

North Carolina Flower Growers' Bulletin

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NEW FLORICULTURE EXTENSION SPECIALIST JOINS NC STATE UNIVERSITY FACULTY

Dr. Brian E. Whipker is the new floriculture extension specialist in the Department of Horticultural Science and will be in place by the time you receive this Bulletin. Brian comes to Raleigh from Ames, Iowa where he has served as the state extension specialist since November 1995. He's is a native of Columbus, Indiana and had the good sense to avoid Indiana University and get his education at a more prominent institution in that state.

Brian received dual BS degrees from Purdue University in 1985, one in horticulture and one in agricultural education. After completing his BS, Brian was an extension agent in Wisconsin for a short period then he decided to continue his education. He returned to Purdue for his Masters and was awarded an MS in agricultural economics in 1988. After his masters program, Brian was a regional extension specialist in northern Indiana with responsibilities in floriculture and vegetable crops. Four years later, Brian decided to return to Purdue to pursue a Ph.D. in horticulture with Dr. P. Allen Hammer (a Cary, NC native and NC

State graduate). Brian's thesis research topic was "Modelling nutrient uptake in poinsettias as a function of growth rate."



Brian's responsibility here in North Carolina is an 80% extension and 20% research appointment. He will be working closely with

growers and agents in developing an educational program in floriculture. After Roy Larson retired from the department in August of 1996, Doug Bailey was assigned to teaching, extension and research in floriculture. Doug will still maintain some extension appointment, but Brian will be "taking the lead" in floriculture extension programming.

Brian brings his wife, Linda and their one-year-old son, Benjamin to our state from the cold Midwest. They have bought a house in Cary and will hopefully be settled in before the long harsh North Carolina winter comes to visit.

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We welcome Brian and his family to North Carolina and look forward to working with him in the future.

Calendar of Events

Event	Date	Time	Location and contacts
NC State University Poinsettia Open House	Thursday 4 December	9:00 am to 3:00 pm	Horticulture Field Laboratory, Raleigh, N.C. Contact Bonnie for more details.
Grower Expo	Thursday–Sunday 8–11 January 1998		Hyatt Regency O'Hare, Rosemont, Ill. Contact GrowerTalks at 800.456.5380.
Green and Growin' Show	Friday–Sunday 16–18 January 1998		Benton Convention Center, Winston-Salem, NC. Contact Bonnie for more information.

N.C. FLORICULTURE LOSES CLOSE FRIEND IN STEVE COBLE

Steve Coble, Novartis Seed representative, died last month after an extended bout with cancer. Steve was an active member of our industry for many years--representing McHutchison, Vaughan's, and most recently, Novartis. He was well known throughout the state as a truly caring person; he always had time to help growers with their problems and concerns. He will be sorely missed.

A scholarship has been set up within the Horticultural Science Department of NC State

University in memory of Steve and his contributions to our industry. Craig Leonard has taken the lead role in establishing this tribute and can answer any questions you may have (704.821.7507). Contributions can be made out to: NC Agr. Foundation and can be sent to: NC Agricultural Foundation, Steve Coble Memorial Scholarship, NCSU, Box 7645, Raleigh, NC 27695-7645.

Our thoughts and prayers go out to Steve's wife and family.

PESTICIDES LABELED FOR GREENHOUSE ORNAMENTAL INSECT AND RELATED PEST CONTROL

**James R. Baker, Entomology Extension and
Douglas A. Bailey, Horticultural Science Extension
North Carolina State University**

This table lists pesticides currently labeled for use in commercial floriculture greenhouses for use on ornamental plants. Unless noted in the precautions and remarks column, the pesticide listed is labeled for any greenhouse flower or foliage plant. Read individual labels for any restrictions on use prior to application; labels do change. The abbreviation "NA" stands for not applicable; used when a column is not applicable for a product. Do not confuse volume rates (given in fluid ounces [fl oz]; 8 fl oz = 1 cup) with weight rates (given in avoirdupois ounces [oz]; 16 oz = 1 pound [lb]). Do not equate 1 fl oz with 1 oz; many dry products such as wettable powders should be weighed out for precise concentrations. Other volume and weight abbreviations used include: Tablespoon (Tbsp), teaspoon (tsp), pint (pt), gallon (gal), and pound (lb). Aerosol product and vaporized product application rates are based on either greenhouse area (ft²) or greenhouse volume (ft³).

†Pesticide classifications: BO - botanical; CA - carbamate; CH - chlorinated hydrocarbon; DI - Diphenyl; IGR - insect growth regulator; MI - microbial; OP - organophosphate; PY - pyrethroid

Pesticide formulations: A - aerosol (includes compressed total release products and smoke generator products); AS - aqueous suspension; D - dust; DF - dry flowable; EC - emulsifiable concentrate; F - flowable; G - granular; L - water-soluble liquid; ME - microencapsulated; P - pelleted; SP - soluble powder; WG - water-dispersible granules; WP - wettable powder; WSP - water-soluble packets.

