

ORNAMENTALS

INSECT CONTROL FOR HOME FLOWERS, SHRUBS AND GROUND COVERS

Will Hudson, Extension Entomologist

NOTE: There is increasing concern about the health of pollinators, including honeybees and other bees, butterflies, and moths. Flowering plants in urban and suburban landscapes are an important source of nectar and pollen for these beneficial insects. Insecticide use in the home environment can cause significant harm to pollinators incidental to efforts at controlling pests. Be careful when using any insecticides around blooming plants, including trees and weeds. Broad-spectrum contact insecticides (pyrethroids, Sevin, *acephate*, etc.) applied as a liquid spray will kill most insects on contact. While less deadly once dry, unless treated leaves are eaten by the insects (foliage feeding caterpillars, for instance), there are still residues that can be picked up by foraging bees and taken back to the colony. Never spray blooming plants while bees are actively foraging. Late afternoon or evening application reduces the risks. Directly spraying the blossoms should also be avoided at all times. Avoid applying neonicotinyl insecticides (*imidacloprid*, *dinotefuran*) to blooming plants, as these systemic materials can be transferred to the nectar and pollen under some circumstances.

INSECTS	INSECTICIDE	AMT/GAL OF WATER	REMARKS AND PRECAUTIONS
Aphids	<i>acephate</i> 75S Orthene, etc.	2 tsp	See note below.
	<i>dinotefuran</i> Safari by Green Light		Per label directions. Take note of pollinator protection restrictions.
	horticultural oils	1-2 oz	Per label directions.
	<i>imidacloprid</i> 1.47% Bayer Advanced, others		Read label carefully. Take note of pollinator protection restrictions.
	insecticidal soap		Per label directions
	<i>pyrethrins</i>		
	<i>pyrethrum</i>		
Azalea leaf miner	<i>acephate</i> Orthene TTO	1 tsp	Per label directions.
	<i>dinotefuran</i> Safari by Green Light		Per label directions. Take note of pollinator protection restrictions.
	<i>imidacloprid</i> 1.47% Bayer Advanced, others		
Bagworm	<i>Bacillus thuringiensis</i> Biotrol WP, Thuricide, Sok-Bt	2 tsp	Per label directions.
	<i>dinotefuran</i> Safari by Green Light		In winter, hand-pick and burn if only a few bagworms are present.
	<i>malathion</i> 57EC various pyrethroids		See note below.
Borers (various kinds)	<i>dinotefuran</i> Safari by Green Light		Per label directions. Take note of pollinator protection restrictions.
	<i>imidacloprid</i> Bayer Advanced, others		<i>Imidacloprid</i> and <i>dinotefuran</i> are effective against flat-headed borers and some clear-winged moths.
	<i>permethrin</i>	Per Label	Apply to trunk and lower limbs in spring as per label directions.
Boxwood leaf miner	<i>acephate</i> 75S Orthene, etc.	2 tsp	
	<i>dinotefuran</i> Safari by Green Light		Per label directions.
	<i>imidacloprid</i> 1.47% Bayer Advanced, others		Per label directions. Take note of pollinator protection restrictions.
Caterpillars (Misc. leaf feeders)	<i>Bacillus thuringiensis</i> Biotrol WP, Thuricide, Sok-Bt		Per label directions.
	<i>carbaryl</i> Sevin, many other names	See label	Many different formulations available.
	various pyrethroids		See note below.
	<i>spinosad</i> Conserve, other brands	1 tsp	Some organic certified products are available.

NOTE: A number of pyrethroid materials are available in a variety of home formulations for use as broad-spectrum contact insecticides. Common names include *bifenthrin*, *cyfluthrin*, *cypermethrin*, *deltamethrin*, *lambda-cyhalothin*, *permethrin*, and *tralomethrin*. Active ingredients are listed on the label.

Most of the materials listed in the Commercial Landscape Insect Control section of this handbook are not Restricted Use Pesticides and are available for home use. They are not marketed for homes in small quantities at retail garden centers, but they could provide options for some homes. Consult your county Extension agent for advice on alternatives.

ORNAMENTALS – HOME INSECT CONTROL

INSECTS	INSECTICIDE	AMT/GAL OF WATER	REMARKS AND PRECAUTIONS
Holly leaf miner	<i>imidacloprid</i> 1.47% Bayer Advanced, other brands		Spray in late spring to kill larvae in mines. Per label directions.
Japanese beetle (adults)	<i>carbaryl</i> Sevin, many other names	See label	Many different formulations available.
	<i>dinotefuran</i> Safari by Green Light		Per label directions. Take note of pollinator protection restrictions.
	<i>imidacloprid</i> Bayer Advanced, others		Per label directions. Take note of pollinator protection restrictions.
Lace bugs	<i>acephate</i> Orthene, etc.	1 tsp	Apply in early spring when nymphs of first generation are present.
	<i>dinotefuran</i> Safari by Green Light		Per label directions. Take note of pollinator protection restrictions.
	<i>imidacloprid</i> 1.47% Bayer Advanced, others		Per label directions.
Scale Insects	<i>carbaryl</i> Sevin, many other names	See label	Many different formulations available.
	<i>dinotefuran</i> Safari by Green Light	1-2 oz	Per label directions.
	horticultural oils	2 tsp	Per label directions.
	<i>imidacloprid</i> Bayer Advanced insecticidal soap		Per label directions.
	<i>malathion</i> 57EC		Apply in spring to control crawlers. Make applications at 2-week intervals.
Spider mites	<i>bifenthrin</i>		Per label directions.
	<i>disulfoton</i> 1%		Per label directions.
	horticultural oils		
	<i>imidacloprid</i> Bayer Advanced insecticidal soap	1-2 oz	Per label directions.
Slugs and snails	<i>iron phosphate</i> Slug-Go		Follow label directions.
	<i>mesurol</i> 2B		
	<i>metaldehyde</i>		Follow label directions.
Thrips	<i>carbaryl</i> Sevin, many other names	See label	Many different formulations available.
	<i>malathion</i> 57EC		
	<i>spinosad</i> Conserve, other brands	1 tsp	Some organic certified products are available.
	various pyrethroids		
Whitefly	<i>bifenthrin</i>		Per label directions.
	<i>dinotefuran</i> Safari by Greenlight		Per label directions.
	<i>imidacloprid</i> 1.47% Bayer Advanced insecticidal soap		Per label directions.
	<i>pyrethrins</i>		Per label directions.
	<i>pyrethrums</i>		Per label directions.

NOTE: A number of pyrethroid materials are available in a variety of home formulations for use as broad-spectrum contact insecticides. Common names include *bifenthrin*, *cyfluthrin*, *cypermethrin*, *deltamethrin*, *lambda-cyhalothin*, *permethrin*, and *tralomethrin*. Active ingredients are listed on the label.

Most of the materials listed in the Commercial Landscape Insect Control section of this handbook are not Restricted Use Pesticides and are available for home use. They are not marketed for homes in small quantities at retail garden centers, but they could provide options for some homes. Consult your county Extension agent for advice on alternatives.

HOME INDOOR PLANT INSECT CONTROL

Will Hudson, Extension Entomologist

NOTE: There is increasing concern about the health of pollinators, including honeybees and other bees, butterflies, and moths. Flowering plants in urban and suburban landscapes are an important source of nectar and pollen for these beneficial insects. Insecticide use in the home environment can cause significant harm to pollinators incidental to efforts at controlling pests. Be careful when using any insecticides around blooming plants, including trees and weeds. Broad-spectrum contact insecticides (pyrethroids, Sevin, *acephate*, etc.) applied as a liquid spray will kill most insects on contact. While less deadly once dry, unless they are eaten by the insects (foliage feeding caterpillars, for instance), there are still residues that can be picked up by foraging bees and taken back to the colony. Never spray blooming plants while bees are actively foraging. Late afternoon or evening application reduces the risks. Directly spraying the blossoms should also be avoided at all times. Avoid applying neonicotinyl insecticides (*imidacloprid*, *dinotefuran*) to blooming plants, as these systemic materials can be transferred to the nectar and pollen under some circumstances.

INSECTICIDE	RATE	COMMENT
<i>bifenthrin</i> Ortho Houseplant and Garden Insect Killer	As Directed	mealybugs, mites, whitefly, aphids, most chewing pests.
<i>cyfluthrin</i> Bayer Advanced Home Pest Control	As Directed	gnats, centipedes, earwigs, scorpions. Follow label directions.
horticultural oil Plant Spray Oil (aerosol) Sunspray Ultrafine, Saf-T-Side	1-2%	scale, whitefly and mites. Coverage is important, spray must contact pest to be effective.
<i>imidacloprid</i> + fertilizer Bayer Advanced Garden 2-in-1 Plant Spikes	As Directed	aphids, mealybugs, whitefly.
insecticidal soap M-Pede	1-2%	aphids, mealybugs, scale, thrips, mites, whitefly. Coverage is important, spray must contact pest to be effective.
<i>pyrethrum</i> Pyrethrum (aerosol)	As Directed	aphids, mealybugs, thrips, whitefly.
<i>resmethrin</i> Resmethrin (aerosol)	As Directed	aphids and whitefly.
<i>tralomethrin</i>	As Directed	mites.

Numerous products containing insecticides are available to homes. Products containing the same insecticide may vary in the concentration of the active ingredient. Always consult the product label for information on rate of application. The following table provides the common name, brand name and lists manufacturers that package insecticides in products for home use.

