	acephate (Orthene)	24 hours	16	G,L,N
	acequinocyl (Shuttle)	12 hours	20B	G, N
	azadirachtin (Azatin)	4 hours	18B	G,L,N
	Beauveria bassiana (BotaniGard)	4 hours	—	G, L, N
	bifenazate (Floramite)	12 hours	un	G, L, N
	bifenthrin (Talstar)	12 hours	3	Follow label
	Chromobacterium subtsugae (Grandevo WDG)	4 hours	UN	G,L,N
	clofentezine (Ovation)	12 hours	10A	G, N
	cyflumetofen (Sultan)	12 hours	25	G, L, N
	etoxazole (TetraSan)	12 hours	10B	G, L, N
	fenazaquin (Magus)	12 hours	21A	G, L, N
	fenpyroximate (Akari)	12 hours	21A	G, N
	hexythiazox (Hexygon)	12 hours	10B	G, L, N
	horticultural oil (various brands)	4 hours	---	Follow label
	insecticidal soaps	12 hours	---	Follow label
	Isaria fumosorosea (Preferal)	4 hours	UN	G,N
	pyridaben (Sanmite)	12 hours	21A	G, L, N
	spiromesifen (Judo, Forbid)	12 hours	23	Follow label
Spittlebug	acephate (Orthene)	12 hours	1A	G, L, N
	cyfluthrin (Decathlon)	Follow label directions	11B2	G, N
	horticultural oil (various brands)	4 hours	---	Follow label
	insecticidal soaps (various brands)	12 hours	---	Follow label
Stink Bug	pyrethrins (PyGanic, Pyrenone)	Follow label directions	3	Follow label
	cyclaniliprole + flonicamid (Pradia)	12 hours	28 + 29	G, N Not for residential use. Suppression of stink bug NYMPHS ONLY
Thrips	abamectin (Avid)	12 hours	6	G, L, N
	acephate (Orthene)	24 hours	1B	G, L, N
	acetamiprid (TriStar)	12 hours	4A	G, L, N

Insect or Mite	Pesticide Common Name (Trade Name)	Minimum Hours Between Application and Reentry	IRAC Mode of Action Group	Permitted Application Sites G = greenhouse L = landscape N = nursery
Thrips (cont.)	azadirachtin (Azatin)	4 hours	18B	G, L, N
	Beauveria bassiana (BotaniGard)	4 hours	---	G, L, N
	bifenthrin (Onyx, Talstar)	Follow label directions	3	Follow label
	chlorfenapyr (Pylon)	12 hours	3A	G,L,N
	Chromobacterium subtsugae (Grandevo WDG)	12 hours	98	G,L,N
	cyclaniliprole + flonicamid (Pradia)	12 hours	28 + 29	G, N **Not for residential use**
	cyantraniliprole (Mainspring)	12 hours	3A	**G,L,N**
	cyfluthrin (Decathlon)	12 hours	3A	G, L, N
	dinotefuran (Safari)	12 hours	4A	G,L,N
	flonicamid (Aria)	12 hours	9C	G, L, N
	fluvalinate (Mavrik)	12 hours	3A	G, L, N
	horticultural oil (various brands)	4 hours	---	Follow label
	imidacloprid (Marathon II, others)	12 hours	4A	Follow label
	Isaria fumosorosea (Preferal)	4 hours	UN	G,N
	novaluron (Pedestal)	12 hours	15	G, N
	pyrethrins (various)	12 hours	3A	G,L,N
	spinetoram + sulfoxaflor (XXpire)	12 hours	4C + 5	G, L, N
	spinosad (Conserve SC)	4 hours	4	G, N
	thiamethoxam (Flagship)	12 hours	4A	G,L,N
	tolfenpyrad (Hachi-Hachi)	12 hours	4A	G,N
Twig Borer	bifenthrin (Onyx, Talstar)	12 hours	3	Follow label
	cyclaniliprole + flonicamid (Pradia)	12 hours	28 + 29	G, N **Not for residential use**
Whitefly	abamectin (Avid)	12 hours	6	G, L, N
	acephate (Orthene)	12 hours	1A	G, L, N
	acetamiprid (TriStar)	12 hours	4A	G, L, N
	afidopyropen (Ventigra)	Follow label directions	9D	G, L, N
	azadirachtin (Azatin)	4 hours	18B	
	Beauveria bassiana (BotaniGard)	4 hours	---	G, L, N
	bifenthrin (Onyx, Talstar)	12 hours	3	Follow label
	buprofezin (Talus)	12 hours	16	G, N
	cyclaniliprole + flonicamid (Pradia)	12 hours	28 + 29	G, N **Not for residential use**
	cyfluthrin (Decathlon)	Follow label directions	3	G, N
	dinotefuran (Safari)	Follow label directions	4A	G, L, N
	fenazaquin (Magus)	12 hours	21A	G, L, N
	flonicamid (Aria)	12 hours	9C	G, L, N
	fluvalinate (Mavrik)	Follow label directions	3	G, L
	horticultural oil (various brands)	4 hours	---	G, L, N
	imidacloprid (Merit, Marathon, others)	12 hours	4A	Follow label
	insecticidal soap (various brands)	12 hours follow label directions	---	G, L, N
	Isaria fumosorosea (Preferal)	4 hours	UN	G,N
	neem oil (Triact)	4 hours	18B	G, L, N

Insect or Mite	Pesticide Common Name (Trade Name)	Minimum Hours Between Application and Reentry	IRAC Mode of Action Group	Permitted Application Sites G = greenhouse L = landscape N = nursery
Whitefly (cont.)	novaluron (Pedestal)	12 hours	15	G, N
	permethrin (Astro, others)	12 hours	3	Follow label
	pyridaben (Sanmite)	12 hours	21A	G, L, N
	pyriproxyfen (Distance) 11.2 EC	12 hours	7C	G, L, N
	spinetoram + sulfoxaflor (XXpire)	12 hours	4C + 5	G, L, N
	spirotetramat (Kontos)	24 hours foliar (see exception for drench application)	23	G, N
	thiamethoxam (Flagship)	12 hours	4A	G, N

INSECT CONTROL FOR ORNAMENTALS GROWN IN COMMERCIAL GREENHOUSES

Note: The following list of pesticides is labeled for the uses listed. However, there are different formulations of particular compounds, and you must make sure the pesticide used is properly labeled. All pesticides must be handled and applied in strict accordance with the label on the pesticide container. The plant being damaged and the site where the plant is located (greenhouse) must be listed on the label. The pests that a compound is registered for are also listed on the label. The pesticides below are listed by common name and by a formulation name, which is used as an example of the formulations available. Many insecticides are now off patent, and there are new trade names available for these active ingredients. There are also mixtures of active ingredients plus synergists available that are not listed. For example, there are several formulations of pyrethrum combined with other active ingredients and synergists available in spray concentrates, aerosols and space-release canisters for the control of several pests. Some chemicals are labeled for use in low-volume spray equipment. Proper rates must be determined by applying the proper amount of active ingredient for the area treated. The rates given below are for high-volume spray equipment. Many insects are developing resistance to pesticides available on the market. Practice resistance management and rotate the insecticides used to manage a pest. With most pesticides, you should rotate the compounds used at least once during a generation time for that insect. In addition, it is desirable to rotate mode of action of compounds used. A guide to rotating modes of action is the Insecticide Resistance Action Committee (IRAC) classification of the different mode of action sites and a letter for subgroups. In resistance management rotations, these number/letter codes can be used to determine which compounds have different modes of action. These are listed in the table under the column heading “Mode of Action Number” (un = unknown).

Some of the insecticides listed are extremely toxic. Handle with caution and use protective equipment required by the label. A minimum interval between application and reentry has been established. Make sure the proper reentry period for the insecticide has been observed before allowing people without label-prescribed personal protective equipment to enter the treated area. These are listed in the table under the column heading “REI.”

Phytotoxicity (damage to the plant as a result of the application of a chemical) is an important consideration in controlling pests of ornamentals. Phytotoxicity is generally expressed as damage to the leaves, flowers, or stems and is observed as “burn” (browning of tissue), “chlorosis” (yellowing or bleaching of tissue), or modification of growth by deformation or stunting. There are many species and cultivars of ornamental plants with varying sensitivity to chemicals. Other environmental conditions, such as your particular growing conditions, will also affect phytotoxicity. You are encouraged to evaluate a pesticide for phytotoxicity on a few plants under your particular conditions before treating all plants.

Pesticide labels for commercial and homeowner products that are currently registered for use in Arkansas may be found through the Arkansas Department of Agriculture/State Plant Board website by clicking on the following link: https://agriculture.arkansas.gov/crops-industry/pesticides/pesticide-registration/.