Insect or Related Pest	Pesticide, Classification, and Formulation†	Amount of Formulation per Gallon of Spray	Amount per 100 Gallons of Water	Minimum Interval Between Application	Precautions and Remarks
Aphids	acephate -- OP 75 SP (Orthene Turf, Tree and Ornamental, Pro 75) 3 A (PT 300 TR Orthene & PT 1300 DS Orthene)	1 to 2 tsp NA -- Aerosols	$\frac{1}{3}$ to $\frac{2}{3}$ lb NA -- Aerosols	24 hours See product label	Orthene 75 soluble powder is also available for use on tobacco. When spraying ornamental plants, be sure to use Orthene Tree, Turf and Ornamentals or Pro 75 products. Apply total release aerosols using a rate of 1 lb per 1,500 to 3,000 ft ² . Treat as late in the day as possible. Apply directed spray aerosol using a release rate of 5 to 10 seconds per 100 ft ² .
	azadirachtin -- BO 0.3 F (Margosan-O) 3 EC (Azatin EC) 4.5 EC (Neemazad)	2 $\frac{1}{2}$ to 5 tsp $\frac{1}{2}$ tsp $\frac{1}{8}$ to $\frac{1}{4}$ tsp	40 to 80 fl oz 8 fl oz 2 $\frac{1}{4}$ to 4 $\frac{1}{2}$ fl oz	4 hours 4 hours 4 hours	
	<i>Beauveria bassiana</i> -- MI 7.16 EC (Naturalis-O)	2 tsp to 2 Tbsp	30 to 100 fl oz	4 hours	Three to 5 sprays needed for adequate control.

Insect or Related Pest	Pesticide, Classification, and Formulation†	Amount of Formulation per Gallon of Spray	Amount per 100 Gallons of Water	Minimum Interval Between Application	Precautions and Remarks
Aphids, continued	bendiocarb -- CA 76 WP (Dycarb, Ficam, Turcam)	1 Tbsp	12 to 20 oz	See product label	Avoid excessive runoff. Labeled for chrysanthemums only.
	bifenthrin -- PY 10 WP (Talstar) 7.9 F (Talstar) 0.5 A (PT 1800 Attain)	1 to 5 tsp $\frac{1}{2}$ to 2 $\frac{1}{2}$ tsp NA -- Aerosol	6.4 to 32 oz 2 to 10 fl oz NA -- Aerosol	See product label 12 hours See product label	Apply aerosol using a rate of 1 lb per 1,500 to 3,000 ft ² . Treat as late in the day as possible. Building should be vented before reentry.
	chlorpyrifos -- OP 20 ME (PT 1325 DuraGuard)	$\frac{1}{2}$ to 1 Tbsp	1 $\frac{1}{2}$ to 3 pt	12 hours	
	cyfluthrin -- PY 20 WP (Decathlon)	$\frac{1}{4}$ tsp	1.9 oz	See product label	
	diazinon -- OP 23 EC (Knox-Out)	1 to 2 Tbsp	3 to 6 pt	See product label	Diazinon should not be applied directly to open blooms; it is not labeled for use on poinsettias.
	dichlorvos -- OP 5 A (Vapona)	NA -- Smoke Generator	NA -- Smoke Generator	See product label	Dichlorvos may damage chrysanthemum varieties Shasta, Pink Champagne, and Nightingale.
	endosulfan -- CH 24.2 EC (Thiodan) 50 WP (Thiodan) 5 A (Thiodan)	2 tsp 1 Tbsp NA -- Smoke Generator	2 pt 1 lb NA -- Smoke Generator	24 hours 24 hours See product label	Apply as needed. Repeat applications may be necessary. Thiodan is phytotoxic to some varieties of geraniums and chrysanthemums.
	fenoxy carb -- IGR 0.6 A (PT 2100 Preclude)	NA -- Aerosol	NA -- Aerosol	See product label	Apply aerosol using a rate of 1 lb per 1,500 to 3,000 ft ² . Treat as late in the day as possible. Building should be vented before reentry.
	fenprothrin -- PY 30 EC (Tame)	$\frac{2}{3}$ tsp	10 $\frac{2}{3}$ fl oz	See product label	Can be used with $\frac{1}{3}$ lb per 100 gallons acephate (Orthene Turf, Tree and Ornamental 75 SP).
	fluvalinate -- PY 22.3 F (Mavrik)	$\frac{1}{8}$ to $\frac{5}{8}$ tsp	2 to 10 fl oz	See product label	Also labeled as a plant dip.
	horticultural oil -- Other 98.8 EC (Ultra Fine, Sun Spray)	2 $\frac{1}{2}$ to 5 Tbsp	1 to 2 gallons	4 hours	Oil is a contact killer of pests; thorough coverage is required. May cause foliar injury if sprayed during extremely humid conditions.
	imidacloprid -- Other 1 G (Marathon)	NA -- Granular	NA -- Granular	12 hours	Can be incorporated into substrate at 3 lb per yd ³ ; broadcast over flats at 9 to 15 oz per 1,000 ft ² ; or surface applied to pots (rate varies with pot size -- use $\frac{1}{3}$ tsp (1.3 grams) per 6" pot).
	kinoprene -- IGR 65.1 EC (Enstar II)	$\frac{1}{2}$ to $\frac{2}{3}$ tsp	5 to 10 fl oz	4 hours	
	lambda-cyhalothrin -- PY 10 WSP (Topcide)	----	1 to 4 packets	24 hours	
	lindane -- CH 25 WP (Lindane)	1 Tbsp	1 lb	See product label	
malathion -- OP 25 WP (Malathion) 57 EC (Malathion)	2 tsp 2 tsp	40 oz 2 pt	See product label See product label	Malathion may injure begonia, crassula, ferns, petunia, orchids, pansy, African violet, gloxinia, some red carnations, and some rose varieties.	