INSECTICIDE	BRAND NAME AND COMMONLY AVAILABLE PRODUCTS
<i>bifenthrin</i>	Ortho products
<i>cyfluthrin</i>	Bayer Advanced Home Pest Control
<i>horticultural oil</i>	SunSpray Ultrafine, Saf-T-Side, Superior Oil, Golden Natural Spray Oil, Volck Oil – found in Green Light products and others
<i>imidacloprid</i> + fertilizer	Bayer Advanced Garden 2-in-1 Plant Spikes
<i>insecticidal soap</i>	M-Pede and Safer's Soap
<i>pyrethrum</i>	Pyrethrum – found in several Safer products, Garden Safe
pyrethroids	Ready to use and concentrate – Follow label directions
<i>resmethrin</i>	<i>Resmethrin</i> – found in Ortho, Dexol, Hot Shot and Rid-a-Bug products

HERBACEOUS ORNAMENTALS: HOME OUTDOOR INSECT CONTROL

Will Hudson, Extension Entomologist

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PEST	INSECTICIDE	AMOUNT FORMULATION PER GALLON SPRAY	REMARKS AND PRECAUTIONS
Aphids	<i>acephate</i>		Follow label directions.
	<i>disulfoton</i>		Follow label directions.
	horticultural oils	1-2%	Follow label directions.
	<i>imidacloprid</i>		Follow label directions.
	insecticidal soap	1-2%	Thorough coverage necessary. Spray must contact pest to be effective. Repeat spray 3 times at 5-7 day intervals.
	pyrethroids	Ready-to-use and concentrate	Follow label directions.
	various pyrethroids		Follow label directions. See note below.
	<i>pyrethrum</i>		Follow label directions.
Beetles (foliage feeding such as Japanese beetle, Elm leaf beetle)	<i>carbaryl</i> 50WP Sevin, many others	2 Tbsp	Apply to foliage when injury first noted.
	<i>disulfoton</i>		Follow label directions.
	<i>imidacloprid</i>		Many brands and formulations available. Follow label.
Caterpillars such as Armyworms, Cutworms, Loopers	<i>acephate</i>		Follow label directions.
	<i>Bacillus thuringiensis</i> Dipel, Thuricide		Follow manufacturer's suggestions.
	<i>carbaryl</i> Sevin, many other names	See label	Many different formulations available.
	pyrethroids	Ready to use and concentrate	Follow label directions. See note below.
	<i>spinosad</i> Conserve, other brands	1 tsp	Some organic certified products are available
Mealybugs	<i>acephate</i>		Follow label directions.
	horticultural oils	1-2%	Coverage important, spray must contact pest.
	<i>imidacloprid</i>		Follow label directions.
	insecticidal soap	1-2%	Thorough coverage necessary. Spray must contact pest to be effective. Repeat spray 3 times at 5-7 day intervals.
	pyrethroids	Ready to use and concentrate	Follow label directions.
Plant bugs Leafhopper	<i>acephate</i>		Follow label directions.
	<i>carbaryl</i> Sevin, many other names	See label	Many different formulations available.
	insecticidal soap	1-2%	Thorough coverage necessary. Spray must contact pest to be effective. Repeat spray 3 times at 5-7 day intervals.
	pyrethroids	Ready to use and concentrate	Follow label directions.

Numerous products containing insecticide are available to homes. Products containing the same insecticide may vary in the concentration of the active ingredient. Always consult the product label for information on rate of application. Pyrethroids are a class of chemicals that are excellent contact insecticides. The active ingredients in this class end in *-thrin* (*permethrin*, *bifenthrin*, *cyfluthrin*, etc.) Many brands are available with these active ingredients.

HERBACEOUS ORNAMENTALS: HOME OUTDOOR INSECT CONTROL

PEST	INSECTICIDE	AMOUNT FORMULATION PER GALLON SPRAY	REMARKS AND PRECAUTIONS
Scale Insects	<i>acephate</i>		Follow label directions.
	<i>dinotefuran</i> Safari from GreenLight		Best choice for armored scales. Per label directions. Take note of pollinator protection restrictions.
	horticultural oils	1-2%	Follow label directions.
	<i>imidacloprid</i>		Follow label directions. Good for soft scales. Take note of pollinator protection restrictions.
	insecticidal soap	1-2%	
	<i>malathion</i>		Follow label directions.
	pyrethroids	Ready-to-use and concentrate	Follow label directions.
Slugs and Snails	<i>iron phosphate</i>		Follow label directions. Crawlers only.
	<i>mesurol</i> 2B	1 lb/100 sq ft	Follow label directions.
	<i>methaldehyde</i>		Attention should be given to moist areas or water leaks. Do not use in home gardens.
Sowbugs and Pillbugs	<i>carbaryl</i> Sevin, many other names	See label	Many different formulations available. Clean up breeding and hiding places, i.e., treat any mulched area of ornamental shrubbery.
Spider mites	<i>bifenthrin</i> 0.012%	Ready to use	Follow label directions.
	<i>disulfoton</i>		Follow label directions.
	horticultural oils	1-2%	
	insecticidal soap	1-2%	Coverage is important, spray must contact pest to be effective.
Stalk borer	<i>carbaryl</i> Sevin, many other names	See label	Many different formulations available. Treat as often as needed beginning when first damage noted. Do not allow ragweed to grow near flower beds.
Thrips	<i>acephate</i>		Follow label directions.
	<i>imidacloprid</i>		Follow label directions. Take note of pollinator protection restrictions.
	insecticidal soap	1-2%	Thorough coverage necessary, spray must contact pest to be effective. Repeat spray 3 times at 5-7 day intervals.
	<i>spinosad</i> Conserve, other brands	1 tsp	Some organic certified products are available.
	various pyrethroids		See note below.
Whitefly	<i>acephate</i>		Follow label directions.
	<i>dinotefuran</i> Safari from GreenLight		Per label directions. Take note of pollinator protection restrictions
	<i>disulfoton</i>		Follow label directions.
	horticultural oils		
	<i>imidacloprid</i>		Follow label directions. Take note of pollinator protection restrictions.
	insecticidal soap	1-2%	
	pyrethroids	Ready to use and concentrate	Follow label directions. See note below.

Numerous products containing insecticide are available to homes. Products containing the same insecticide may vary in the concentration of the active ingredient. Always consult the product label for information on rate of application. Pyrethroids are a class of chemicals that are excellent contact insecticides. The active ingredients in this class end in *-thrin* (*permethrin*, *bifenthrin*, *cyfluthrin*, etc.) Many brands are available with these active ingredients.

HERBACEOUS ORNAMENTALS: HOME OUTDOOR INSECT CONTROL

COMMON NAME	BRAND NAME AND COMMONLY AVAILABLE PRODUCTS
<i>acephate</i>	Orthene and many generic brands
<i>Bacillus thuringiensis</i> (Bt)	Biotrol, Dipel, Thuricide, Sok-Bt; found in various Green Light, Ortho, Ford's, Rigo, and Safer products
<i>carbaryl</i>	Sevin; found in various KGro, Green Light, Ford's, Rigo, and Dexol products
<i>dinotefuran</i>	Safari from GreenLight
<i>disulfoton</i>	Bayer Advanced 24-Hour Grub Killer
horticultural oil	SunSpray Ultrafine, Saf-T-Side, Superior Oil, Golden Natural Spray Oil, Volck Oil; found in Green Light products, neem oil, organic insect control, and others
<i>imidacloprid</i>	Bayer Advanced Garden 2-in-1 Plant Spikes
insecticidal soap	M-Pede and Safer's Soap
<i>iron phosphate</i>	Bayer Advanced Snail & Slug Bait
<i>malathion</i>	Ortho, others
<i>pyrethrins</i>	<i>Pyrethrin</i> ; found in various products, including Ortho, KGro, Green Light, Dexol, Rigo, Black Flag, Garden Safe
pyrethroids	<i>esfenvalerate</i> , <i>lambda-cyhalothrin</i> , <i>permethrin</i> , <i>bifenthrin</i> and others
<i>pyrethrum</i>	<i>Pyrethrum</i> ; found in several Safer products
<i>spinosad</i>	Conserve and other brands, some organic formulations available