Insect or Mite	Insecticide and Formulation	Amount Per 100 Gallons of Water	REI	Mode of Action Number	Comments
Aphids	abamectin Avid 0.15EC	8 oz	12 hours	6	Apply as needed and repeat application at 7-day intervals or as necessary. DO NOT apply more than 16 fl oz per acre. Use in sufficient water to obtain uniform plant coverage. Phytotoxicity has been observed in certain species of ferns.
	acephate Orthene TT&O 75 WSP Pro 75 PT 1300 TT&O 97	 1/3-2/3 lb aerosol 8 oz	24 hours	1B	**Caution:** Phytotoxicity has occurred on the following plants: *Bletchum gibbum, Cissus antarctica, Fiscus triangularis, Fittonia verschaffeltil, Maranta leuconeura kerchoveana, Pachystachya lutea, Placetranthus australis, Polypodium aureus, Polystichum, Pteris ensiformis, Tolmiea menziesii.* Before treating large plantings, spray only a few plants and observe 2 weeks for varietal phytotoxicity.
	acetamiprid TriStar 70WSP TriStar 30SG	 1 soluble bag 1.3 oz	 24 hours 12 hours	4A	Apply as a full-coverage foliar spray. The use of a nonionic spreader-sticker adjuvant may improve control.
	afidopyropen Ventigra	Follow label	12 hours	9D	Follow label directions.
	azadirachtin Azatin 3.0% XL, Align-XL Ornazin 3%	 10-16 oz 8 oz	 4 hours 12 hours	18B	Must get full coverage for control but avoid excess runoff. Use fine spray; can also be applied as drench. Addition of 0.5%-1.0% nonphytotoxic oil will enhance efficacy.
	Beauveria bassiana Naturalis-L BotaniGard ES	 30-100 fl oz 0.5-3.0 qts	 4 hours 4 hours		Wait 48 hours before applying fungicides.
	bifenazate + abamectin Sirocco	6 fl oz	12 hours	un + 6	For suppression of pest populations, young immatures must be contacted by the spray.

Insect or Mite	Insecticide and Formulation	Amount Per 100 Gallons of Water	REI	Mode of Action Number	Comments
Aphids (cont.)	bifenthrin		12 hours	3A	Apply as a full-coverage foliar spray.
	Talstar T&O, Attain				
	10 WP	6-32 oz			
	7.9%	25-50 fl oz			
	0.67 F	8-40 oz			
	Attain	aerosol			
	chlorpyrifos		24 hours	1B	
	DuraGuard 20% ME	0.25-0.5 fl oz/gal			
	Chromobacterium subtsugae (Grandevo WDG)	Follow label	4 hours	UN	Follow label directions
	cyantraniliprole (Mainspring)	Follow label	4 hours	28	Follow label directions.
	cyfluthrin		12 hours	3A	Good coverage is necessary to provide most effective control. Addition of a spreader-sticker may enhance control of insects on some plants.
	Decathlon 2E	1-2 oz			
	20WP	1.9 oz			
	dinotefuran		12 hours	4A	For drench, apply 4 fl oz finished solution per 6-inch pot. See label for ebb and flood rates.
	Safari 20SG	1/4-1/2 lb for foliar 3/4-1 1/2 lb for drench			
	fenpropathrin		24 hours	3A	
	Tame 2.4EC	10 2/3 oz			
	flonicamid 50 WDG		12 hours	9C	Repeat application every 7-28 days as necessary.
	Aria 0.7 oz package	1-3 packets 0.7-2.1 oz			
	flupyradifurone		4 hours	4D	Don't apply more than 28 fl oz per year. Do not mix with group 3 fungicides.
	Altus	7.0-10.5 oz			
	fluvalinate		12 hours	3A	
	Mavrik 2E	2-5 oz			
	horticultural oils	1-2 gal	4 hours		Care must be taken because some plants are sensitive to oils. Thorough coverage is necessary, but do not overapply and get excessive runoff. Use fine spray.
	Sunspray ultrafine, Saf-T-Side, Triact				
	imidacloprid		12 hours	4A	Use 60WP as drench.
	Marathon 1G, 60WP	9-15 oz/1,000 sq ft			
	Marathon II	1.7 fl oz			
	insecticidal soap 1%-2%		12 hours		Repeat spray in 2 or 3 days. Thoroughly wet both surfaces of infested leaves. Use soft water when possible.
	M-Pede	1-2 gal			
	Olympic	1-2 gal			
	Isaria fumosorosea	14-28 oz		un	
	Preferal				
	lambda-cyhalothrin		24 hours	3A	
	Scimitar GC	1.5-5.0 oz			
	methiocarb		24 hours	1A	
	Mesurol 75W	0.5-1.0 lb			
	neem oil (various)	Follow label	4 hours	un	Follow label directions.
	permethrin (Astro, others)	Follow label	12 hours	3	Follow label directions.

INSECT CONTROL FOR ORNAMENTALS GROWN IN COMMERCIAL GREENHOUSES

Insect or Mite	Insecticide and Formulation	Amount Per 100 Gallons of Water	REI	Mode of Action Number	Comments
Aphids (cont.)	pymetrozine Endeavor 50WG	 2.5-5.0 oz	12 hours	9B	
	pyrethrum X-Clude, Pyrenone, Natural Plus	Follow label directions	12 hours	3A	Follow label directions.
	pyrifluquinazon (Rycar)	Follow label directions	12 hours	un	Follow label directions.
	pyriproxyfen (Distance, Fulcrum)	Follow label	12 hours	7C	Follow label directions.
	s-kinoprene Enstar II 5EC	 8-20 oz	4 hours	7A	Complete coverage of foliage is essential for control. Phytotoxicity has been observed under certain conditions.
	spinetoram + sulfoxaflor (XXpire)	Follow label directions	12 hours	4C + 5	Follow label directions.
	spirotetramat Kontos 2F	 1.7 fl oz	24 hours	23	See label for drench instructions.
	thiamethoxam Flagship 25WG Flagship 0.22G	 2-4 oz Follow label directions	12 hours	4A	Medium treatment may take 1-2 weeks for activity; do not leach for 7 days.
	tolfenpyrad (Hachi-Hachi)	Follow label directions	12 hours	21A	Follow label directions.
Armyworm	abamectin (Avid)	Follow label	12 hours	6	Follow label directions.
	acephate (Orthene)	Follow label	24 hours	1B	Follow label directions.
	acetamiprid TriStar 30SG	 2.7-5.3 oz	12 hours	4A	Apply as a full-coverage foliar spray. Use of a nonionic spreader-sticker adjuvant may improve control.
	azadirachtin Azatin 3.0% E Oranzin 3%	 10-16 oz 8 oz	 4 hours 12 hours	18B	Must get full coverage for control but avoid excess runoff. Use fine spray; can also be applied as drench. Spray when pests first appear.
	Bacillus thuringiensis Dipel, Thuricide,MVP, Sok-Bt, Biobit	1-4 qt	4 hours	11B2	
	Beauveria bassiana Naturalis-L	 30-100 fl oz	4 hours		Wait 48 hours before applying a fungicide.
	bifenthrin (Talstar)	Follow label directions	12 hours	3A	Apply as a full-coverage foliar spray.
	carbaryl Sevin SL	 1 qt.	12 hours	1A	Follow label directions.
	chlorpyrifos DuraGuard 20% ME	 0.25-0.5 fl oz/gal	24 hours	1B	
	Chromobacterium subtsugae (Grandevo WDG)	Follow label	4 hours	UN	Follow label directions.
	chlorfenapyr (Pylon)	2.6-6.4 fl oz	12 hours	13	
	cyantraniliprole (Mainspring)	Follow label directions	4 hours	28	Follow label directions.
	cyfluthrin (Decathlon)	Follow label directions	12 hours	3A	Follow label directions.
	diflubenzuron Adept 25W	 1/2-1 lb	12 hours	15	Apply on chrysanthemums when larvae appear and repeat at weekly intervals as required.