Insect or Related Pest	Pesticide, Classification, and Formulation†	Amount of Formulation per Gallon of Spray	Amount per 100 Gallons of Water	Minimum Interval Between Application	Precautions and Remarks
Aphids, continued	methiocarb -- CA 75 WP (Mesurool)	2 to 4 tsp	1 to 2 lb	24 hours	Up to 4 applications per season. Not for use in the landscape.
	naled -- OP 58 EC (Dibrom)	NA -- Vaporized	NA -- Vaporized	24 hours	Apply on steam pipes at rate of 1 fl oz per 10,000 ft ³ of greenhouse volume. Then heat pipes to 160 °F. Naled will corrode pipes with continued use. Naled vapor treatment may injure 'White Butterfly' and 'Golden Rapture' rose, 'Pink Champagne' chrysanthemums, wandering jew, poinsettias, and Dutchman's pipe.
	nicotine sulfate -- Other 40 EC (Nicotine Sulfate)	1 1/2 tsp	1 1/2 pt	See product label	Nicotine sulfate will damage young chrysanthemums and lilies.
	oxamyl -- CA 24 L (Vydate L) 10 G (Oxamyl)	2 to 4 tsp NA -- Granules	2 to 4 pt NA -- Granules	See product label See product label	Ornamental uses of Vydate L are being phased out. Apply 22 to 30 oz of Oxamyl granules per 1,000 ft ² . Equates into 1/8 tsp per 6" to 10" azalea-depth pot.
	permethrin -- PY 36.8 EC (Astro)	1/4 to 1/2 tsp	4 to 8 fl oz	24 hours	
	pyrethrins -- BO 6 EC (Pyrenone) 0.5 A (PT 1100 Pyrethrum)	1/8 to 1 1/2 tsp NA -- Aerosol	2 to 12 fl oz NA -- Aerosol	See product label See product label	Pyrethrins are not recommended for use directly on open blooms or on bracts showing color. Apply PT 1100 using a rate of 1 lb per 3,000 ft ² . Treat as late in the day as possible. Ventilate prior to reentry.
	resmethrin -- PY 24.3 EC (Resmethrin) 1 A (PT 1200 TR Resmethrin & PT 1200 DS Resmethrin)	1 tsp NA -- Aerosols	1 pt NA -- Aerosols	See product label See product label See product label	Apply PT 1200 TR using a rate of 1 lb per 1,500 to 3,000 ft ² . Treat as late in the day as possible. Ventilate prior to reentry. Apply PT 1200 DS using a release rate of 5 to 10 seconds per 100 ft ² .
	soap -- Other 25 EC (Olympic Insecticidal) 49 EC (M-Pede) 49.5 EC (Olympic Insecticidal)	2 1/2 to 5 fl oz 1 1/4 to 2 1/2 fl oz 2 1/2 fl oz	---- 1 to 2 gal 2 gal	See product label 12 hours 12 hours	Do not apply more than two times consecutively; too frequent of applications can cause foliar discoloration.
	sulfotepp -- OP 15 A (Dithio, Plantfume 103)	NA -- Smoke Generator	NA -- Smoke Generator	See product label	Consult product label for recommended rates.
Armyworms	acephate -- OP 75 SP (Orthene Turf, Tree and Ornamental) 3 A (PT 300 TR Orthene & PT 1300 DS Orthene)	1 to 2 tsp NA -- Aerosols	1/3 to 2/3 lb NA -- Aerosols	24 hours See product label	See aphids section for comments.
	azadirachtin -- BO 0.3 F (Margosan-O) 3 EC (Azatin XL) 4.5 EC (Neemazad)	2 1/2 to 5 tsp 2/3 to 1 tsp 1/8 to 1/4 tsp	40 to 80 fl oz 10 to 16 fl oz 2 1/4 to 4 1/2 fl oz	4 hours 4 hours 4 hours	
	<i>Bacillus thuringiensis</i> -- MI 3.2 AS (Dipel) 15 AS (Victory)	1 to 2 tsp 2 1/2 to 5 tsp	1 to 2 pt 40 to 80 fl oz	4 hours 4 hours	