WEED CONTROL FOR HOMES: ANNUAL FLOWERS AND WOODY PLANT MATERIAL GROWING OUTDOORS

Mark A. Czarnota, Extension Horticulturist – Weed Science

HERBICIDE	FORMULATION	AMOUNT OF FORMULATION/ GAL PER 1000 SQ FT	REMARKS AND PRECAUTIONS
HERBACEOUS FLOWERS			
PRE-EMERGENCE ^{1,2,3,4,5}			
<i>benefin + oryzalin</i> Amaze 2G	2% granular	4.6-6.9 lb	Can be applied over-the-top of several established bedding plants (see label). Provides broad-spectrum control of many broad leaf and annual grass weeds.
<i>dithiopyr</i> Preen for Southern Gardens	0.27 granular	4.5 lb	Can be applied around many annual, perennial and woody plants (see plant label). Do not apply more than 12.75 lbs/1000 sq ft. If used in combination with mulch, apply over the surface of the mulch after spreading mulch around ornamentals. Also available on a dry fertilizer carrier.
<i>oryzalin</i> Surflan 4AS	4 lb/gal	1.5-3 fl oz	Controls annual grasses and some broadleaf weeds. Can be applied over-the-top to certain established flowers. One-half inch of rainfall or irrigation water immediately after application will aid in weed control. Do not use on Coleus or Begonia species.
<i>trifluralin</i> Preen 1.47G	1.47% granular	6.25 lb ¹	Apply to established flowers and ornamentals to control annual grasses and some broadleaf weeds from seed. Optimum weed control is obtained when rainfall or irrigation occurs within a few hours of application. If used in combination with mulch, apply over the surface of the mulch after spreading mulch around ornamentals. DO NOT apply to seedbeds or to non-rooted plants, or around plants when foliage is wet. Preen is also available on a dry fertilizer carrier.
POST-EMERGENCE			
<i>clethodim</i> Envoy Plus	0.97 lb/gal	0.3-0.7 fl oz	Apply to actively-growing grasses that are not drought stressed. Make sure to add a crop oil concentrate at 1% V/V to the spray solution. Refer to label for recommended list of ornamentals. Envoy will not control broadleaf weeds or nutsedges.
<i>fluazifop-p</i> Grass-B-Gon and others	See label.	See label.	Apply to actively growing grasses, which are not drought stressed. Refer to label to determine if the addition of a surfactant is necessary. Refer to label for recommended list of ornamentals. Fluazifop will not control broadleaf weeds or nutsedges.
<i>sethoxydim</i> Segment	1 lb/gal	0.8-1.4 fl oz	Apply to actively growing grasses, which are not drought stressed. DO NOT add a crop oil concentrate or surfactant to Vantage (the formulation contains an adjuvant). Vantage will not control broadleaf weeds or nutsedges.
AREAS ADJACENT TO ORNAMENTAL FLOWERS (POST-EMERGENCE)			
<i>glufosinate</i> Finale 1L	1 lb/gal	2.2-4.4 fl oz	Apply glufosinate to control emerged weeds. DO NOT allow spray mist to contact ornamental foliage or severe injury will occur. Glufosinate performs poorly on well-established perennial weeds with extensive underground storage structures (Florida betony, bermudagrass, nutsedge, etc.)
<i>glyphosate</i> various trade names and formulations available	See label.	See label.	Apply glyphosate to control most emerged weeds. DO NOT allow spray mist to contact ornamental foliage, green bark, base of thin bark plants (i.e. Crapemyrtle), or stumps of cuts sucker or severe injury could occur. Avoid applications to drought-stressed weeds.
<i>halosulfuron</i> Sedgehammer 75DF Manage 75 DF Prosedge	75DF	0.9 grams (spray weeds to runoff)	Apply as a post-directed application to control yellow and purple nutsedge in established woody ornamentals. Apply with 1/3 fluid ounce of nonionic surfactant per gallon of water. DO NOT allow the spray to contact foliage of desirable woody ornamentals. Wait 3 months after transplanting before application. On areas scheduled to be planted in woody ornamentals wait 4 weeks between application and transplanting.

¹ There are many other herbicides available to the homeowner that are not restricted use (see Commercial Edition--Commercial Grounds Maintenance Weed Control Section). Most of these herbicides are available in larger packaging and can be harder to attain. Moreover, most of these commercial products can pose greater potential for plant injury if used improperly.

² All preemergent herbicides require rain or irrigation in order for herbicide activation to occur (approximately 0.5-1" of water). If no rain occurs and no supplemental watering is provided after a preemergent herbicide application, weed control can be extremely poor or totally fail.

³ Most preemergent herbicides will only control germinating weed seed. Generally, they will not control weeds after they have become established (1st or 2nd true leaf), and most preemergent herbicides will not control weeds coming from vegetative structures (i.e. yellow and purple nutsedge).

⁴ As long as the treated area remains undisturbed, most pre-emergent herbicides will provide weed control for 2-4 months in most growing mediums.

⁵ Do not apply preemergent herbicides to seeded beds or to non-rooted plants or in greenhouses.

WOODY ORNAMENTALS: WEED CONTROL FOR HOMES¹

Mark A. Czarnota, Extension Horticulturist-Weed Science

HERBICIDE	AMOUNT OF FORMULATION/ GAL PER 1000 SQ FT	REMARKS AND PRECAUTIONS
WEED CONTROL AND WOODY PLANT MATERIAL / GROUND COVERS		
PRE-EMERGENCE ^{2, 3, 4, 5}		
<i>dichlobenil</i> Casoron 4G Casoron CS	2.3-3.4 lb 2.2-4.3 oz	USE ONLY ON ESTABLISHED WOODY ORNAMENTALS. Apply between Nov. 15 and Feb. 15. Good product for controlling non-seed bearing plants (i.e. Bracken fern (<i>Pteridium aquilinum</i>)), winter annuals, and Florida betony (<i>Stachys floridana</i>). After application, Casoron must be watered in with ½-1 inch of water. DO NOT apply until 4 weeks after transplanting woody ornamentals.
<i>dithiopyr</i> Preen for Southern Gardens 0.27 granular	4.5 lb	Can be applied around many annual, perennial and woody plants (see plant label). Do not apply more than 12.75 lbs/1000 sq ft. If used in combination with mulch, apply over the surface of the mulch after spreading mulch around ornamentals. Also available on a dry fertilizer carrier.
<i>indaziflam</i> Specticle 0.0224 GR	2.3-4.6 lb	Controls a wide range of annual weeds in select woody ornamentals. Provides one of the longest pre-emergence weed control windows of any pre-emergence herbicide. Do not apply any more than 9.2 lb pr/1000 sq ft in a 12-month period.
<i>isoxaben + trifluralin</i> Snapshot 2.5 TG	2.3-4.6 lb	Controls a wide range of annual weeds in certain woody ornamentals, trees and groundcovers. DO NOT apply to newly planted ornamentals until the soil has firmly settled and no cracks are present. Not recommended for applications to bedding plants. Groundcovers should be established and well-rooted prior to application. Apply ½ inches of irrigation water, or uniformly incorporate into the soil to a depth of 1-2 inches if rainfall is not received within 3 days of application.
<i>oryzalin</i> Surflan 4 AS	1.5-3 fl oz	Controls annual grasses and some broadleaf weeds. Apply over the top to established ornamentals. One-half inch of rainfall or irrigation water immediately after application will aid in weed control. Surflan may be tank-mixed with <i>glyphosate</i> for control of emerged weeds. See REMARKS for <i>glyphosate</i> .
<i>trifluralin</i> Treflan 5 G Preen 1.47 G	1.8 lb 6.25 lb	Apply prior to planting and to established plants. Optimum weed control is obtained when rainfall or irrigation occurs within a few hours of application. DO NOT apply to newly planted groundcovers. DO NOT apply Treflan 5G to ornamentals with wet foliage. DO NOT apply to seeded beds or to non-rooted plants. Use the <i>trifluralin</i> product that is registered for ornamental use. Preen is also available on dry fertilizer carriers.
<i>benefin + oryzalin</i> XL 2 G Amaze 2 G	4.6-6.9 lb 4.5 lb	Apply only to established ornamentals. One-half inch of rainfall or irrigation water immediately after application will aid in weed control.
<i>glufosinate</i> Finale 1 lb/gal	2.2-4.4 fl oz	Apply <i>glufosinate</i> to kill most emerged weeds. DO NOT allow spray mist to contact ornamental foliage or severe injury will occur. Avoid applications to drought stressed weeds. Ready-to-use, premixed formulations of Finale are also available. Finale performs poorly on well-established perennial weeds with extensive underground storage systems (Florida betony, bermudagrass, nutsedge, etc.)
<i>glyphosate</i> various trade names and formulations available	See label.	Apply <i>glyphosate</i> to kill most emerged weeds. DO NOT allow spray mist to contact ornamental foliage, green bark, base of thin bark plants (i.e. Crapemyrtle), or stumps of cuts sucker or severe injury could occur. Avoid applications to drought stressed weeds. <i>Glyphosate</i> is very water soluble and can be tanked mixed with many preemergent herbicides. Refer to <i>glyphosate</i> label to determine compatibility with preemergent herbicides.