INSECT CONTROL FOR ORNAMENTALS GROWN IN COMMERCIAL GREENHOUSES

Insect or Mite	Insecticide and Formulation	Amount Per 100 Gallons of Water	REI	Mode of Action Number	Comments
Armyworm (cont.)	fenoxycarb (Preclude)	Follow label	12 hours	7B	Follow label directions.
	fluvalinate (Mavrik)	Follow label	12 hours	3A	Follow label directions.
	insecticidal Soap 1-2% M-pede Olympic	 1-2 gal. 1-2 gal.	12 hours		Repeat spray in 2 or 3 days. Thoroughly wet both surfaces of infested leaves. Use soft water when possible.
	fenpropathrin Tame 2.4EC	 10 oz	24 hours	3A	
	lambda-cyhalothrin Scimitar GC	 1.5-5 oz	24 hours	3A	
	methoxyfenozide (Intrepid)	Follow label	4 hours	18	Follow label directions.
	novaluron Pedestal 10% SC	 6-8 fl oz	12 hours	15	DO NOT apply more than once every 30 days or more than 2 applications per crop. DO NOT apply to poinsettias.
	permethrin (Astro, others)	Follow label	12 hours	3	Follow label directions.
	pyrethrins (various)	Follow label	12 hours	3A	Follow label directions.
	pyrethrum X-Clude, Pyrenone Natural Plus	Follow label directions	12 hours	3A	Follow label directions.
	pyridalyl Overture 35WP	 8 oz	12 hours	un	2 oz soluble packets; do not get wet.
	spinetoram + sulfoxaflor (XXpire)	Follow label directions	12 hours	4C + 5	Follow label directions.
	spinosad (Conserve)	Follow label directions	4 hours	5	Follow label directions.
	tebufenozide Confirm T/O	 4-8 fl oz	4 hours	18A	For best results, begin applications when larvae are first observed or at first sign of feeding.
	tolfenpyrad (Hachi-Hachi)	Follow label directions	12 hours	21A	Follow label directions.
Broad Mite and Cyclamen Mite	abamectin Avid 0.15EC	 4 oz	12 hours	6	Apply as needed and repeat as necessary.
	bifenazate + abamectin Sirocco	3-4 fl oz	12 hours	un + 6	Begin applications as soon as mites appear. One additional application can be made after 7 days or as necessary to maintain control. DO NOT make more than two (2) applications per crop per year.
	bifenthrin (Talstar)	Follow label	12 hours	3A	Follow label directions.
	chlorfenapyr (Pylon)	2.6-5.2 fl oz	12 hours	13	
	fenoxycarb (Preclude)	Follow label	12 hours	7B	Follow label directions.
	fenpyroximate (Akari)	24 fl oz	12 hours	21A	
	pyridaben Sanmite 75WP	 2-4 oz	12 hours	21A	
	spiromesifen (Judo)	1-4 fl oz	12 hours	23	
	sulfur (elemental sulfur)	Follow label directions	12 hours		DO NOT tank mix with oils.

INSECT CONTROL FOR ORNAMENTALS GROWN IN COMMERCIAL GREENHOUSES

Insect or Mite	Insecticide and Formulation	Amount Per 100 Gallons of Water	REI	Mode of Action Number	Comments
Cabbage Looper	abamectin (Avid)	Follow label	12 hours	6	Follow label directions.
	acephate (Orthene)	Follow label	24 hours	1B	Follow label directions.
	acetamiprid TriStar 30SG	2.7-5.3 oz	12 hours	4A	Apply as a full-coverage foliar spray. Use of a non-ionic spreader-sticker adjuvant may improve control.
	azadirachtin Azatin Ornazin 3%	10-16 oz 8 oz	4 hours 12 hours	18B	Must get full coverage for control but avoid excess runoff. Use fine spray; can also be applied as drench. Spray when pests first appear.
	Bacillus thuringiensis Dipel, Thuricide, MVP, Sok-Bt, Biobit	1-4 qt	4 hours	11B2	Follow manufacturer's suggestions.
	Beauveria bassiana Naturalis-L	30-100 fl. oz	4 hours		Wait 48 hours before applying a fungicide.
	bifenthrin (Talstar)	Follow label directions	12 hours	3A	Apply as a full-coverage foliar spray.
	carbaryl Sevin SL	1 qt.	12 hours	1A	Follow label directions.
	chlorfenapyr (Pylon)	2.6-6.4 fl oz	12 hours	13	
	chlorpyrifos DuraGuard 20% ME	0.25-0.5 fl. oz/gal.	24 hours	1B	
	Chromobacterium subtsugae (Grandevo WDG)	Follow label	4 hours	UN	Follow label directions.
	cyantraniliprole (Mainspring)	Follow label	4 hours	28	Follow label directions.
	cyfluthrin (Decathlon)	Follow label directions	12 hours	3A	Follow label directions.
	diflubenzuron Adept 25W	½-1 lb.	12 hours	15	Apply on chrysanthemums when larvae appear and repeat as weekly intervals as required.
	fenoxycarb (Preclude)	Follow label	12 hours	7B	Follow label directions.
	fenpropathrin Tame 2.4EC	10 oz	24 hours	3A	
	fluvalinate (Mavrik)	Follow label directions	12 hours	3A	Follow label directions.
	insecticidal soap (1%-2%) M-Pede Olympic	1-2 gal 1-2 gal	12 hours		Repeat spray weekly for 2 or 3 weeks. Thoroughly wet both surfaces of infested leaves. Use soft water when possible.
	lambda-cyhalothrin Scimitar GC	1.5-5 oz	24 hours	3A	
	methoxyfenozide (Intrepid)	Follow label	4 hours	18	Follow label directions.
	novaluron (Pedestal)	Follow label directions	12 hours	15	Follow label directions.
	permethrin (Astro, others)	Follow label	12 hours	3	Follow label directions.
	pyrethrins (various)	Follow label	12 hours	3A	Follow label directions.
	pyrethrum X-Clude Pyrenone	aerosol 2-12 oz/acre	12 hours	3A	Follow label directions.
	pyridalyl Overture 35WP	8 oz	12 hours	un	2 oz soluble packets; do not get wet.
	spinetoram + sulfoxaflor (XXpire)	Follow label directions	12 hours	4C + 5	Follow label directions.

Insect or Mite	Insecticide and Formulation	Amount Per 100 Gallons of Water	REI	Mode of Action Number	Comments
Cabbage Looper (cont.)	spinosad Conserve SC	 6 fl oz	4 hours	5	
	tebufenozide Confirm T/O	 4-8 fl oz	4 hours	18A	For best results, begin applications when larvae are first observed or at first sign of feeding.
	tolfenpyrad (Hachi-Hachi)	Follow label directions	12 hours	21A	Follow label directions.
Cutworm	abamectin (Avid)	Follow label	12 hours	6	Follow label directions.
	acephate (Orthene)	Follow label	24 hours	1B	Follow label directions.
	acetamiprid TriStar 30SG	 2.7-5.3 oz	12 hours	4A	Apply as a full coverage foliar spray the use of a non-ionic spreader-sticker adjuvant may improve control.
	azadirachtin Azatin Ornazin 3%	 10-16 oz 8 oz	 4 hours 12 hours	18B	Must get full coverage for control but avoid excess runoff. Use fine spray; can also be applied as drench. Spray when pests first appear.
	Bacillus thuringiensis Dipel, Thuricide, MVP, Sok-Bt, Biobit	1-4 qt	4 hours	11B2	Follow manufacturer's suggestions.
	Beauveria bassiana Naturalis-L	30-100 fl. oz	4 hours		Wait 48 hours before applying a fungicide.
	bifenthrin (Talstar)	Follow label	12 hours	3	Apply as a full coverage foliar spray.
	carbaryl Sevin SL	 1 qt	12 hours	1A	Follow label directions.
	chlorfenapyr Pylon	 2.6-6.4 fl. oz	12 hours	13	
	chlorpyrifos DuraGuard 20% ME	 0.25-0.5 fl. oz/gal.	24 hours	1B	
	Chromobacterium subtsugae (Grandevo WDG)	Follow label	4 hours	UN	Follow label directions.
	cyantraniliprole (Mainspring)	Follow label directions	4 hours	28	Follow label directions.
	cyfluthrin Decathlon 2EC 20WP	 1-2 oz 1.3 oz	12 hours	3A	Good coverage is necessary to provide most effective control. Addition of a spreader/sticker may enhance control of insects on some plants.
	diflubenzuron Adept 25W	 ½-1 lb.	12 hours	15	Apply on chrysanthemums when larvae appear and repeat as weekly intervals as required.
	fenoxycarb (Preclude)	Follow label	12 hours	7B	Follow label directions.
	fluvalinate (Mavrik)	Follow label	12 hours	3A	Follow label directions.
	insecticidal Soap 1-2% M-pede Olympic	 1-2 gal. 1-2 gal.	12 hours		Repeat spray in 2 or 3 days. Thoroughly wet both surfaces of infested leaves. Use soft water when possible.