Insect or Related Pest	Pesticide, Classification, and Formulation†	Amount of Formulation per Gallon of Spray	Amount per 100 Gallons of Water	Minimum Interval Between Application	Precautions and Remarks
Armyworms, continued	bifenthrin -- PY 10 WP (Talstar) 7.9 F (Talstar) 0.5 A (PT 1800 Attain)	1 to 5 tsp 1/2 to 2 1/2 tsp NA -- Aerosol	6.4 to 32 oz 2 to 10 fl oz NA -- Aerosol	See product label 12 hours See product label	See aphids section for comments.
	cyfluthrin -- PY 20 WP (Decathlon)	1/4 tsp	1.9 oz	See product label	
	diflubenzuron -- IGR 25 WSP (Adept)	----	4 to 8 packets	12 hours	Apply at a volume of 1 gallon of final solution per 200 ft ² .
	fluralinate -- PY 22.3 F (Mavrik)	1/8 to 5/8 tsp	2 to 10 fl oz	See product label	See aphids section for comments.
	lambda-cyhalothrin -- PY 10 WSP (Topcide)	----	1 to 4 packets	24 hours	
	pyrethrins -- BO 6 EC (Pyrenone) 0.5 A (PT 1100 Pyrethrum)	1/8 to 1 1/2 tsp NA -- Aerosol	2 to 12 fl oz NA -- Aerosol	See product label See product label	See aphids section for comments.
	resmethrin -- PY 24.3 EC (Resmethrin) 1 A (PT 1200 TR Resmethrin & PT 1200 DS Resmethrin)	1 tsp NA -- Aerosols	1 pt NA -- Aerosols	See product label See product label See product label	See aphids section for comments.
Beet Armyworm	azadirachtin -- BO 3 EC (Azatin XL)	2/3 to 1 tsp	10 to 16 fl oz	4 hours	
	chlorpyrifos -- OP 20 ME (PT 1325 DuraGuard)	1/2 to 1 Tbsp	1 1/2 to 3 pt	12 hours	
	fenpropathrin -- PY 30 EC (Tame)	2/3 tsp	10 ² /3 fl oz	See product label	See aphids section for comments.
	permethrin -- PY 36.8 EC (Astro)	1/4 to 1/2 tsp	4 to 8 fl oz	24 hours	
Broad Mite	bifenthrin -- PY 10 WP (Talstar) 7.9 F (Talstar) 0.5 A (PT 1800 Attain)	1 to 5 tsp 1/2 to 2 1/2 tsp NA -- Aerosol	6.4 to 32 oz 2 to 10 fl oz NA -- Aerosol	See product label 12 hours See product label	See aphids section for comments.
	dienochlor -- CH 50 WP (Pentac) 38 F (Pentac)	1 tsp 1/2 tsp	8 oz 8 fl oz	See product label See product label	Repeat pentac applications in 5 to 14 days for effective control.
	lambda-cyhalothrin -- PY 10 WSP (Topcide)	----	2 to 4 packets	24 hours	
	pyridaben -- DI 75 WP (Sanmite)	----	2 to 4 oz	12 hours	Do not exceed 10.5 oz of product per acre per application.
Brown Soft Scale	bendiocarb -- CA 76 WP (Dycarb, Ficam, Turcam)	3/4 Tbsp	5 1/2 oz	See product label	Avoid excessive runoff.
	bifenthrin -- PY 10 WP (Talstar) 7.9 F (Talstar) 0.5 A (PT 1800 Attain)	1 to 5 tsp 1/2 to 2 1/2 tsp NA -- Aerosol	6.4 to 32 oz 2 to 10 fl oz NA -- Aerosol	See product label 12 hours See product label	See aphids section for comments.
	lambda-cyhalothrin -- PY 10 WSP (Topcide)	----	2 to 4 packets	24 hours	
	sulfotepp -- OP 15 A (Dithio, Plantfume 103)	NA -- Smoke Generator	NA -- Smoke Generator	See product label	See aphids section for comments.