WOODY ORNAMENTALS: WEED CONTROL FOR HOMES¹

HERBICIDE	AMOUNT OF FORMULATION/ GAL PER 1000 SQ FT	REMARKS AND PRECAUTIONS
AREAS ADJACENT TO ORNAMENTALS		
POST-EMERGENCE		
<i>halosulfuron</i> Manage 75DF SedgeHammer 75DF Prosedge	0.9 grams (spray weeds to runoff)	Apply as a post-directed application to control yellow and purple nutsedge in established woody ornamentals. Apply with 1/3 fluid ounce of nonionic surfactant per gallon of water. DO NOT allow the spray to contact foliage of desirable woody ornamentals. Wait 3 months after transplanting before application. On areas scheduled to be planted in woody ornamentals wait 4 weeks between application and transplanting.
<i>imazaquin</i> Image 70 DG	0.2-0.26 oz	Can be applied over the top of several ornamentals (see label). Make sure to add a surfactant at 0.25% V/V. Controls several difficult weeds including sedges, wild onion, and wild garlic.
<i>potassium</i> salts of fatty acids Scythe 4.2L and various other trade names are available	See label.	Apply Scythe to kill most emerged weeds. DO NOT allow spray mist to contact ornamental foliage or severe injury will occur. Avoid applications to drought stressed weeds. Scythe performs poorly on well-established perennial weeds with extensive underground storage systems (Florida betony, bermudagrass, nutsedge, etc.). Also provides postemergent control of mosses, algae, liverworts, and lichens inside greenhouses, on growing containers and benches.
POST-EMERGENCE GRASS CONTROL		
<i>clethodim</i> Envoy Plus 0.97 lb/gal	0.3-0.7 fl oz	Apply to actively growing grasses that are not drought stressed. Make sure to add a crop oil concentrate at 1% V/V to the spray solution. Refer to label for recommended list of ornamentals. Envoy Plus will not control broadleaf weeds or nutsedges.
<i>fluazifop-P</i> Grass-B-Gon and others	See label.	Apply post-emergence to actively growing grasses that are not drought stressed. Refer to the label to determine if a surfactant is necessary and for a recommended list of ornamentals. <i>Fluazifop</i> will not control broadleaf weeds or nutsedges.
<i>sethoxydim</i> Segment 1 lb/gal	0.8-1.4 fl oz	Apply post-emergence to actively growing weedy grasses that are not drought stressed. DO NOT add a surfactant or crop oil concentrate to Vantage. Vantage will not control broadleaf weeds or nutsedges.
ORGANIC AND ORGANIC-LIKE HERBICIDES¹		
Acetic acid Weed Pharm, 30% Pure Vinegar, and others	Sold as 15, 20, and 30% concentrate. Activity of weeds will depend on weed species. Try to use on young tender plants for best results. Can use at full concentrate, but can be diluted. 25 and 50% spray dilutions may provide adequate control.	Currently, all the acids and oils only provide burndown capabilities and will only control plants with shallow root systems (i.e., crabgrass, bittercress, etc.). Multiple applications will be required to control deep-rooted perennials (i.e., yellow and purple nutsedge, bermudagrass, Florida betony, etc.). DO NOT allow spray mist to contact foliage of desirable plants as severe injury can occur. Avoid applications to drought stressed weeds. None of the listed products will provide pre-emergence weed control.
Citrus oil Greenmatch, Avenger Weed Killer	Some ready to use (RTU) products, but concentrates require diluted spray concentrations from 12.5% to 25% V/V (volume to volume)	
Citric acid C-Cide	Use undiluted on difficult weeds (i.e. bermudagrass). For less difficult weeds, dilute with water at 1 part C-Cide to 3 parts water or 1 part C-Cide to 2 parts water.	
Clove oil Burnout II, Matratec, and others	Some ready to use (RTU) products, but concentrates vary but usually 1 part product to 3 parts water	
Clove oil / cinnamon oil WeedZap	Make a 5% solution V/V	
Herbicidal Soap BioSafe Weed Control, Scythe, and others	Most advise making a 5 to 15% spray solution	
Corn Gluten Weed Prevention Plus, Luscious Lawn, and others	Rates vary by product but approximately 1000-2000 lbs/A	Corn gluten provides pre-emergence weed control of weeds coming from seed in lawn and garden situations. However, corn gluten can also inhibit the germination of desirable plants coming from seed. It also adds 10% nitrogen by weight.

¹ In the United States there are several organic certifications but in any organic operation the pesticides have to be certified by OMRI (Organic Material Review Institute) the herbicides in this section are not all certified by OMRI, but are considered safer than conventional herbicide.

ORNAMENTALS: WEED RESPONSE TO HERBICIDES

Mark A. Czarnota, Extension Horticulturist – Weed Science

TIME OF APPLICATION	<i>dichlobenil</i>	<i>dimethenamid</i>	<i>flumioxazin</i>	<i>indaziflam</i>	<i>isoxaben</i>	<i>norflurazon</i>	<i>oxadiazon</i>	<i>simazine</i>	<i>oryzalin</i>
	PRE								
PERENNIAL WEEDS (control of plants)									
bahiagrass		P	P	P	P	P	P	P	P
bermudagrass		P	P	P	P	P	P	P	P
dallisgrass		P	P	P	P	P	P	P	P
nutsedge, purple	G	P	P	P	P	P	P	P	P
nutsedge, yellow	G	F	P	P	P	P	P	P	P
tall fescue		P	P	P	P	P	P	P	P
wild garlic/ wild onion	G	P	P	P	P	P	P	P	P
ANNUAL GRASSES (control of plants from seed with pre-herbicides, control of plants with post-herbicides)									
annual bluegrass	G	G	E	E	P-F	E	G	G	E
crabgrass	G	G	E	E	P-F	G	G	G	E
goosegrass	G	G	E	E	P	G	E		E
ANNUAL SMALL SEEDED BROADLEAF WEEDS (control of plants from seed with pre-herbicides, control of plants with post-herbicides)									
bittercresses		E	E	E	G	G	G	F	G
common chickweed	G	E	E	E	E	G	G	E	G
deadnettle	G			E		G		G	G
dodder	E			E					
henbit	G		E	E	E	F	G	E	G
hop clovers	G			E	G		G	E	
knotweed	G		E	E		G	G	E	G
lespedeza	G			E	F		G	E	
morningglories	F	F	G	E	G	F	F	G	F
mustards	G	G	G	E	F		E	E	P
niruri/phyllanthus		E	E	E	E	G	G	G	G
spurge	G	E	E	E	E	G	F	E	G
woodsorrel	G	E	E	E	E	P-F	E	E	G
PERENNIAL BROADLEAF WEEDS (control of plants from seed with pre-herbicides, control of plants with post-herbicides)									
clovers	G	G	E	G	G		G	E	G
dandelion	G		E	G	G		G	G	G
dichondra	P (labeled)		E						
docks	G		E		G				
Florida betony	E					P			
mallow			E	G		G	G	G	G
mouseear chickweed	G		E	G			G	G	G
mugwort	E								
pennywort	G								
plantain			G		G		G		G

Key to Response Symbols: E – Excellent Control (>90%); G – Good Control (70-90%); F – Fair Control (50-70%); P – Poor Control (<50%) If no symbol is given, weed response is unknown.

ORNAMENTALS: WEED RESPONSE TO HERBICIDES

TIME OF APPLICATION	<i>oxyfluorfen</i>	<i>prodiamine</i>	<i>trifluralin</i>	<i>clethodim</i>	<i>clopyralid</i>	<i>diquat</i>	<i>fluazifop</i>	<i>glufosinate</i>
	PRE			POST-EMERGENCE				
PERENNIAL WEEDS (control of plants)								
bahiagrass	P	P	P	G	P	P	G	P
bermudagrass	P	P	P	G-E	P	P	G-E	P
dallisgrass	P	P	P	G	P	P	G	P
nutsedge, purple	P	P	P	P	P	P	P	P
nutsedge, yellow	P	P	P	P	P	P	P	P
tall fescue	P	P	P	G	P	P	F	P
wild garlic	P	P	P	P	P	P	P	P
ANNUAL GRASSES (control of plants from seed with pre-herbicides, control of plants with post-herbicides)								
annual bluegrass	G	E	G	E	P	G	E	G
crabgrass	G	E	E	E	P	G	E	G
goosegrass	G	G	G	E	P	G	E	G
ANNUAL SMALL SEEDED BROADLEAF WEEDS (control of plants from seed with pre-herbicides, control of plants with post-herbicides)								
bittercresses	G	G	G	P		G	P	G
common chick weed	G	G	G	P		G	P	E
deadnettle		G	G	P		G	P	G
dodder		P		P			P	
henbit	G	G	G	P		G	P	E
knotweed				P			P	E
lespedeza	G	G	G	P	E	F	P	F
morningglories		G	F	P		G	P	P
mustards	G	F	F	P		G	P	G
niruri/phyllanthus	G	G	P	P		G	P	G
spurge	G	G	G	P		G	P	G
woodsorrel	G	G	F	P		G	P	G
PERENNIAL BROADLEAF WEEDS (control of plants from seed with pre-herbicides, control of plants with post-herbicides)								
clovers	G	E	G	P	E	F	P	F
dandelion	G	G	G	P	G	G	P	P
dichondra				P	P		P	
docks	G	G	G	P	G	P	P	G
Florida betony				P	P	P	P	P
mallow	G	G	G	P		G	P	G
mouseear chickweed	G	G	G	P		G	P	G
mugwort				P	E	G	P	P
pennywort				P	G	G	P	P
plantain	G	G	G	P	P	G	P	F

Key to Response Symbols: E – Excellent Control (>90%); G – Good Control (70-90%); F – Fair Control (50-70%); P – Poor Control (<50%)
If no symbol is given, weed response is unknown.