Insect or Mite	Insecticide and Formulation	Amount Per 100 Gallons of Water	REI	Mode of Action Number	Comments
Cutworm (cont.)	fenpropathrin Tame 2.4EC	10 oz	24 hours	3A	
	lambda-cyhalothrin Scimitar GC	1.5-5.0 oz	24 hours	3A	
	methoxyfenozide (Intrepid)	Follow label	4 hours	18	Follow label directions.
	novaluron (Pedestal)	Follow label	12 hours	15	Follow label directions.
	permethrin (Astro, others)	Follow label	12 hours	3	Follow label directions.
	pyrethrins (various)	Follow label	12 hours	3A	Follow label directions.
	pyrethrum X-Clude Pyrenone	Aerosol 2-12 oz/acre	12 hours	3A	Follow label directions.
	pyridalyl Overture 35WP	8 oz	12 hours	un	2 oz Soluble packets, do not get wet.
	spinosad Conserve SC	6 fl oz	4 hours	5	
	spinetoram + sulfoxaflor (XXpire)	Follow label directions	12 hours	4C + 5	Follow label directions.
	tebufenozide Confirm T/O	4-8 fl oz	4 hours	18A	For best results, begin applications when larvae are first observed or at first sign of feeding.
	tolfenpyrad (Hachi-Hachi)	Follow label directions	12 hours	21A	Follow label directions.
Fungus Gnat	acetamiprid TriStar 30SG	2.7-5.3 oz	12 hours	4A	Apply as a directed spray to thoroughly wet the upper 1/2 to 1 inch of soil medium.
	azadirachtin Azatin 3.0% E	8 oz	4 hours	18B	
	Bacillus thuringiensis var. israelensis Gnatrol	Follow label directions	4 hours	11B2	Apply as a soil drench or spray for larvae. Thoroughly wet the first 3 cm (1 3/16 inches) to 4 cm (1 34/67 inches) of soil. Under benches should also be treated.
	chlorfenapyr (Pylon)	5.2-10 fl oz	12 hours	13	
	chlorpurifos DuraGuard 20% ME	0.25-0.5 oz/gal	24 hours	1B	Shake concentrate well before diluting.
	cyromazine Citation 75WP	Follow label directions	12 hours	17	
	diflubenzuron Adept 25W	Follow label directions	12 hours	15	DO NOT use on poinsettias, Rieger begonias or hibiscus.
	dinotefuran Safari 20SG	3/4-1 1/2 lb	12 hours	4A	Drench applying 4 fl oz finished solution per 6-inch pot. See label for ebb and flood rates.
	pyriproxyfen (Distance)	2-6 fl oz (see comments)	12 hours	7C	New supplemental label changes rates to a 2 oz drench and 3-6 oz drench.
	s-kinoprene Enstar II	1 oz/5 gal	4 hours	7A	Drench by submersion in solution until no more air bubbles escape.

Insect or Mite	Insecticide and Formulation	Amount Per 100 Gallons of Water	REI	Mode of Action Number	Comments
Fungus Gnat (cont.)	*Steinernema feltiae* Entonem, NemaShield Nemasys, ScanMask	Follow label directions	4 hours		Apply when small larvae first appear. Moisture and temperature are critical.
	thiamethoxam Flagship 25WG	4-8.5 oz	12 hours	4A	Reapply as needed but no sooner than every 7 days. DO NOT exceed 17 oz/acre per crop or year.
Leafminer	abamectin Avid 0.15EC	8 oz	12 hours	6	Apply as needed and repeat application at 7-day intervals or as necessary. DO NOT apply more than 16 fl oz or less than 8 fl oz per acre. Use in sufficient water to obtain uniform plant coverage. Phytotoxicity has been observed on certain species of ferns.
	acephate (Orthene)	Follow label directions	24 hours	1B	May be used in greenhouse, landscape and nursery applications.
	acetamiprid TriStar 30SG	6.7-8.0 oz	12 hours	4A	Rotate with other insecticides. Apply as a full-coverage foliar spray. The use of a nonionic spreader-sticker adjuvant may improve control.
	afidopyropen Ventigra	Follow label	12 hours	9D	Follow label directions.
	azadirachtin Azatin 3.0% E Ornazin 3%	10-16 oz 10 oz	4 hours 12 hours	18B	Must get full coverage for control but avoid excess runoff. Use fine spray; can also be applied as drench. Spray early. Make 2 applications in rotation with adulticides such as pyrethroids.
	bifenazate + abamectin Sirocco	6 fl oz	12 hours	un + 6	For control of mining larvae, apply when adults are beginning to lay eggs on the new foliage.
	chlorpyrifos DuraGuard 20% ME	0.25-0.5 fl oz/gal	24 hours	1B	Shake concentrate well before diluting.
	cyromazine Citation 75WP	2.66 oz/acre	12 hours	17	Labeled only for chrysanthemums. Apply to wet in minimum of 100 gallons of water when stippling first appears. Harvesters must wear long-sleeved shirts, long pants, and rubber gloves when harvesting.
	dinotefuran Safari 20SG	1/4-1/2 lb for foliar 3/4-1 1/2 lb for drench	12 hours	4A	For drench, apply 4 fl oz finished solution per 6-inch pot. See label for ebb and flood rates.
	fenoxvcarb (Preclude)	Follow label	12 hours	7B	Follow label directions.
	imidacloprid (Marathon II, others)	Follow label directions	12 hours	4A	Follow label directions.
	lambda-cyhalothrin Scimitar GC	1.5-5.0 oz	24 hours	3A	Use for adults only.
	novaluron Pedestal 10% SC	6-8 fl oz	12 hours	15	DO NOT apply more than once every 30 days or more than 2 applications per crop. DO NOT apply to poinsettias.
	permethrin Pounce 3.2EC	20 fl oz	24 hours	3A	Registered for use on chrysanthemums.
	spinosad Conserve SC	22 fl oz	4 hours	5	
	thiamethoxam Flagship 24WG	4-8.5 oz	12 hours	4A	Reapply as needed but no sooner than every 7 days. DO NOT exceed 17 oz/acre per crop or year.

Insect or Mite	Insecticide and Formulation	Amount Per 100 Gallons of Water	REI	Mode of Action Number	Comments
Leafroller	acephate Orthene TT&O 75SP TT&O 97	 2/3 lb 8-12 oz	24 hours	1B	
	cyantraniliprole (Mainspring)	Follow label directions	4 hours	28	Follow label directions.
	cyfluthrin Decathlon 2EC 20WP	 1-2 oz 1.9 oz	12 hours	3A	Good coverage is necessary to provide most effective control. Addition of a spreader/sticker may enhance control of insects on some plants.
	pyrethrum X-Clude Pyrenone Natural Plus	 aerosol 2-12 oz/acre	12 hours	3A	Follow label directions.
	spinetoram + sulfoxaflor (XXpire)	Follow label directions	12 hours	4C + 5	Follow label directions.
Mealybug	acephate Orthene TT&O 75SP TT&O 97	 2/3 lb 8-12 oz	24 hours	1B	See **Aphid**.
	acetamiprid TriStar 70WSP TriStar 30SG	 2-4 soluble bags 2.7 oz	 24 hours 12 hours	4A	Tank mix with surfactant or pyrethroid may improve control of adults. Apply as a full-coverage foliar spray. Use of a nonionic spreader-sticker adjuvant may improve control.
	afidopyropen Ventigra	Follow label directions	12 hours	9D	Follow label directions.
	azadirachtin Azatin 3% Ornazin 3%	 10-16 oz 8 oz	 4 hours 12 hours	18B	Must get full coverage for control, but avoid excess runoff. Use fine spray; can also be applied as drench. Addition of 0.5%-1.0% nonphytotoxic oil will enhance efficacy.
	Beauveria bassiana Naturalis-L	 30-100 fl oz	 4 hours		Wait 48 hours before applying fungicides.
	bifenthrin Talstar T&O, Attain 10 WP 7.9% 0.67 F Attain	 8-40 oz 25-50 fl oz 8-40 oz aerosol	12 hours	3A	Apply as a full-coverage foliar spray.
	buprofezin (Talus)	Follow label directions	12 hours	16	Apply no more than 2 applications per growing cycle.
	chlorpyrifos DuraGuard 20% ME	 0.25-0.5 fl oz/gal	24 hours	1B	
	cyfluthrin Decathlon 2EC	 1-2 oz	12 hours	3A	Good coverage is necessary to provide most effective control. Addition of a spreader/sticker may enhance control of insects on some plants.
	dinotefuran Safari 20SG	1/4-1/2 lb for foliar 3/4-1 1/2 lb for drench	12 hours	4A	For drench, apply 4 fl oz finished solution per 6-inch pot. See label for ebb and flood rates.
	fenoxycarb (Preclude)	Follow label	12 hours	7B	Follow label directions.