Insect or Related Pest	Pesticide, Classification, and Formulation†	Amount of Formulation per Gallon of Spray	Amount per 100 Gallons of Water	Minimum Interval Between Application	Precautions and Remarks
Cabbage Looper	acephate -- OP 75 SP (Orthene Turf, Tree and Ornamental) 3 A (PT 300 TR Orthene & PT 1300 DS Orthene)	1 to 2 tsp NA -- Aerosols	1/3 to 2/3 lb NA -- Aerosols	24 hours See product label	See aphids section for comments.
	azadirachtin -- BO 0.3 F (Margosan-O) 3 EC (Azatin EC) 4.5 EC (Neemazad)	2 1/2 to 5 tsp 1/2 tsp 1/8 to 1/4 tsp	40 to 80 fl oz 8 fl oz 2 1/4 to 4 1/2 fl oz	4 hours 4 hours 4 hours	
	<i>Bacillus thuringiensis</i> -- MI 3.2 AS (Dipel) 15 AS (Victory)	1 to 2 tsp 2 1/2 to 5 tsp	1 to 2 pt 40 to 80 fl oz	4 hours 4 hours	
	chlorpyrifos -- OP 20 ME (PT 1325 DuraGuard)	1/2 to 1 Tbsp	1 1/2 to 3 pt	12 hours	
	cyfluthrin -- PY 20 WP (Decathlon)	1/4 tsp	1.9 oz	See product label	
	diazinon -- OP 23 EC (Knox-Out)	1 to 2 Tbsp	3 to 6 pt	See product label	See aphids section for comments.
	dichlorvos -- OP 5 A (Vapona)	NA -- Smoke Generator	NA -- Smoke Generator	See product label	See aphids section for comments.
	fluvalinate -- PY 22.3 F (Mavrik)	1/8 to 5/8 tsp	2 to 10 fl oz	See product label	See aphids section for comments.
	lambda-cyhalothrin -- PY 10 WSP (Topcide)	----	1 to 4 packets	24 hours	
	naled -- OP 58 EC (Dibrom)	NA -- Vaporized	NA -- Vaporized	24 hours	See aphids section for comments.
	permethrin -- PY 36.8 EC (Astro)	1/4 to 1/2 tsp	4 to 8 fl oz	24 hours	
	pyrethrins -- BO 6 EC (Pyrenone) 0.5 A (PT 1100 Pyrethrum)	1/8 to 1 1/2 tsp NA -- Aerosol	2 to 12 fl oz NA -- Aerosol	See product label See product label	See aphids section for comments.
	resmethrin -- PY 24.3 EC (Resmethrin) 1 A (PT 1200 TR Resmethrin & PT 1200 DS Resmethrin)	1 tsp NA -- Aerosols	1 pt NA -- Aerosols	See product label See product label	See aphids section for comments.
	Caterpillars	azadirachtin -- BO 3 EC (Azatin XL) 4.5 EC (Neemazad)	2/3 to 1 tsp 1/8 to 1/4 tsp	10 to 16 fl oz 2 1/4 to 4 1/2 fl oz	4 hours 4 hours
<i>Beauveria bassiana</i> -- MI 7.16 EC (Naturalis-O)		2 tsp to 2 Tbsp	30 to 100 fl oz	4 hours	See aphids section for comments.
soap -- Other 25 EC (Olympic Insecticidal)		2 1/2 to 5 fl oz	----	See product label	See aphids section for comments.
Chrysanthemum Gall Midge	lindane -- CH 25 WP (Lindane)	1 Tbsp	1 lb	See product label	For use on chrysanthemums only. Weekly applications may be needed.
Crickets	chlorpyrifos -- OP 20 ME (PT 1325 DuraGuard)	1/2 to 1 Tbsp	1 1/2 to 3 pt	12 hours	
	cyfluthrin -- PY 20 WP (Decathlon)	1/4 tsp	1.9 oz	See product label	

Insect or Related Pest	Pesticide, Classification, and Formulation†	Amount of Formulation per Gallon of Spray	Amount per 100 Gallons of Water	Minimum Interval Between Application	Precautions and Remarks
Crickets, continued	lambda-cyhalothrin -- PY 10 WSP (Topcide)	----	1 to 4 packets	24 hours	
	pyrethrins -- BO 6 EC (Pyrenone) 0.5 A (PT 1100 Pyrethrum)	1/8 to 1 1/2 tsp NA -- Aerosol	2 to 12 fl oz NA -- Aerosol	See product label See product label	See aphids section for comments.
	soap -- Other 25 EC (Olympic Insecticidal) 49 EC (M-Pede) 49.5 EC (Olympic Insecticidal)	2 1/2 to 5 fl oz 1 1/4 to 2 1/2 fl oz 2 1/2 fl oz	---- 1 to 2 gal 2 gal	See product label 12 hours 12 hours	See aphids section for comments.
Cucumber Beetle	azadirachtin -- BO 3 EC (Azatin XL)	2/3 to 1 tsp	10 to 16 fl oz	4 hours	
	<i>Beauveria bassiana</i> -- MI 7.16 EC (Naturalis-O)	2 tsp to 2 Tbsp	30 to 100 fl oz	4 hours	See aphids section for comments.
	bifenthrin -- PY 10 WP (Talstar) 7.9 F (Talstar) 0.5 A (PT 1800 Attain)	1 to 5 tsp 1/2 to 2 1/2 tsp NA -- Aerosol	6.4 to 32 oz 2 to 10 fl oz NA -- Aerosol	See product label 12 hours See product label	See aphids section for comments.
	chlorpyrifos -- OP 20 ME (PT 1325 DuraGuard)	1/2 to 1 Tbsp	1 1/2 to 3 pt	12 hours	
	fluvalinate -- PY 22.3 F (Mavrik)	1/8 to 5/8 tsp	2 to 10 fl oz	See product label	See aphids section for comments.
	pyrethrins -- BO 6 EC (Pyrenone) 0.5 A (PT 1100 Pyrethrum)	1/8 to 1 1/2 tsp NA -- Aerosol	2 to 12 fl oz NA -- Aerosol	See product label See product label	See aphids section for comments.
	resmethrin -- PY 24.3 EC (Resmethrin) 1 A (PT 1200 TR Resmethrin & PT 1200 DS Resmethrin)	1 tsp NA -- Aerosols	1 pt NA -- Aerosols	See product label See product label See product label	See aphids section for comments.
	soap -- Other 25 EC (Olympic Insecticidal)	2 1/2 to 5 fl oz	----	See product label	See aphids section for comments.
Cutworms	acephate -- OP 75 SP (Orthene Turf, Tree and Ornamental) 3 A (PT 300 TR Orthene & PT 1300 DS Orthene)	1 to 2 tsp NA -- Aerosols	1/3 to 2/3 lb NA -- Aerosols	24 hours See product label	See aphids section for comments.
	azadirachtin -- BO 0.3 F (Margosan-O) 3 EC (Azatin EC)	2 1/2 to 5 tsp 1/2 tsp	40 to 80 fl oz 8 fl oz	4 hours 4 hours	
	<i>Bacillus thuringiensis</i> -- MI 3.2 AS (Dipel) 15 AS (Victory)	1 to 2 tsp 2 1/2 to 5 tsp	1 to 2 pt 40 to 80 fl oz	4 hours 4 hours	
	bifenthrin -- PY 10 WP (Talstar) 7.9 F (Talstar) 0.5 A (PT 1800 Attain)	1 to 5 tsp 1/2 to 2 1/2 tsp NA -- Aerosol	6.4 to 32 oz 2 to 10 fl oz NA -- Aerosol	See product label See product label See product label	See aphids section for comments.
	cyfluthrin -- PY 20 WP (Decathlon)	1/4 tsp	1.9 oz	See product label	
	fluvalinate -- PY 22.3 F (Mavrik)	1/8 to 5/8 tsp	2 to 10 fl oz	See product label	See aphids section for comments.