ORNAMENTALS: WEED RESPONSE TO HERBICIDES

TIME OF APPLICATION	<i>glyphosate</i>	<i>halosulfuron</i>	<i>paraquat</i>	<i>pelargonic acid</i>	<i>sethoxydim</i>	<i>triclopyr</i>
	POST-EMERGENCE					
PERENNIAL WEEDS (control of plants)						
bahiagrass	G	P	P	P	G	P
bermudagrass	G	P	P	P	G	P
dallisgrass	E	P	P	P	P	P
nutsedge, purple	G	E	P-F	P	P	P
nutsedge, yellow	G	E	P-F	P	P	P
tall fescue	E	P	P	P	G	P
wild garlic	G	G	P		P	
ANNUAL GRASSES (control of plants from seed with pre-herbicides, control of plants with post-herbicides)						
annual bluegrass	E	P	E	G	P-F	P
crabgrass	G	P	G	G	E	P
goosegrass	E	P	F-G	F	E	P
ANNUAL SMALL SEEDED BROADLEAF WEEDS (control of plants from seed with pre-herbicides, control of plants with post-herbicides)						
bittercresses	G		E	F	P	G
common chickweed	E		E	G	P	G
deadnettle	G		E	G	P	G
dodder	E				P	
henbit	E		E	G	P	G
knotweed	E		E	G	P	G
lespedeza	E			F	P	G
morningglories	G		F-G	F	P	G
mustards	E		E	G	P	G
niruri/phyllanthus	E		E		P	G
spurge	E		E	G	P	G
woodsorrel	E		E	G	P	G
PERENNIAL BROADLEAF WEEDS (control of plants from seed with pre-herbicides, control of plants with post-herbicides)						
clovers	F			P-F	P	G
dandelion	E	G		P	P	G
dichondra	E				P	G
docks	E				P	G
Florida betony	G				P	G
mallow	E			F	P	G
mouseear chickweed	E			G	P	G
mugwort	E			F	P	F
pennywort	E				P	G
plantain	E				P	G

Key to Response Symbols: E – Excellent Control (>90%); G – Good Control (70 to 90%); F – Fair Control (50 to 70%); P – Poor Control (<50%)
If no symbol is given, weed response is unknown.

HOME ORNAMENTAL AND TREE DISEASE CONTROL

GENERAL FUNGICIDE GUIDELINES

Elizabeth Little, Extension Plant Pathologist

Prevention in the home garden and landscape is the key to reducing diseases in and around your yard. Several preventive practices can be used for disease control before resorting to spraying pesticides. They include: 1) Selecting disease-free plants from accredited nurseries and garden centers; 2) Selecting resistant ornamental varieties; 3) Site selection and planning in order to grow plants that are appropriate for each individual yard; 4) proper plant care, including fertilization, irrigation, and removing dead and diseased plant parts that could harbor pathogens; and 5) Regular scouting for potential disease problems and pests. The application of pesticides should be the last option for the home. It is best to properly identify the pathogen before applying/spraying a pesticide. **REMEMBER TO ALWAYS READ AND FOLLOW THE LABEL CAREFULLY.**

This guide has two sections: **PART A** is a list of commonly occurring plant pathogens/diseases and the materials that can be used to control them (including the active ingredient and brand name); **PART B** is a list of commonly grown herbaceous and woody ornamental plants and trees and some of the diseases that occur on them. Plant names in PART B are listed alphabetically according to the scientific name of the plant. If it is uncertain whether a fungicide can be safely used on a plant species, a small number of plants should be treated to test for phytotoxicity prior to treating the entire crop. Always refer to the fungicide label for directions.

The products listed can be found at local garden retail centers and on-line at particular locations.

****Keep in mind this is not an all-inclusive list of plants or products. Contact your local county Extension agent for more information regarding plants or pesticide control products.**

FOLLOW ALL LABEL DIRECTIONS CAREFULLY. PAY PARTICULAR ATTENTION TO RE-ENTRY PERIODS AND RE-USE INTERVALS.

PART A: LIST OF COMMONLY OCCURRING PLANT PATHOGENS/DISEASES AND MATERIALS USED TO CONTROL THEM

DISEASE	ACTIVE INGREDIENT BRAND NAME	CONTACT OR SYSTEMIC
OOMYCETES Phytophthora root/crown rot	<i>fosetyl-al</i> Monterey Aliete	Systemic
Pythium root/crown rot	<i>phosphorous acid</i> Monterey AGRI-FOS	Systemic
Downy mildew Phytophthora blight/dieback	<i>fosetyl-al</i> Monterey Aliete	Systemic
	<i>chlorothalonil</i> Daconil Ortho Garden Disease Control Hi-Yield Vegetable, Flower, Fruit, & Ornamental Fungicide Fertilome Landscape & Garden Fungicide Bonide Fung-onil Gardentech Daconil Monterey Fruit Tree, Vegetable, and Ornamental Fungicide	Contact
	<i>copper hydroxide</i> Hi-Yield Copper Fungicide Kocide 101	Contact
	<i>copper salts</i> Monterey LIQUI-COP Bonide Liquid Copper Fungicide Dragon Copper Fungicide	Contact
	<i>phosphorous acid</i> Monterey AGRI-FOS	
FUNGAL Botrytis blight	<i>chlorothalonil</i> Daconil Ortho Garden Disease Control, Hi-Yield Vegetable, Flower, Fruit, & Ornamental Fungicide Fertilome Landscape & Garden Fungicide Bonide Fung-onil Gardentech Daconil Monterey Fruit Tree, Vegetable, and Ornamental Fungicide	Contact

HOME ORNAMENTAL AND TREE DISEASE CONTROL

DISEASE	ACTIVE INGREDIENT BRAND NAME	CONTACT OR SYSTEMIC
FUNGAL (<i>continued</i>) Armillaria rot/stem rot Black root rot Cylindrocladium root rot Rhizoctonia root/stem rot Sclerotinia root rot Sclerotium blight	<i>PCNB</i> Hi-Yield Turf & Ornamental Fungicide Terraclor (several manufacturers)	Contact
	<i>thiophanate-methyl</i> Scotts Lawn Fungus Control Green Light Systemic Fungicide Dragon Systemic Fungicide 3336	Systemic
Diplodia tip blight Kabatina dieback Phomopsis dieback Phomopsis needle blight WP Sclerotinia stem rot Tip blight	<i>thiophanate-methyl</i> Ferti-lome Halt Systemic Fungicide Scotts Lawn Fungus Control Green Light Systemic Fungicide Dragon Systemic Fungicide 3336 WP	Systemic
Powdery mildew	<i>chlorothalonil</i> Daconil Ferti-lome Broad Spectrum Liquid Fungicide Ortho Garden Disease Control Hi-Yield Vegetable, Flower, Fruit, & Ornamental Fungicide Fertilome Landscape & Garden Fungicide Bonide Fung-onil Gardentech Daconil	Contact
	Jojoba oil Monterey E-Rase RTU	Contact
	<i>myclobutanil</i> Ferti-lome F-stop Lawn Fungicide Green Light Fung-Away Systemic Granules Spectracide Immunox Fungicide Spectracide Lawn Disease Spray Spectracide Lawn Disease Control Granules Spectracide Multi-purpose Fungicide	Systemic
	<i>Neem oil</i> Green Light Powdery Mildew RTU Ferti-Lome Triple Action RTU	Contact
	<i>potassium bicarbonate</i> soluble powder Monterey Bi-Carb Old Fashioned Fungicide	Contact
	<i>sulfur</i> Safer Garden Fungicide Monterey Sulfur 90W Bonide Sulfur Plant Fungicide Hi-Yield Wettable Dusting Sulfur Dragon Wettable or Dusting Garden Sulfur Top-Cop with Sulfur	Contact
Rust	<i>chlorothalonil</i> Daconil Ortho Garden Disease Control Hi-Yield Vegetable, Flower, Fruit, & Ornamental Fungicide Fertilome Landscape & Garden Fungicide Bonide Fung-onil Gardentech Daconil	Contact

HOME ORNAMENTAL AND TREE DISEASE CONTROL

DISEASE	ACTIVE INGREDIENT BRAND NAME	CONTACT OR SYSTEMIC
FUNGAL (continued)	<i>myclobutanil</i> Ferti-lome F-stop Lawn Fungicide Green Light Fung-Away Systemic Granules Spectracide Immunox Fungicide Spectracide Lawn Disease Spray Spectracide Multi-purpose Fungicide	Systemic
Rust (continued)	<i>tebucanazole</i> Bayer Disease Control	Systemic
	<i>triadimefon</i> Green Light Fung-Away Fungicide Green Light Fung-Away Systemic Lawn Spray Hi-Yield Lawn Fungicide Granules	Systemic
Leaf spots (Alternaria, Anthracnose, Cercospora, Cylindrocladium, Fungicide Entomosporium, Gnomonia, Heterosporium, Macrophoma, Mycosphaerella, Phyllosticta, Purple-eye, Septoria, Zonate)	<i>chlorothalonil</i> Daconil Ferti-lome Broad Spectrum Liquid Fungicide Hi-Yield Daconil Garden Tech Fungicide Disease Control Bonide Fung-onil Multi-Purpose Fungicide Ortho Garden Disease Control Dragon Daconil 2787 Monterey Fruit Tree, Vegetable, and Ornamental Fungicide	Contact
	<i>propiconazole</i> Bonide Infuse Ortho Lawn Disease Control Ferti-lome Liquid Systemic	Systemic
Black spot (Rose) Curvularia leaf blight Leaf streak (daylily) Scab Spot anthracnose Volutella blight Web blight	<i>captan</i> Bonide Captan Dragon Captan Wettable Powder	Contact
	<i>copper hydroxide</i> Kocide 101 Nu-Cop 50DF	Contact
	<i>copper salts</i> Monterey LIQUI-COP Bonide Liquid Copper Fungicide	Contact
	<i>mancozeb</i> Bonide Mancozeb Flowable	Contact
	<i>maneb</i> Hi-Yield Maneb Garden Fungicide	Contact
	<i>thiophanate-methyl</i> Ferti-Lome Halt Systemic Fungicide Scotts Lawn Fungus Control Green Light Systemic Fungicide Dragon Systemic Fungicide 3336WP	Systemic
Leaf/flower gall	<i>chlorothalonil</i> Daconil Ortho Garden Disease Control Hi-Yield Vegetable, Flower, Fruit, & Ornamental Fungicide Fertilome Landscape & Garden fungicide Bonide Fung-onil Gardentech Daconil Monterey Fruit Tree, Vegetable, and Ornamental Fungicide	Contact
	<i>mancozeb</i> Bonide Mancozeb Flowable	Contact