Insect or Mite	Insecticide and Formulation	Amount Per 100 Gallons of Water	REI	Mode of Action Number	Comments
Mealybug (cont.)	fenpropathrin Tame 2.4EC	 10 oz	24 hours	3A	
	flonicamid 50 WDG Aria 0.7 oz package	 3-6 packets (2.1-4.3 oz)	12 hours	9C	Repeat application every 7-28 days as necessary.
	fluvalinate Mavrik 2EC	 2-5 oz	12 hours	3A	
	flupyradifurone Altus	 10.5-14.0 oz	4 hours	4D	Don't apply more than 28 fl oz per year. Do not mix with group 3 fungicides.
	horticultural oils 1%-2% Sunspray ultrafine Saf-T-Side	 1-2 gal 1-2 gal	4 hours		Care must be taken because some plants are sensitive to oils. Thorough coverage is necessary, but do not overapply and get excessive runoff. Use fine spray.
	imidacloprid Marathon 1G Marathon II	 9-15 oz/1,000 sq ft 1.7 fl oz	12 hours	4A	
	insecticidal soap 1%-2% M-Pede Olympic	 1-2 gal 1-2 gal	12 hours		Repeat spray after 2 or 3 days. Thoroughly wet both surfaces of infested leaves. Use soft water whenever possible.
	Isaria fumosorosea Preferal	14-28 oz		un	
	methiocarb Mesurol 75 WP	 0.5-1 lb	24 hours	1A	
	neem oil (various)	Follow label directions	4 hours	un	Follow label directions.
	pyrifluquinazon (Rycar)	Follow label directions	12 hours	un	Follow label directions.
	s-kinoprene Enstar II 5EC	 6-20 oz	4 hours	7A	See **Aphid**. Registered for root mealybug.
	spinetoram + sulfoxaflor (XXpire)	Follow label directions	12 hours	4C + 5	Follow label directions.
	spirotetramat Kontos 2F	 1.7 fl oz	24 hours	23	See label for drench instructions.
	thiamethoxam Flagship 25WG Flagship 0.22G	 4-8.5 oz Follow label directions	12 hours	4A	Medium treatment may take 1-2 weeks for activity; do not leach for 7 days.
Scale (Armored) Check label to be sure it lists scale to be treated.	acephate (Orthene)	Follow label directions	24 hours	1B	Follow label directions.
	acetamiprid (TriStar)	Follow label directions	12 hours	4A	Follow label directions.
	afidopyropen (Ventigra)	Follow label directions	12 hours	9D	Follow label directions. For control of nymphs and crawlers only.
	azadirachtin Azatin 3% Ornazin 3%	 10-16 oz 8 oz	 4 hours 12 hours	18B	Must get full coverage for control but avoid excess runoff. Use fine spray; can also be applied as drench. Addition of 0.5-1.0% non-phytotoxic oil will enhance efficacy.
	bifenthrin (Talstar)	Follow label directions	12 hours	3	Follow label directions.

Insect or Mite	Insecticide and Formulation	Amount Per 100 Gallons of Water	REI	Mode of Action Number	Comments
Scale (Armored) (cont.)	buprofezin (Talus)	Follow label directions	12 hours	16	Follow label directions.
	cyantraniliprole (Mainspring)	Follow label	4 hours	28	For greenhouse application.
	dinotefuran (Safari)	Follow label directions	12 hours	4A	Follow label directions.
	fenoxycarb (Preclude)	Follow label	12 hours	7B	Follow label directions.
	flonicamid 50 WDG Aria 0.7 oz package	3-4 packets (2.1-2.9 oz)	12 hours	9C	Repeat application every 7-28 days as necessary.
	horticultural oil (various)	Follow label directions	4 hours		Follow label directions.
	imidacloprid (Marathon II, others)	Follow label	12 hours	4A	Follow label directions
	kinoprene (Enstar II)	Follow label directions	4 hours	7A	Follow label directions.
	neem oil (Various)	Follow label	4 hours	UN	Follow label directions.
	pyriproxyfen (Distance)	Follow label	12 hours	7C	Follow label directions.
	spirotetramat Kontos 2F	1.7 fl oz.	24 hours	23	See label for drench instructions.
	thiamethoxam (Flagship)	Follow label directions	12 hours	4A	Follow label directions.
	tolfenpyrad (Hachi-Hachi)	Follow label	12 hours	21A	Follow label directions.
Scale (Soft) Check label to be sure it lists scale to be treated.	acephate (Orthene)	Follow label directions	24 hours	1B	Follow label directions.
	acetamiprid (TriStar)	Follow label directions	12 hours	4A	Follow label directions.
	afidopyropen (Ventigra)	Follow label directions	12 hours	9D	Follow label directions. For control of nymphs and crawlers only.
	bifenthrin (Talstar)	Follow label directions	12 hours	3	Follow label directions.
	buprofezin (Talus)	Follow label directions	12 hours	16	Follow label directions.
	cyantraniliprole (Mainspring)	Follow label directions	4 hours	28	For greenhouse application.
	dinotefuran (Safari)	Follow label directions	12 hours	4A	Follow label directions.
	horticultural oil (various)	Follow label directions	4 hours		Follow label directions.
	imidacloprid (Marathon II, others)	Follow label directions	12 hours	4A	Follow label directions.
	kinoprene (Enstar II)	Follow label directions	4 hours	7A	Follow label directions.
	neem oil (various)	Follow label directions	4 hours	un	Follow label directions.
	pyriproxyfen (Distance)	Follow label directions	12 hours	7C	Follow label directions.
	thiamethoxam (Flagship)	Follow label directions	12 hours	4A	Follow label directions.

Insect or Mite	Insecticide and Formulation	Amount Per 100 Gallons of Water	REI	Mode of Action Number	Comments
Slugs and Snails	iron phosphate bait	Follow label	Follow label	UN	Follow label directions.
	metaldehyde Deadline B 15D	Follow label directions	24 hours		
	methiocarb Mesurol 75 WP	1/2-1 lb	24 hours	1A	Spray plants and foliage until wet. DO NOT use in conjunction with foliar fertilizer.
Spider Mite	abamectin Avid 0.15EC	4 oz	12 hours	6	Apply as needed and repeat as necessary.
	acephate (Orthene)	Follow label	24 hours	1B	Follow label directions.
	acequinocyl Shuttle 15 SC	6.4-12.8 fl oz	12 hours	20B	DO NOT apply through any type irrigation. Wetting agent can be used.
	azadirachtin Azatin 3% Ornazin 3%	10-16 oz 8 oz	4 hours 12 hours	18B	Must get full coverage for control but avoid excess runoff. Use fine spray; can also be applied as drench. Addition of 0.5-1.0% non-phytotoxic oil will enhance efficacy.
	Beauveria bassiana Naturalis-L	30-100 fl. oz	4 hours		Wait 48 hours before applying a fungicide.
	bifenazate (Floramite)	2-4 oz	12 hours	un	DO NOT apply in successive applications. Use at least two alternative products between Floramite treatments.
	bifenazate + abamectin Sirocco	3-4 fl oz	12 hours	un + 6	Begin applications as soon as mites appear. One additional application can be made after 7 days or as necessary to maintain control. DO NOT make more than two (2) applications per crop per year.
	bifenthrin Talstar T&O or Attain 10WP 7.9% Attain	 6-32 oz 25-50 fl oz aerosol	12 hours	3A	Apply as a full-coverage foliar spray.
	chlorfenapyr (Pylon)	2.6-5.2 fl oz	12 hours	13	
	chlorpyrifos DuraGuard 20% ME	0.25-0.5 fl oz/gal	24 hours	1B	
	clofentezine (Ovation)	2 oz	12 hours	10A	Limited number of plants (see label).
	cyflumetofen (Sultan)	13.7 fl oz	12 hours	25	DO NOT exceed the maximum seasonal use rate of 27.4 fl oz of Sultan per crop growing cycle. DO NOT make more than 2 applications of Sultan per crop growing cycle.
	Chromobacterium subtsugae (Grandevo WDG)	Follow label	4 hours	UN	Follow label directions.
	etoxazole TetraSan 5WDG	8-16 oz	12 hours	10B	Limit to 2 applications per crop cycle.
	fenazaquin (Magus)	12-24 oz	12 hours	21	
	fenbutatin-oxide Vendex 50WP	8-16 oz	48 hours	12B	DO NOT add oil to spray solution.