Insect or Related Pest	Pesticide, Classification, and Formulation†	Amount of Formulation per Gallon of Spray	Amount per 100 Gallons of Water	Minimum Interval Between Application	Precautions and Remarks
Cutworms, continued	lambda-cyhalothrin -- PY 10 WSP (Topcide)	----	1 to 4 packets	24 hours	
	pyrethrins -- BO 6 EC (Pyrenone) 0.5 A (PT 1100 Pyrethrum)	1/8 to 1 1/2 tsp NA -- Aerosol	2 to 12 fl oz NA -- Aerosol	See product label See product label	See aphids section for comments.
Cyclamen Mite	endosulfan -- CH 24.2 EC (Thiodan) 50 WP (Thiodan) 5 A (Thiodan)	2 tsp 1 Tbsp NA -- Smoke Generator	2 pt 1 lb NA -- Smoke Generator	24 hours 24 hours See product label	See aphids section for comments.
Earwigs	soap -- Other				
	49 EC (M-Pede) 49.5 EC (Olympic Insecticidal)	1 1/4 to 2 1/2 fl oz 2 1/2 fl oz	1 to 2 gal 2 gal	12 hours 12 hours	See aphids section for comments.
Fungus Gnats	azadirachtin -- BO 0.3 F (Margosan-O) 3 EC (Azatin XL)	2 1/2 to 5 tsp 1/2 tsp	40 to 80 fl oz 8 fl oz	4 hours 4 hours	
	<i>Bacillus thuringiensis</i> -- MI 3.2 AS (Dipel) 15 AS (Victory)	1 to 2 tsp 2 1/2 to 5 tsp	1 to 2 pt 40 to 80 fl oz	4 hours 4 hours	
	bifenthrin -- PY 10 WP (Talstar) 7.9 F (Talstar) 0.5 A (PT 1800 Attain)	1 to 5 tsp 1/2 to 2 1/2 tsp NA -- Aerosol	6.4 to 32 oz 2 to 10 fl oz NA -- Aerosol	See product label 12 hours See product label	See aphids section for comments.
	chlorpyrifos -- OP 20 ME (PT 1325 DuraGuard)	1/2 to 1 Tbsp	1 1/2 to 3 pt	12 hours	
	cyfluthrin -- PY 20 WP (Decathlon)	1/4 tsp	1.9 oz	See product label	
	diazinon -- OP 23 EC (Knox-Out)	1 to 2 Tbsp	3 to 6 pt	See product label	See aphids section for comments.
	diflubenzuron -- IGR 25 WSP (Adept)	----	2 packets	12 hours	Apply at a volume of 1 to 3 gallons of final solution per 100 ft ² .
	fenoxycarb -- IGR 25 WP (Precision)	1/2 tsp	4 oz	See product label	
	kinoprene -- IGR 65.1 EC (Enstar II)	1/2 to 2/3 tsp	5 to 10 fl oz	4 hours	Enstar II is for larvae control only.
	nematodes (<i>steinernema carpocapsae</i>) -- Other 17 AS (Exhibit)	----	----	See product label	Apply 1 gallon per 10,000 ft ² for larvae control. Make three applications, each 7 days apart for best results.
	oxamyl -- CA 24 L (Vydate L) 10 G (Oxamyl)	2 to 4 tsp NA -- Granules	2 to 4 pt NA -- Granules	See product label See product label	See aphids section for comments.
	permethrin -- PY 36.8 EC (Astro)	1/4 to 1/2 tsp	4 to 8 fl oz	24 hours	See beet armyworm for comments.
	pyrethrins -- BO 6 EC (Pyrenone) 0.5 A (PT 1100 Pyrethrum)	1/8 to 1 1/2 tsp NA -- Aerosol	2 to 12 fl oz NA -- Aerosol	See product label See product label	See aphids section for comments.