HOME ORNAMENTAL AND TREE DISEASE CONTROL

DISEASE	ACTIVE INGREDIENT BRAND NAME	CONTACT OR SYSTEMIC
Leaf/flower gall (continued)	<i>myclobutanil</i> Ferti-lome F-stop Lawn Fungicide Green Light Fung-Away Systemic Granules Spectracide Immunox Fungicide Spectracide Lawn Disease Spray Spectracide Lawn Disease Control Granules Spectracide Multi-purpose Fungicide	Systemic
Cankers (various fungal pathogens)	There are various fungal pathogens that cause cankers on woody/herbaceous ornamentals and trees. For the most part, fungicides are not an effective or practical means of control. Keeping plants healthy is the key to preventing and controlling cankers on plants. Avoid stress on the plants (over/under-watering and fertilization). PRUNE infected branches at least 1 inch below infected area and sterilize pruning tools between cuts (10% bleach or alcohol). AVOID WATER STRESS and TREE WOUNDING.	
BACTERIAL Fire Blight Bacterial Blight Soft rot	<i>copper</i> Bonide Copper Spray or Dust	Contact
	<i>copper hydroxide</i> Kocide 101 Nu-Cop 50DF	Contact
	<i>copper salts</i> Monterey LIQUI-COP Bonide Liquid Copper Fungicide	Contact
	<i>copper oxinate</i> Concern Copper Soap	Contact
	<i>streptomycin sulfate</i> Bonide Fire Blight Spray Ferti-lome Fire Blight Spray	Contact
Crown gall	Important to purchase healthy plants. Biological controls are available. Check with county agents. Can use copper compounds, but may be phytotoxic.	
NEMATODE	<i>chitin</i> Clandosan	This product is a soil amendment that increases the growth of naturally occurring micro-organisms that feed on nematodes (nematode bodies are composed of chitin).
VIRUSES	No chemical controls for viral diseases.	

**PART B: LIST OF COMMONLY GROWN ORNAMENTAL PLANTS AND TREES
AND SOME OF THE DISEASES THAT OCCUR ON THEM.**

**This is not an all-inclusive list.*

PLANT – SCIENTIFIC NAME (COMMON NAME)	DISEASES
Abelia	No major pests...leaf spots, powdery mildew, root knot nematode
Abies (Fir)	Botrytis blight, Cytospora canker, oedema (cultural), Phytophthora root/crown rot
Abutilon (Velvet Leaf/Flowering Maple)	Rhizoctonia root rot, web or aerial blight, root knot nematode, stem rot, root rot, rust
Acer (Maple, Box Elder)	Anthrachnose, Bacterial scorch, Bacterial Wetwood, Botryosphaeria dieback, Cytospora canker, Ganoderma root rot, leaf spot (various fungi), Nectria canker, Phomopsis dieback, tar spot, Valsa canker, Verticillium wilt, Phyllosticta leaf spot
Achillea (Yarrow)	Powdery mildew
Aconitum (Monkshood)	Southern blight
Aesculus (Horse Chestnut, Buckeye)	Guignardia blotch
Agave (Century Plant)	Crown rot, Anthracnose, Leaf spot
Ageratum (Floss Flower)	Southern blight, Pythium & Phytophthora root rots, Botrytis blight, rust, powdery mildew
Ailanthus (Tree-of-Heaven)	Fusarium stem/root rot
Ajuga (Bugleweed)	Phomopsis dieback, Phytophthora root rot, Pythium root rot, Rhizoctonia root/crown rot, root knot nematode, Southern blight, viral disease, web blight
Albizia (Mimosa)	Fusarium wilt, Crown dieback (Fusarium)
Alcea (Hollyhock)	Root knot nematode, Rust
Allium (Ornamental Onion)	White rot
Aloe	Root rot (Pythium)
Amelanchier (Service Berry)	Rust, Entomosporium leaf spot, bacterial fire blight, powdery mildew
Anemone	Foliar nematode, Phytophthora root rot, Rust, leaf spot, downy mildew
Anise-tree	Sooty mold, leaf spot (algal)
Antirrhinum (Snapdragon)	Cercospora leaf spot, downy mildew, Phytophthora root/crown rot, Pythium root rot, Rhizoctonia stem rot, Rust, Verticillium Wilt, viral diseases, Botrytis blight
Aquilegia (Columbine)	Pythium root rot, crown rot, Powdery mildew
Arctostaphylos (Bearberry)	Pythium root rot, Phytophthora root rot
Arisaema (Jack-in-the-Pulpit)	Rust
Armeria (Sea Thrift)	Web blight
Aronia (Chokeberry)	Pythium root rot
Aegopodium (Goutweed)	Leaf spot
Artemisia (Dusty Miller)	Rhizoctonia root/stem rot
Asclepias (Milkweed)	Anthrachnose
Asclepias tuberosa (Butterfly Weed)	Rhizoctonia stem rot
Asimina (Pawpaw)	Nectria canker, leaf spots
Aster	Powdery mildew, Rust, leaf spot
Astilbe	Pythium root rot, root knot nematodes
Aucuba	Anthrachnose, Botryosphaeria dieback, leaf spots, Phomopsis dieback, ring nematode
Bamboo	Pythium root rot

HOME ORNAMENTAL AND TREE DISEASE CONTROL

PLANT – SCIENTIFIC NAME (COMMON NAME)	DISEASES
Bedding plants	Damping off (<i>Pythium</i>)
Begonia	Anthrachnose, Botrytis blight, Fusarium stem rot, Powdery mildew, Rhizoctonia root/stem rot, root knot nematode
Berberis (Barberry)	Phytophthora root rot
Bergenia	Pythium root rot
Betula (Birch)	Anthrachnose, Botryosphaeria dieback, Botrytis blight, red heart, Septoria leaf spot, rust
Buddleia (Butterfly Bush)	Phytophthora root rot, Rhizoctonia root rot
Buxus (Boxwood)	Botryosphaeria dieback, Boxwood decline, Lesion nematode, Macrophoma leaf spot, Phytophthora root rot, Volutella blight
Cactus	Pythium root rot
Caladium	Pythium root rot
Calibrachoa (Million Bells)	Phytophthora crown rot, Rhizoctonia root rot, Southern blight
Callicarpa (Beauty Berry)	No serious problems
Calocedrus (Incense Cedar)	Seiridium canker
Camellia	Anthrachnose, Botryosphaeria dieback, leaf/flower gall, leaf spot, oedema (nutritional), petal/flower blight, Phytophthora root rot, Pythium root rot, viral disease
Campanula (Bellflower)	Fusarium crown rot, leaf spots
Campsis (Trumpet Vine)	Anthrachnose, mistletoe, powdery mildew
Canna (Canna Lily)	Lesion nematodes, Pythium root rot, bacterial bud rot
Carpinus (Hornbeam)	Pythium root rot, cankers
Capsicum (Ornamental Pepper)	Verticillium wilt
Carya (Hickory)	Downy leaf spot, Gnomonia leaf spot, phomopsis gall, Powdery mildew, Zonate leaf spot
Caryopteris (Bluebeard)	Phytophthora stem/root rot, Pythium root rot
Castanea (Chestnut)	Chestnut blight canker
Catalpa	Bacterial wetwood, Verticillium wilt, Cercospora leaf spot
Catharanthus (Madagascar Periwinkle)	Black root rot, Botrytis blight, Phytophthora blight, Pythium root rot, Rhizoctonia stem/root rot
Cattleya (Orchid)	Bacterial brown spot
Cedrus (Cedar)	Armillaria root rot, Phomopsis needle/twig blight
Celosia (Cockscomb)	Pythium root rot, Rhizoctonia root rot, leaf spot
Cercis (Redbud)	Botryosphaeria dieback, Botrytis blight, Fusarium canker, leaf spot, Verticillium wilt
Chamaecyparis (Falsecypress)	Phytophthora root rot, Seiridium canker, web blight
Chionanthus (Fringe Tree)	Leaf spot
Chrysanthemum (Shasta Daisy, Mum)	Pythium root rot, web blight, Rust, Powdery mildew, foliar nematode, Verticillium wilt
Chrysogenum (Goldenstar)	Southern blight
Cladastris (Yellow Wood)	Anthrachnose
Clematis	Leaf spot, Phytophthora root rot
Clivia (Kaffir Lily)	Leaf spot, Southern blight
Coleus	Botrytis blight, Downy mildew