Insect or Mite	Insecticide and Formulation	Amount Per 100 Gallons of Water	REI	Mode of Action Number	Comments
Spider Mite (cont.)	fenoxycarb (Preclude)	Follow label	12 hours	7B	Follow label directions.
	fenpropathrin Tame 2.4EC	8-16 oz	24 hours	3A	
	fenpyroximate Akari 5 SC	16-24 fl oz	12 hours	21A	
	fluvalinate Mavrik 2E	2-5 oz	12 hours	3A	
	hexythiazox Hexygon DF	1-2 oz	12 hours	10A	
	horticultural oil Sunspray ultrafine Saf-T-Side Triact	 1-2 gal 1-2 gal 1-2 gal	4 hours		
	insecticidal soap (1%-2%) M-Pede Olympic	 1-2 gal 1-2 gal	12 hours		Repeat spray weekly for 2 or 3 weeks. Thoroughly wet both surfaces of infested leaves. Use soft water when possible.
	lambda-cyhalothrin Scimitar GC	1.5-5 oz	24 hours	3A	
	methiocarb Mesurol 75W	1/2-1 lb	24 hours	1A	
	pyridaben Sanmite 75WP	2-4 oz	12 hours	21A	
	spinosad Conserve SC	22 fl oz	4 hours	5	
	spiromesifen Judo 4 F, Savate	1-4 oz	12 hours	23	Effective on nymphal and egg stages.
	spirotetramat Kontos 2F	1.7 fl oz	24 hours	23	See label for drench instructions.
Thrips	abamectin Avid 0.15 EC	8 oz	12 hours	6	Apply as needed and repeat application at 7-day intervals or as necessary. DO NOT apply more than 16 fl oz or less than 8 fl oz per acre. Use in sufficient water to obtain uniform plant coverage. Phytotoxicity has been observed in certain species of ferns.
	acephate Orthene TT&O 75SP TT&O 97	 2/3 lbs. 8 oz	24 hours	1B	Aerosol may also be used as for aphid control.
	acetamiprid TriStar 30SG	4-8 oz	12 hours	4A	Apply as a full coverage foliar spray the use of a non-ionic spreader-sticker adjuvant may improve control.
	azadirachtin Azatin 3% E Ornazin 3%	 12-16 oz 8 oz	 4 hours 12 hours	18B	Must get full coverage for control, but avoid excess runoff. Use fine spray; can also be applied as drench. Addition of 0.5% to 1.0% nonphytotoxic oil will enhance efficacy.

Insect or Mite	Insecticide and Formulation	Amount Per 100 Gallons of Water	REI	Mode of Action Number	Comments
Thrips (cont.)	*Beauveria bassiana*				
	Naturalis-L	30-100 fl oz	4 hours		
	BotaniGard ES	0.5-3.0 fl oz	4 hours		
	bifenazate + abamectin	6 fl oz	12 hours	un + 6	For suppression of pest populations, young immatures must be contacted by the spray.
	Sirocco				
	bifenthrin (Talstar)	Follow label directions	12 hours		Follow label directions.
	chlorfenapyr (Pylon)	10-20 fl oz	12 hours	13	
	chlorpyrifos		24 hours	1B	
	DuraGuard 20% ME	0.25-0.5 fl oz/gal			
	Chromobacterium subtsugae (Grandevo WDG)	Follow label	4 hours	UN	Follow label directions.
	cyantraniliprole (Mainspring)	Follow label directions	4 hours	28	For greenhouse application.
	cyfluthrin		12 hours	3A	Good coverage is necessary to provide most effective control. Addition of a spreader/sticker may enhance control of insects on some plants.
	Decathlon 2EC	1-2 oz			
	20WP	1.9 oz			
	dinotefuran		12 hours	4A	Suppression only. For drench, apply 4 fl oz finished solution per 6-inch pot. See label for ebb and flood rates.
	Safari 20SG	4-8 oz for foliar 12-24 oz for drench			
	flonicamid 50 WDG		12 hours	9C	Repeat application every 7-28 days as necessary.
	Aria 0.7 oz package	3-4 packets (2.1-2.9 oz)			
	fluvalinate		12 hours	3A	
	Mavrik 2E	2-5 oz			
	horticultural oil (various)	Follow label directions	4 hours		Follow label directions.
	imidacloprid		12 hours	4A	Use 60WP as drench.
	Marathon 1G	9-15 oz/1,000 sq ft			
	60WP				
	insecticidal soap 1%-2%		12 hours		Repeat spray weekly for 2 or 3 weeks. Thoroughly wet both surfaces of infested leaves. Use soft water whenever possible.
	M-Pede	1-2 gal			
	Olympic	1-2 gal			
	Isaria fumorosea	4-12 oz		UN	
	Preferal				
	lambda-cyhalothrin		24 hours	3A	
	Scimitar GC	1.5-5 oz			
	methiocarb		24 hours	1A	
	Mesurol 75W	0.5-1 lb			
	novaluron		12 hours	15	DO NOT apply more than once every 30 days or more than 2 applications per crop. DO NOT apply to poinsettias.
	Pedestal 10% SC	6-8 fl oz			

Insect or Mite	Insecticide and Formulation	Amount Per 100 Gallons of Water	REI	Mode of Action Number	Comments
Thrips (cont.)	pyrethrum		12 hours	3A	Follow label directions.
	X-Clude, Natural Plus	aerosol			
	Pyrenone	2-12 oz/acre			
	pyridalyl		12 hours	UN	2 oz soluble packets; DO NOT get wet.
	Overture 35WP	8 oz			
	s-kinoprene (Enstar II)	Follow label directions	4 hours	7A	For greenhouse application.
	spinetoram + sulfoxaflor (XXpire)	Follow label directions	12 hours	4C + 5	Follow label directions.
	spinosad		4 hours	5	
	Conserve SC	6 fl oz			
	thiamethoxam		12 hours	4A	For leaf-feeding thrips.
	Flagship 25WG	4-8.5 oz			
	tolfenpyrad (Hachi-Hachi)	Follow label directions	12 hours	21A	Follow label directions.
Whitefly	abamectin		12 hours	6	For suppression of pests, young must be contacted by spray.
	Avid 0.15EC	8 fl oz			
	acephate		24 hours	1B	
	Orthene TT&O 75SP	2/3 lb			
	PT 1300	aerosol			
	TT&O 97	8 oz			
	acetamiprid			4A	Tank mix with surfactant or pyrethroid may improve control of adults. Apply as a full-coverage foliar spray. Use of a nonionic spreader-sticker adjuvant may improve control.
	TriStar 70WSP	2-4 soluble bags	24 hours		
	TriStar 30SG	2.7-5.3 oz	12 hours		
	afidopyropen	Follow label directions	12 hours	9D	Follow label directions.
	Ventigra				
	azadirachtin			18B	Must get full coverage for control, but avoid excess runoff. Use fine spray; can also be applied as drench. Ensure good coverage to top and bottom of leaves.
	Azatin 3.0% E	10-16 oz	4 hours		
	Ornazin 3%	10 oz	12 hours		
	Beauveria bassiana				
	Naturalis-L	30-100 fl oz	4 hours		
	BotaniGard ES	0.5-3.0 qts	4 hours		
	bifenazate + abamectin	6 fl oz	12 hours	un + 6	For suppression of pest populations, young immatures must be contacted by the spray.
	Sirocco				
	bifenthrin		12 hours	3A	Apply as a full-coverage foliar spray.
	Talstar T&O or Attain				
	10WP	6-32 oz			
	7.9%	25-50 fl oz			
	Attain	aerosol			
	buprofezin (Talus)	Follow label directions	12 hours	16	Apply no more than 2 applications per growing cycle.
	chlorpyrifos		24 hours	1B	
	DuraGuard 20% ME	0.25-0.5 fl oz/gal			

Insect or Mite	Insecticide and Formulation	Amount Per 100 Gallons of Water	REI	Mode of Action Number	Comments
Whitefly (cont.)	cyantraniliprole (Mainspring)	Follow label directions	4 hours	28	For greenhouse application.
	cyfluthrin Decathlon 2E	 1-2 oz	12 hours	3A	Good coverage is necessary to provide most effective control. Addition of a spreader/sticker may enhance control of insects on some plants.
	cyfluthrin + imidacloprid Discus	 25 fl oz	12 hours	3 + 4A	
	diflubenzuron Adept	 4-8 fl oz	12 hours	15	For optimum suppression of whiteflies, spray applications should thoroughly wet the leaf undersides. Begin applications at first sign of insects and repeat applications at 7-day intervals as needed to provide suppression on new foliage growth.
	dinotefuran Safari 20SG	 1/4-1/2 lb for foliar 3/4-1 1/2 lb for drench	12 hours	4A	
	fenazaquin (Magus)	Follow label directions	12 hours	21A	
	fenoxycarb (Preclude)	Follow label	12 hours	7B	Follow label directions.
	fenpropathrin Tame 2.4EC	 5 1/3-10 2/3 oz	24 hours	3A	
	flonicamid 50 WDG Aria 0.7 oz package	 4-6 packets (2.9-4.3 oz)	12 hours	9C	Repeat application every 7-28 days as necessary.
	flupyradifurone Altus	 10.5-14.0 oz	4 hours	4D	Don't apply more than 28 fl oz per year. Do not mix with group 3 fungicides.
	fluvalinate Mavrik 2E	 2-5 oz	12 hours	3A	
	horticultural oils 1%-2% Sunspray ultrafine Saf-T-Side Triact 70	 1-2 gal 1-2 gal 1-2 gal	4 hours		Care must be taken because some plants are sensitive to oils. Thorough coverage is necessary, but do not overapply and get excessive runoff. Use fine spray.
	imidacloprid Marathon 1G 60WP Marathon II	 9-15 oz/1,000 sq ft 1.7 fl oz	12 hours	4A	Use 60WP as drench.
	insecticidal soap 1%-2% M-Pede Olympic	 1-2 gal 1-2 gal	12 hours		Thoroughly wet both surfaces of infested leaves. Use soft water whenever possible.
	Isaria fumosorosea Preferal	14-28 oz		un	
	lambda-cyhalothrin Scimitar GC	 1.5-5 oz	24 hours	3A	