Insect or Related Pest	Pesticide, Classification, and Formulation†	Amount of Formulation per Gallon of Spray	Amount per 100 Gallons of Water	Minimum Interval Between Application	Precautions and Remarks
Fungus Gnats, continued	resmethrin -- PY 24.3 EC (Resmethrin) 1 A (PT 1200 TR Resmethrin & PT 1200 DS Resmethrin)	1 tsp NA -- Aerosols	1 pt NA -- Aerosols	See product label See product label See product label	See aphids section for comments.
	soap -- Other 25 EC (Olympic Insecticidal)	2 1/2 to 5 fl oz	----	See product label	See aphids section for comments.
Hemispherical Scale	bendiocarb -- CA 76 WP (Dycarb, Ficam, Turcam)	3/4 Tbsp	5 1/2 oz	See product label	Avoid excessive runoff.
Leafhoppers	azadirachtin -- BO 3 EC (Azatin XL)	2/3 to 1 tsp	10 to 16 fl oz	4 hours	
	<i>Beauveria bassiana</i> -- MI 7.16 EC (Naturalis-O)	2 tsp to 2 Tbsp	30 to 100 fl oz	4 hours	See aphids section for comments.
	bifenthrin -- PY 10 WP (Talstar) 7.9 F (Talstar) 0.5 A (PT 1800 Attain)	1 to 5 tsp 1/2 to 2 1/2 tsp NA -- Aerosol	6.4 to 32 oz 2 to 10 fl oz NA -- Aerosol	See product label 12 hours See product label	See aphids section for comments.
	chlorpyrifos -- OP 20 ME (PT 1325 DuraGuard)	1/2 to 1 Tbsp	1 1/2 to 3 pt	12 hours	
	cyfluthrin -- PY 20 WP (Decathlon)	1/4 tsp	1.9 oz	See product label	
	fenpropathrin -- PY 30 EC (Tame)	1/3 to 2/3 tsp	5 1/3 to 10 2/3 fl oz	See product label	See aphids section for comments.
	lambda-cyhalothrin -- PY 10 WSP (Topcide)	----	1 to 4 packets	24 hours	
	malathion -- OP 25 WP (Malathion) 57 EC (Malathion)	2 tsp 2 tsp	40 oz 2 pt	See product label See product label	See aphids section for comments.
	permethrin -- PY 36.8 EC (Astro)	1/4 to 1/2 tsp	4 to 8 fl oz	24 hours	See beet armyworm for comments.
	pyrethrins -- BO 6 EC (Pyrenone) 0.5 A (PT 1100 Pyrethrum)	1/8 to 1 1/2 tsp NA -- Aerosol	2 to 12 fl oz NA -- Aerosol	See product label See product label	See aphids section for comments.
	resmethrin -- PY 24.3 EC (Resmethrin) 1 A (PT 1200 TR Resmethrin & PT 1200 DS Resmethrin)	1 tsp NA -- Aerosols	1 pt NA -- Aerosols	See product label See product label See product label	See aphids section for comments.
	soap -- Other 25 EC (Olympic Insecticidal) 49.5 EC (Olympic Insecticidal)	2 1/2 to 5 fl oz 2 1/2 fl oz	---- 2 gal	See product label 12 hours	See aphids section for comments.
	Leafminers	abamectin B ₁ -- Other 2 EC (Avid)	1/2 tsp	8 fl oz	See product label
acephate -- OP 75 SP (Orthene Turf, Tree and Ornamental) 3 A (PT 300 TR Orthene & PT 1300 DS Orthene)		1 to 2 tsp NA -- Aerosols	1/3 to 2/3 lb NA -- Aerosols	24 hours See product label	See aphids section for comments.

Insect or Related Pest	Pesticide, Classification, and Formulation†	Amount of Formulation per Gallon of Spray	Amount per 100 Gallons of Water	Minimum Interval Between Application	Precautions and Remarks
Leafminers, continued	azadirachtin -- BO 0.3 F (Margosan-O) 3 EC (Azatin XL) 4.5 EC (Neemazad)	2 1/2 to 5 tsp 2/3 to 1 tsp 1/8 to 1/4 tsp	40 to 80 fl oz 10 to 16 fl oz 2 1/4 to 4 1/2 fl oz	4 hours 4 hours 4 hours	
	bendiocarb -- CA 76 WP (Dycarb, Ficam, Turcam)	3/4 Tbsp	5 1/2 oz	See product label	Avoid excessive runoff.
	bifenthrin -- PY 10 WP (Talstar) 7.9 F (Talstar) 0.5 A (PT 1800 Attain)	1 to 5 tsp 1/2 to 2 1/2 tsp NA -- Aerosol	6.4 to 32 oz 2 to 10 fl oz NA -- Aerosol	See product label 12 hours See product label	See aphids section for comments.
	chlorpyrifos -- OP 20 ME (PT 1325 DuraGuard)	1/2 to 1 Tbsp	1 1/2 to 3 pt	12 hours	
	cyromazine -- IGR 75 WP (Citation)	----	2 2/3 oz	See product label	Must wear protective clothing when harvesting. Labeled for chrysanthemum only.
	diazinon -- OP 23 EC (Knox-Out)	1 to 2 Tbsp	3 to 6 pt	See product label	See aphids section for comments.
	dichlorvos -- OP 5 A (Vapona)	NA -- Smoke Generator	NA -- Smoke Generator	See product label	See aphids section for comments.
	malathion -- OP 25 WP (Malathion) 57 EC (Malathion)	2 tsp 2 tsp	40 oz 2 pt	See product label See product label	See aphids section for comments.
	oxamyl -- CA 24 L (Vydate L) 10 G (Oxamyl)	2 to 4 tsp NA -- Granules	2 to 4 pt NA -- Granules	See product label See product label	See aphids section for comments.
	permethrin -- PY 36.8 EC (Astro)	1/4 to 1/2 tsp	4 to 8 fl oz	24 hours	See beet armyworm for comments.
Leaf Rollers	acephate -- OP 75 SP (Orthene Turf, Tree and Ornamental) 3 A (PT 300 TR Orthene & PT 1300 DS Orthene)	1 to 2 tsp NA -- Aerosols	1/3 to 2/3 lb NA -- Aerosols	24 hours See product label	See aphids section for comments.
	azadirachtin -- BO 0.3 F (Margosan-O) 3 EC (Azatin XL)	2 1/2 to 5 tsp 2/3 to 1 tsp	40 to 80 fl oz 10 to 16 fl oz	4 hours 4 hours	
	bifenthrin -- PY 10 WP (Talstar) 7.9 F (Talstar) 0.5 A (PT 1800 Attain)	1 to 5 tsp 1/2 to 2 1/2 tsp NA -- Aerosol	6.4 to 32 oz 2 to 10 fl oz NA -- Aerosol	See product label See product label See product label	See aphids section for comments.
	cyfluthrin -- PY 20 WP (Decathlon)	1/4 tsp	1.9 oz	See product label	
	diazinon -- OP 23 EC (Knox-Out)	1 to 2 Tbsp	3 to 6 pt	See product label	See aphids section for comments.
	lambda-cyhalothrin -- PY 10 WSP (Topcide)	----	1 to 4 packets	24 hours	
	naled -- OP 58 EC (Dibrom)	NA -- Vaporized	NA -- Vaporized	24 hours	See aphids section for comments.
	pyrethrins -- BO 6 EC (Pyreneone)	1/8 to 1 1/2 tsp	2 to 12 fl oz	See product label	See aphids section for comments.