HOME ORNAMENTAL AND TREE DISEASE CONTROL

PLANT – SCIENTIFIC NAME (COMMON NAME)	DISEASES
Consolida (Larkspur)	Pythium root rot, Rhizoctonia root/crown rot
Coreopsis (Tickseed)	Botrytis blight, Rhizoctonia root/stem rot, rust, viral disease
Cornus (Dogwood)	Anthrachnose, Botryosphaeria dieback/canker, Botrytis blight, Disculaanthracnose, Fusarium canker, leaf spot, phomopsis dieback, Powdery mildew, Pythium root rot, Septoria leaf spot, spot anthracnose, viral disease
Corylus (Filbert)	Eastern Filbert blight
Cosmos (Mexican Aster)	Botrytis blight, Phomopsis stem canker, powdery mildew, white smut
Cotinus (Smoke Tree)	Anthrachnose, Verticillium wilt
Cotoneaster	Leaf spot, Phytophthora root rot, web blight, fire blight
Crassula (Jade Plant)	Oedema, Pythium root rot
Crataegus (Hawthorn)	Cercospora leaf spot, Entomosporium leaf spot, rust, fire blight
Cryptomeria (Japanese Cedar)	Needle blight, Phomopsis twig blight, Phytophthora root rot
Cupressus (Cypress)	Botryosphaeria dieback, Kabatina dieback, tip blights, Phytophthora root rot, Seiridium canker
Cyclamen	Fusarium Wilt
Cymbidium (Orchid)	Viral disease
Dahlia	Crown gall, Powdery mildew, tuber rot (fungal-Fusarium and Botrytis), root rot, viral disease (mosaic)
Daphne	Anthrachnose, Phytophthora root/stem rot, crown rot (Sclerotium spp.)
Davidia (Dove Tree)	Phomopsis dieback
Delosperma (Ice Plant)	Pythium root rot
Dendranthema (Chrysanthemum)	Bacterial leaf spot, Botrytis blight, Mycosphaerella ray blight, Phytophthora root rot, powdery mildew, Pythium root/stem rot, Rhizoctonia root rot, Septoria leaf spot, leaf rust, Verticillium wilt
Dianthus (Carnation)	Alternaria leaf spot, Botrytis blight, Fusarium stem rot, powdery mildew, Rhizoctonia stem rot, rust, aster yellows, viral disease
Digitalis (Foxglove)	Black root rot, Fusarium root rot, Pythium root rot, Anthracnose
Dimorphothea (African Daisy)	Botrytis blight
Dracaena	Fusarium blight, Pythium root rot
Duchesnea (Indian Strawberry)	Rust
Echinacea (Coneflower)	Aster yellows, foliar nematodes, Pythium root rot, viral disease
Eichhornia (Water Hyacinths)	Leaf spot
Elaeagnus (Autumn Olive)	Phytophthora root rot
Epiphyllum (Cereus)	Oedema (nutritional)
Epipremnum (Pothos)	Phytophthora stem rot
Erica (Heather)	Phytophthora root rot
Eucalyptus	Anthrachnose, Botryosphaeria dieback, crown gall, Fusarium canker, Phomopsis dieback, Phytophthora root rot, powdery mildew, Pythium root rot
Euonymus	Powdery mildew
Euphorbia (Spurge)	Anthrachnose, Botryosphaeria dieback
Euphorbia pulcherima (Poinsettia)	Bacteria blight, bacterial leaf spot, Botrytis blight, powdery mildew, Pythium root rot, scab
Eustoma (Lisianthus)	Botrytis blight, Fusarium stem/root rot
Exacum (Persian Violet)	Viral disease

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Fagus (Beech)	Anthraco-nose, Botryosphaeria canker, Hypoxylon canker, viral disease
Fatsia	Leaf spot
Fatshedra (Bush Ivy)	Botrytis blight, Fusarium root/stem rot, Phomopsis blight, Rhizoctonia root rot, Powdery mildew, scab
Ficus (Fig)	Anthraco-nose, Phytophthora root rot
Ficus benjamina (Weeping Fig)	Anthraco-nose, Phomopsis gall
Forsythia	Botryosphaeria dieback, crown gall, Phomopsis gall, Phytophthora root rot, ringer nematodes, Sclerotinia twig blight, web blight
Fraxinus (Ash)	Anthraco-nose, ash yellows, Botryosphaeria canker, rust
Gaillardia (Blanket Flower)	Pythium root rot, White smut
Galium (Sweet Woodruff)	Rhizoctonia stem/root rot, Southern blight
Gardenia	Anthraco-nose
Gerbera (African Daisy)	Pythium root rot, Botrytis blight
Gladiolus	Botrytis leaf blight, Curvularia leaf blight, Fusarium yellows, Penicillium corm rot, Rhizoctonia corm rot, aster yellows, scab
Gleditsea (Honeylocust)	Botryosphaeria canker, Thyronectria canker
Gloxinia (Sinningia)	Viral disease
Gomphrena (Globe Amaranth)	Leaf spot, root knot nematode
Gypsophila (Baby's Breath)	Bacterial soft rot
Hamamelis (Witchhazel)	Botryosphaeria dieback, leaf spot, powdery mildew
Hedera helix (English Ivy)	Anthraco-nose, Bacterial leaf spot, oedema, Phyllosticta leaf spot, Phytophthora root rot, Pythium root rot, Rhizoctonia root rot
Heliant hemum (Rock Rose)	Botrytis blight
Helianthus (Sunflower)	Alternaria leaf/stem spot, powdery mildew
Helichrysum (Strawflower)	Fusarium stem rot
Helleborus (Hellebore)	Black leaf spot, Botrytis blight, Pythium root rot, Rhizoctonia root rot, Southern blight
Hemerocallis (Daylily)	Anthraco-nose, rust, leaf streak, Southern blight
Heuchera (Coral Bells)	Pythium root rot, leaf spot, downy mildew
Hibiscus	Phytophthora root rot, Pythium root rot, viral disease
Hibiscus syriacus (Rose-of-Sharon)	Leaf spot
Hosta	Anthraco-nose, Botrytis blight, leaf spot, root rot, soft rot, Southern blight, virus X
Hyacinth (Hyacinthus)	Bacterial soft rot, root rot, gray mold
Hydrangea	Anthraco-nose, Armillaria root rot, bacterial leaf spot, Botrytis blight, Cercospora leaf spot, Phytophthora root rot, Pythium root rot, powdery mildew
Hypericum (St. Johnswort)	Phytophthora root/stem rot, rust, Rhizoctonia root rot, leaf spots
Iberis (Candytuft)	Anthraco-nose, Pythium root rot
Ilex (Holly)	Anthraco-nose, Bacterial Blight, Black root rot, Botryosphaeria dieback, leaf spot, root knot nematodes, oedema (nutritional), Phomopsis dieback, Phytophthora root rot, Pythium root rot, Rhizoctonia root rot, rust, tar spot, web blight
Ilex glabra (Ink Berry)	Black root rot, Phytophthora root rot
Impatiens	Alternaria leaf spot, bacterial fasciation, Botrytis blight, Fusarium crown rot, powdery mildew, Pythium root/stem rot, Rhizoctonia root/stem rot, root knot nematodes, Verticillium wilt, viral diseases

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PLANT – SCIENTIFIC NAME (COMMON NAME)	DISEASES
Ipomoea (Morning Glory)	Rust, white rust
Iris	Botrytis blight, Heterosporium leaf spot, soft rot, viral disease (mosaic)
Juniperus (Juniper)	Kabatina tip blight, Pestalotia dieback, Phytophthora root rot, Pythium root rot, rust
Juniperus virginiana (Eastern Red Cedar)	Cercospora blight, Kabatina tip blight, Pestalotia blight, Phomopsis tip blight, rust
Kalmia (Mountain Laurel)	Botryosphaeria dieback, Cercospora leaf spot
Lagerstroemia (Crape Myrtle)	Leaf spot, powdery mildew, sooty mold
Lantana	Leaf spot, root knot nematode, fusarium wilt
Laurus nobilis (Bay Laurel)	Cercospora leaf spot
Lavandula (Lavender)	Phytophthora root rot, Pythium root rot
Leucothoe (Drooping Leucothoe)	Botryosphaeria dieback, Cylandrocladium leaf spot, Phyllosticta leaf spot, Phytophthora root rot
Ligustrum (Privet)	Anthrachnose, Cercospora leaf spot, Phytophthora root rot
Lilium (Lily)	Anthrachnose, Botrytis blight, Pythium root rot, viral disease (mosaic)
Limonium (Statice)	Phytophthora root rot, Pythium root rot, Rhizoctonia root rot
Liquidambar (Sweet Gum)	Cercospora leaf spot, Sphaeropsis gall
Liriodendron (Tulip Tree)	Powdery mildew, sooty mold
Liriope (Lilyturf)	Anthrachnose, foliar nematodes, Mycosphaerella leaf spot, Phytophthora leaf spot, viral disease
Lobelia	Pythium root rot, viral disease
Lobularia (Sweet Alyssum)	Rhizoctonia root rot
Lonicera (Honeysuckle)	Botryosphaeria dieback, Botrytis blight, Herpobasidium leaf blight, powdery mildew, witches' broom
Lupinus (Lupine)	Anthrachnose, brown spot, Pythium root rot
Lysimachia (Loosestrife)	Rhizoctonia root/stem rot, Southern blight
Magnolia	Bacterial leaf spot, powdery mildew
Malus (Crabapple)	Coniothyrium leaf spot, fire blight, frog-eye leaf spot, powdery mildew, rust, scab
Malva (Mallow)	Rust
Miscanthus	Blight
Morus (Mulberry)	Berry blight, bacterial leaf blight, bacterial wetwood
Myosotis (Forget-Me-Not)	Web blight
Myrica (Bayberry)	Botryosphaeria dieback, Phytophthora root rot
Myrica cerifera (Wax Myrtle)	Anthrachnose, Botryosphaeria dieback, Phytophthora root rot, Septoria leaf spot
Myrtle (Myrtus)	Leaf spot, stem rot (Sclerotinia)
Nandina (Heavenly Bamboo)	Cercospora leaf spot, Phytophthora root rot, Pythium root rot
Narcissus (Daffodil, Jonquil)	Fusarium bulb rot & various other fungal bulb rots, leaf spot & blight, virus
Nelumbo (Water Lily)	Cercospora leaf spot
Nerium (Oleander)	Leaf spot, anthrachnose, bacterial blight, sooty mold
Nyssa sylvatica (Black Gum)	Anthrachnose, Botryosphaeria dieback, leaf spot
Ocimum basilicum (Basil)	Alternaria leaf spot, Fusarium crown rot
Ophiopogon (Mondo Grass)	Anthrachnose
Oxalis (Wood Sorrel)	Rust, leaf spot, root knot nematode