Insect or Mite	Insecticide and Formulation	Amount Per 100 Gallons of Water	REI	Mode of Action Number	Comments
Whitefly (cont.)	novaluron Pedestal 10% SC	 6-8 fl oz	12 hours	15	DO NOT apply more than once every 30 days or more than 2 applications per crop. DO NOT apply to poinsettias.
	pymetrozine Endeavor 50WG	 2.5-5 oz	12 hours	9B	
	pyridaben Sanmite 75WP	 2-4 oz	12 hours	21A	
	pyrifluquinazon (Rycar)	Follow label directions	12 hours	un	Follow label directions.
	pyriproxyfen (Distance)	6-8 fl oz	12 hours	7C	Target crawlers. Apply no more than 2 times per crop cycle. DO NOT apply to poinsettias.
	pyrethrum X-Clude, Natural Plus Pyrenone	 aerosol 2-12 oz/acre	12 hours	3A	Follow label directions.
	s-kinoprene Enstar 5EC	 6-20 oz	4 hours	7A	See **Aphid**.
	spinetoram + sulfoxaflor (XXpire)	Follow label directions	12 hours	4C + 5	Follow label directions.
	spiromesifen (Judo 4 F)	1-4 oz	12 hours	23	Effective on nymphal and egg stages.
	spirotetramat (Kontos 2F)	1.7 fl oz	24 hours	23	See label for drench instructions.
	thiamethoxam Flagship 25WG Flagship 0.22G	 4-8.5 oz Follow label	12 hours	4A	Medium treatment may take 1-2 weeks for activity; do not leach for 7 days.
	tolfenpyrad (Hachi-Hachi)	Follow label directions	12 hours	21A	Follow label directions.

INSECT CONTROL FOR ORNAMENTALS GROWN IN INTERIOR PLANTSCAPES

Note: People without proper application protective clothing must not enter treated area until plants are dry or as stipulated on the label. If possible, remove infested plants from living and eating areas prior to spray application. Place plants outdoors or in an area not likely to come in contact with people, pets, or food while spraying and while plants are wet. In most situations, plants can be returned to original location when they are dry. If plants cannot be removed, follow label precautions.

Phytotoxicity (damage to the plant as a result of the application of a chemical) is an important consideration in controlling pests of ornamentals. Phytotoxicity is generally expressed as damage to the leaves, flowers, or stems and is observed as "burn" (browning of tissue), "chlorosis" (yellowing or bleaching of tissue), or modification of growth by deformation or stunting. There are many species and cultivars of ornamental plants with varying sensitivity to chemicals. Other environmental conditions, such as your particular growing conditions, will also affect phytotoxicity. You are encouraged to evaluate a pesticide for phytotoxicity on a few plants under your particular conditions before treating all plants.

Pesticide labels for commercial and homeowner products that are currently registered for use in Arkansas may be found through the Arkansas Department of Agriculture/State Plant Board website by clicking on the following link: https://agriculture.arkansas.gov/crops-industry/pesticides/pesticide-registration/

Insect or Mite	Insecticide and Formulation	Amount Per 100 Gallons of Water	Amount Per Gallon	Comments
Aphid	afidopyropen Ventigra	Follow label directions	Follow label directions	Follow label directions. 12 hours. REI.
	Beauveria bassiana BotaniGard ES Naturalis-L	 0.5-3.0 qts 30-100 fl oz	 0.33-1.0 fl oz 0.30-1.0 fl oz	
	chlorantraniliprole Acelepryn			Soil treatment only. Follow label directions.
	clothianidin Arena 50 WDG	 0.63-1.26 oz		Apply as a full-coverage foliar spray or a drench. See label for drench rates. 12 hours restricted entry interval.
	cyfluthrin (Decathlon)	1.3-1.9 oz	1/4 tsp	Follow label directions.
	flonicamid 50 WDG Aria 0.7 oz package	 1-6 packets (0.7-4.3 oz)		Repeat application every 7-28 days as necessary. 12 hours restricted entry interval.
	fluvalinate (Mavrik)	4-10 oz	1/2-1 tsp	Follow label directions.
	horticultural oil Sunspray Ultrafine Saf-T-Side Triact 90EC	1%-2%	1%-2%	Thorough coverage is necessary. Spray must contact pest to be effective.
	imidacloprid Merit 75WP Merit 75WPS Marathon II			Per label directions.
	insecticidal soap (M-Pede)	1%-2%	1%-2%	Thorough coverage is necessary. Spray must contact pests to be effective. Repeat spray 3 times at 5- to 7-day interval. Soap could make floor slippery.
	Isaria fumosorosea Preferal	14-28 oz	0.14-0.28 oz	
	pymetrozine (Endeavor)	2-5 oz	1/4-1/2 tsp	Follow label directions.
	pyriproxyfen (Distance)	6-8 fl oz	0.02 oz (0.6 mL)	Follow label directions.
	s-kinoprene Enstar 5E	 6-10 oz	 1/2 tsp	Follow label directions.
	spirotetramat Kontos 2F	 1.7 fl oz		See label for drench instructions. 24-hour restricted entry interval.
	thiamethoxam Flagship 25WG	 4-8.5 oz	 0.04-0.085 oz	Reapply as needed but no sooner than every 7 days. DO NOT exceed 17 oz/acre per crop or year.
Caterpillars (leaf feeding)	chlorantraniliprole (Acelepryn)	1.0-16.0 fl oz		Foliar application only. Follow label directions.

INSECT CONTROL FOR ORNAMENTALS GROWN IN INTERIOR PLANTSCAPES

Insect or Mite	Insecticide and Formulation	Amount Per 100 Gallons of Water	Amount Per Gallon	Comments
Clearwing Borers	chlorantraniliprole (Acelepryn)	4.0-32 fl oz		Bark treatment application only. Follow label directions.
Fungus Gnats	*Bacillus thuringiensis* subsp. israelensis Gnatrol WDG	3.2-6.4 oz 13-26 oz		For light infestation. For heavy infestation. Follow label directions.
	Beauveria bassiana Naturalis-L	30-100 fl. oz	0.30-1.0 fl. oz	
	cyromazine Citation 75% WP	2.66 oz	1/2 tsp	Follow label directions.
	diflubenzuron Adept 25WSB	16-24 oz	0.04-0.08 (1-2 grams)	Follow label directions.
	pyriproxyfen (Distance)	3-6 fl oz	0.02 (0.6 mL)	Follow label directions.
	s-kinoprene Enstar II 5E	6-10 oz	1/2 tsp	Follow label directions.
	Steinemema feltiae Entonem, NemaShield, Nemasys, Scan Mask			Follow label directions.
	thiamethoxam Flagship 25WG	4-8.5 oz	0.04-0.085 oz	Reapply as needed, but no sooner than every 7 days. DO NOT exceed 17 oz/acre per crop or year.
Lace Bug	*Beauveria bassiana* BotaniGard ES	0.5-3.0 qts	0.33-1.0 fl oz	
	chlorantraniliprole (Acelepryn)			Soil treatment only. Follow label directions.
	thiamethoxam Flagship 25WG	4-8.5 oz	0.04-0.085 oz	Reapply as needed, but no sooner than every 7 days. DO NOT exceed 17 oz/acre per crop or year.
Leafminer (Birch leafminer)	chlorantraniliprole (Acelepryn)			Soil treatment only. Follow label directions.
	thiamethoxam Flagship 25WG	4-8.5 oz	0.04-0.085 oz	Reapply as needed, but no sooner than every 7 days. DO NOT exceed 17 oz/acre per crop or year.
Mealybug	afidopyropen Ventigra	Follow label directions	Follow label directions	Follow label directions. 12 hours. REI.
	Beauveria bassiana BotaniGard ES Naturalis-L	0.5-3.0 qts 30-100 fl. oz	0.33-1.0 fl oz 0.30-1.0 fl. oz	
	clothianidin Arena 50 WDG	0.9-1.26 oz		Apply as a full-coverage foliar spray or a drench. See label for drench rates. 12 hours restricted entry interval.
	cyfluthrin (Decathlon)	1.3-1.9 oz	1/4 tsp	Follow label directions.
	dinotefuran Safari 20 SG		1/2-1 tsp	Also effective on armored scale.
	flonicamid 50 WDG Aria 0.7 oz package	1-6 packets (0.7-4.3 oz)		Repeat application every 7-28 days as necessary. 12 hours restricted entry interval.
	horticultural oils Sunspray ultrafine Saf-T-Side Triact 90EC	1%-2%	1%-2%	Care must be taken because some plants are sensitive to oils. Thorough coverage is necessary, but do not overapply. Use fine spray.
	imidacloprid Merit 75WP Merit 75 WSP Marathon II			Follow label directions.

Insect or Mite	Insecticide and Formulation	Amount Per 100 Gallons of Water	Amount Per Gallon	Comments
Mealybug (cont.)	insecticidal soap (M-Pede)	1%-2%	1%-2%	Thorough coverage is necessary. Spray must contact pests to be effective. Repeat spray 3 times at 10- to 14-day intervals. Soap could make floor slippery.
	Isaria fumosorosea (Preferal)	14-28 oz	0.14-0.28 oz	
	pyrethrum PT 1600A Pyrenone	aerosol		Follow label directions.
	pyriproxyfen (Distance)	8-12 fl oz	0.02 (0.6 mL)	Follow label directions.
	s-kinoprene Enstar II 5E	6-10 oz	1/2 tsp	Follow label directions.
	spirotetramat Kontos 2F	1.7 fl oz		See label for drench instructions. 24-hour restricted entry interval.
	thiamethoxam Flagship 25WG	4-8.5 oz	0.04-0.085 oz	Reapply as needed, but no sooner than every 7 days. DO NOT exceed 17 oz/acre per crop or year.
Mites	*Beauveria bassiana* BotaniGard ES Naturalis-L	 0.5-3.0 qts 30-100 fl oz	 0.33-1.0 fl oz 0.30-1.0 fl oz	
	bifenazate (Floramite)	2-4 oz	1/4-1/2 tsp	Follow label directions.
	cyflumetofen (Sultan)	13.7 fl oz		12 hours restricted entry interval. IRAC Group 25. DO NOT exceed the maximum seasonal use rate of 27.4 fl oz of Sultan per crop growing cycle. DO NOT make more than 2 applications of Sultan per crop growing cycle. **Sultan has selective activity on the Tetranychid family of mites but is not active on other species such as broad mite, cyclamen mite, flat mite or rust mite**.
	fenazaquin (Magus)	12-24 oz	0.12-0.24 oz	Follow label directions.
	fenproximate Akari 5SC	16-24 oz	0.16-0.24 oz (4.527 mL)	Follow label directions.
	fluvalinate (Mavrik)	4-10 oz	1/2-1 tsp	Follow label directions.
	insecticidal soap (M-Pede)	1%-2%	1%-2%	Thorough coverage is necessary. Spray must contact pest to be effective. Repeat spray 3 times at 5- to 7-day intervals. Soap could make floor slippery.
	pyrethrum PT 1600A Pyrenone	aerosol		Follow label directions.
Scale	afidopyropen Ventigra	Follow label directions	Follow label directions	Follow label directions. 12 hours. REI. Controls nymphs and crawlers only.
	cyfluthrin (Decathlon)	1.3-1.9 oz	1/4 tsp	Follow label directions.
	dinotefuran Safari 20 SG		1/2-1 tsp	Also effective on armored scale.
	horticultural oil Sunspray ultrafine Saf-T-Side Triact 90EC	1%-2%	1%-2%	Care must be taken because some plants are sensitive to oils. Thorough coverage is necessary, but do not overapply. Use fine spray.
	imidacloprid (Marathon, others)			Follow label directions. Many names and formulations are available.

Insect or Mite	Insecticide and Formulation	Amount Per 100 Gallons of Water	Amount Per Gallon	Comments
Scale (cont.)	insecticidal soap (M-Pede)	1%-2%	1%-2%	Thorough coverage is necessary. Spray must contact pests to be effective. Soap could make floor slippery.
	pyrethrum PT 1600A Pyrenone	aerosol		Follow label directions.
	pyrifluquinazon (Rycar)	6.4 oz	0.064 oz	Follow label directions. IRAC Group: un
	pyriproxyfen (Distance)	8-12 fl oz	0.02 oz (0.6 mL)	Follow label directions.
	spirotetramat Kontos 2F	1.7 fl oz		See label for drench instructions. 24-hour restricted entry interval.
	thiamethoxam Flagship 25WG	4-8.5 oz	0.04-0.085 oz	Soft scale only. Reapply as needed, but no sooner than every 7 days. DO NOT exceed 17 oz/acre per crop or year.
Thrips	azadirachtin (Azatin)			Follow label directions.
	Beauveria bassiana BotaniGard ES Naturalis-L	 0.5-3.0 qts 30-100 fl oz	 0.33-1.0 fl oz 0.30-1.0 fl oz	
	cyfluthrin (Decathlon)	1.3-1.9 oz	1/4 tsp	Follow label directions.
	flonicamid 50 WDG Aria 0.7 oz package	1-6 packets (0.7-4.3 oz)		Repeat application every 7-28 days as necessary. 12-hour restricted entry interval.
	fluvalinate (Mavrik)	4-10 oz	1/2-1 tsp	
	insecticidal soap (M-Pede)	1%-2%	1%-2%	Thorough coverage is necessary. Spray must contact pest to be effective. Repeat spray 3 times at 5- to 7-day intervals. Soap could make floor slippery.
	thiamethoxam Flagship 25WG	4-8.5 oz	0.04-0.085 oz	For leaf-feeding thrips. Reapply as needed, but no sooner than every 7 days. DO NOT exceed 17 oz/acre per crop or year.
White Grub	chlorantraniliprole (Acelepryn)	0.184-0.367 fl oz per 1,000 sq ft		Soil treatment only. Follow label directions.
	clothianidin Arena 50 WDG	See label.		Apply as a drench. See label for drench rates. 12 hours restricted entry interval.
	thiamethoxam Flagship 25WG	6-8.5 oz	0.06-0.085 oz	Reapply as needed, but no sooner than every 7 days. DO NOT exceed 17 oz/acre per crop or year.
Whitefly	afidopyropen Ventigra	Follow label directions	Follow label directions	Follow label directions. 12 hours. REI.
	azadirachtin (Azatin)			Follow label directions.
	Beauveria bassiana BotaniGard ES Naturalis-L	 0.5-3.0 qts 30-100 fl oz	 0.33-1.0 fl oz 0.30-1.0 fl oz	
	clothianidin Arena 50 WDG	0.9-1.26 oz		Apply as a full coverage foliar spray or a drench. See label for drench rates. 12 hours restricted entry interval.

Insect or Mite	Insecticide and Formulation	Amount Per 100 Gallons of Water	Amount Per Gallon	Comments
Whitefly (cont.)	diflubenzuron Adept 25WSB	16-24 oz	0.04-0.08 oz (1-2 grams)	Follow label directions.
	dinotefuran Safari 20 SG		1/2-1 tsp	Also effective on armored scale.
	flonicamid 50 WDG Aria 0.7 oz package	1-6 packets (0.7-4.3 oz)		Repeat application every 7-28 days as necessary. 12-hour restricted entry interval.
	horticultural oils Sunspray ultrafine Saf-T-Side Triact 90EC	1%-2%	1%-2%	Care must be taken because some plants are sensitive to oils. Thorough coverage is necessary, but do not overapply. Use fine spray.
	imidacloprid Merit 75WP Merit 75WPS Marathon II			Follow label directions.
	insecticidal soap (M-Pede)	1%-2%	1%-2%	Thorough coverage is necessary. Spray must contact pest to be effective. Repeat spray 3 times at 5- to 7-day intervals. Soap could make floor slippery.
	Isaria fumosorosea (Preferal)	14-28 oz	0.14-0.28 oz	
	pymetrozine (Endeavor)	2-5 oz	1/4-1/2 tsp	Follow label directions.
	pyrethrum PT 1600A Pyrenone	aerosol		Follow label directions.
	pyriproxyfen (Distance)	6-8 fl oz	0.02 oz (0.6 mL)	Follow label directions.
	s-kinoprene Enstar 5E	6-10 oz	1/2 tsp	Follow label directions.
	spirotetramat Kontos 2F	1.7 fl oz		See label for drench instructions. 24-hour restricted entry interval.
	thiamethoxam Flagship 25WG	4-8.5 oz	0.04-0.085 oz	Reapply as needed, but no sooner than every 7 days. DO NOT exceed 17 oz/acre per crop or year.