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PLANT – SCIENTIFIC NAME (COMMON NAME)	DISEASES
Oxydendrum arboreum (Sourwood)	Leaf spot
Pachysandra	Leaf spot, Pythium root rot, southern blight, Volutella blight, virus
Paeonia (Peony)	Botrytis blight, Cercospora leaf spot, Cladosporium leaf/stem blotch, Rhizoctonia root rot, Phytophthora blight
Parthenocissus (Boston Ivy)	Phyllosticta leaf spot
Parthenocissus quinquefolia (Virginia Creeper)	Downy mildew, leaf spot
Pelargonium (Geranium)	Bacterial blight, bacterial leaf spot, bacteria I wilt, Botrytis blight, oedema (nutritional), Pythium root rot, blackleg, Rhizoctonia root rot, rust, viral disease
Petunia	Botrytis blight, Fusarium root/crown rot, Phytophthora root/crown rot and foliage blight, Pythium crown/root rot, Rhizoctonia root/stem rot, viral disease
Phalaris (Canarygrass)	Web blight
Phlox	Bacterial leaf spot, black root rot, Colletotrichum stem canker, powdery mildew, Pythium root rot, southern blight, viral disease, web blight
Photinia (Japanese Photinia Red-Tip)	Bacterial blight, Botryosphaeria canker, Entomosporium leaf spot, powdery mildew, Armillaria root rot
Physocarpus (Ninebark)	Powdery mildew, Rhizoctonia root rot
Picea (Spruce)	Cytospora canker, Phytophthora root rot, Pythium root rot, needle blight, tip blight
Pieris (Japanese Pieris)	Botryosphaeria dieback, Phomopsis canker, Phytophthora root rot
Pinus (Pine)	Armillaria root rot, Atropellis twig canker, Cenangium dieback, Cytospora canker, Diplodia tip blight, Dothiostroma needle blight, Eastern gall rust, Fusiform rust, needle cast, needle rust, Phacidiopycnis canker, Phytophthora root rot, pinewood nematodes
Pistacia (Pistache)	Verticillium wilt
Platanus (Sycamore)	Anthrachnose, Bacterial scorch, Botryosphaeria dieback, powdery mildew
Platycodon (Balloon Flower)	Rhizoctonia crown rot
Polygonatum (Solomon Seal)	Penicillium rot
Populus (Poplar)	Botryosphaeria canker, leaf spot
Portulaca (Purslane)	Rhizoctonia stem rot, root knot nematode
Potentilla (Cinquefoil)	Foliar nematodes, rust
Pratia	Southern blight
Primula (Primrose)	Leaf spot, Pythium and Rhizoctonia root/stem rot
Prunus (Flowering Apricot/Cherry/Peach/Plum)	Bacterial blossom blight, bacterial leaf spot, bacterial shot hole, bacterial scorch, black knot, blossom blight/ brown rot, Cytospora canker, Nectria canker, peach leaf curl, Phomopsis canker, white rot
Prunus laurocerasus (Cherry Laurel)	Anthrachnose, bacterial leaf spot, bacterial shot hole, Botryosphaeria dieback, Phomopsis dieback, leaf spots, Phytophthora root rot, Pythium root rot, zonate leaf spot
Pseudotsuga (Douglas Fir)	Botryosphaeria canker, Swiss needle cast
Pyracantha (Firethorn)	Botryosphaeria dieback, fire blight, Phomopsis dieback, scab
Pyrus calleryana (Flowering Pear)	Botryosphaeria canker, Entomosporium leaf spot, fire blight, rust
Quercus (Oak)	Anthrachnose, Armillaria root rot, bacterial scorch, bacterial wetwood, Botryosphaeria canker, Cylindrocladium root rot, Discula anthracnose, Hypoxylon canker, leaf blister, Phomopsis dieback, powdery mildew, rust, smooth patch, spot anthracnose, Tubakia leaf spot

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PLANT – SCIENTIFIC NAME (COMMON NAME)	DISEASES
Ranunculus (Buttercup)	Bacterial blight, web blight, viral disease (mosaic), Verticillium wilt
Raphiolepis (Indian Hawthorn)	Entomosporium leaf spot
Rhododendron (Azalea)	Anthrachnose, Armillaria root rot, Botryosphaeria dieback, Botrytis blight, Cercospora leaf spot, Colletotrichum leaf spot, leaf and flower gall, lesion nematodes, oedema (nutritional), Pestalotia leaf spot, petal blight, Phomopsis dieback, Phyllosticta leaf spot, Phytophthora dieback, Phytophthora root/stem rot, powdery mildew, web blight
Rhus (Sumac)	Verticillium wilt, Bot canker & dieback, powdery mildew, root rot
Rosa (Rose)	Anthrachnose, black spot, Botryosphaeria dieback, Botrytis blight, crown gall, downy mildew, Phomopsis Canker, powdery mildew, Pythium root rot, rose rosette disease, viral disease
Rosmarinus (Rosemary)	Botrytis blight, crown gall, Phytophthora root rot, Pythium root rot
Rudbeckia (Black-Eyed Susan)	Pythium root rot, Rhizoctonia stem rot, Septoria leaf spot
Sagittaria (Arrowhead)	Leaf spot, leaf smut
Salix (Willow)	Armillaria root rot, Botryosphaeria dieback, Botrytis blight, black canker, Cercospora leaf spot, crown gall, rust, scab, white rot
Salvia	Bacterial leaf spot, downy mildew, Pythium root rot, Rhizoctonia stem rot, Botrytis blight
Sansevieria (Snake Plant)	Bacterial soft rot, leaf spots, root knot nematode, Fusarium rot
Scabiosa (Pincushion Flower)	Botrytis blight
Schefflera (Umbrella Tree)	Oedema (nutritional), Pythium root rot
Sedum (Stone Crop)	Anthrachnose, bacterial soft rot, bacterial stem rot, Diplodia stem rot, leaf spot, Phytophthora stem rot, Pythium root rot, Rhizoctonia stem/root rot, root knot nematodes, web blight
Setcreasia (Purple Heart)	Leaf spot
Solidago (Goldenrod)	Rust, powdery mildew, leaf spot
Spiraea	Leaf spot
Styrax (Silverbell)	Leaf spot
Syringa (Lilac)	Anthrachnose, bacterial blight, Botrytis blight, Cercospora leaf spot, Phytophthora root rot, powdery mildew
Tagetes (Marigold)	Alternaria blight, Botrytis blight, crown gall, Fusarium stem/root rot, Pythium root rot, Rhizoctonia stem rot
Taxus (Yew)	Botryosphaeria dieback, Phytophthora root rot
Thuja (Arborvitae)	Armillaris root/stem rot, Cytospora canker, Kabatina tip blight, Phomopsis twig/needle blight, Phytophthora root rot, Pythium root rot, Seiridium twig canker, web blight, Diplodia canker/dieback
Thymus (Thyme)	Pythium root rot
Tilia (Linden)	Spot anthracnose, white rot
Tradescantia virginica (Spiderwort)	Southern blight
Tsuga (Hemlock)	Armillaria root rot, damping-off, rust
Tulipa (Tulip)	Botrytis blight, Fusarium basal rot, bulb rot (various fungi), virus color breaking
Ulmus (Elm)	Bacterial wetwood, bacterial leaf scorch, Botryosphaeria canker, Cytospora canker, Dutch elm disease, Verticillium wilt
Verbena (Vervain)	Powdery mildew, Pythium root rot, bacterial wilt
Veronica (Speedwell)	Phytophthora root rot, rust, powdery mildew

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PLANT – SCIENTIFIC NAME (COMMON NAME)	DISEASES
Viburnum (Snowball Bush)	Spot anthracnose, bacterial scorch, Botryosphaeria dieback, Botrytis blight, phoma leaf spot, Phytophthora root rot, Rhizoctonia root rot
Vinca minor (Periwinkle)	Oedema (nutritional), Phoma dieback, Phomopsis dieback, Phyllosticta stem rot/leaf spot, Pythium root rot, Rhizoctonia root rot, Southern blight, Botrytis blight
Viola (Pansy)	Anthrachnose, black root rot, Botrytis blight, Cercospora leaf spot, Phytophthora root/crown rot, Pythium root/crown rot
Weigala	Phytophthora root rot, Pythium root rot
Wisteria	Botryosphaeria dieback
Yucca	Bacterial soft rot, Mycosphaerella leaf spot
Zinnia	Alternaria blight, bacterial leaf spot, Botrytis stem canker, powder mildew, Pythium root rot