Insect or Related Pest	Pesticide, Classification, and Formulation†	Amount of Formulation per Gallon of Spray	Amount per 100 Gallons of Water	Minimum Interval Between Application	Precautions and Remarks
Leaf Rollers, continued	resmethrin -- PY 24.3 EC (Resmethrin) 1 A (PT 1200 TR Resmethrin & PT 1200 DS Resmethrin)	1 tsp NA -- Aerosols	1 pt NA -- Aerosols	See product label See product label See product label	See aphids section for comments.
Mealybugs	acephate -- OP 75 SP (Orthene Turf, Tree and Ornamental, Pro 75) 3 A (PT 300 TR Orthene & PT 1300 DS Orthene)	1 to 2 tsp NA -- Aerosols	1/3 to 2/3 lb NA -- Aerosols	24 hours See product label	See aphids section for comments.
	azadirachtin -- BO 0.3 F (Margosan-O) 3 EC (Azatin XL) 4.5 EC (Neemazad)	2 1/2 to 5 tsp 2/3 tsp 1/8 to 1/4 tsp	40 to 80 fl oz 10 to 16 fl oz 2 1/4 to 4 1/2 fl oz	4 hours 4 hours 4 hours	
	bendiocarb -- CA 76 WP (Dycarb, Ficam, Turcam)	3/4 Tbsp	5 1/2 oz	See product label	Avoid excessive runoff.
	bifenthrin -- PY 10 WP (Talstar) 7.9 F (Talstar) 0.5 A (PT 1800 Attain)	1 to 5 tsp 1/2 to 2 1/2 tsp NA -- Aerosol	6.4 to 32 oz 2 to 10 fl oz NA -- Aerosol	See product label See product label See product label	See aphids section for comments.
	chlorpyrifos -- OP 20 ME (PT 1325 DuraGuard)	1/2 to 1 Tbsp	1 1/2 to 3 pt	12 hours	
	cyfluthrin -- PY 20 WP (Decathlon)	1/4 tsp	1.9 oz	See product label	
	diazinon -- OP 23 EC (Knox-Out)	1 to 2 Tbsp	3 to 6 pt	See product label	See aphids section for comments.
	dichlorvos -- OP 81 EC (Vapona) 5 A (Vapona)	---- NA -- Smoke Generator	---- NA -- Smoke Generator	See product label See product label	The 81 EC product is for use on African violets and begonias only. Vaporize 1 fl oz per 10,000 ft ³ . Ventilate thoroughly after two hours post application. See aphids section for comments on the 5 A product.
	fenpropathrin -- PY 30 EC (Tame)	2/3 tsp	10 2/3 fl oz	See product label	See aphids section for comments.
	fluvalinate -- PY 22.3 F (Mavrik)	1/8 to 5/8 tsp	2 to 10 fl oz	See product label	See aphids section for comments.
	horticultural oil -- Other 98.8 EC (Ultra Fine, Sun Spray)	2 1/2 to 5 Tbsp	1 to 2 gallons	4 hours	See aphids section for comments.
	imidacloprid -- Other 1 G (Marathon) 60 WP (Marathon)	NA -- Granular NA -- Drench	NA -- Granular NA -- Drench	12 hours 12 hours	See aphids section for comments. Follow label directions.
	kinoprene -- IGR 65.1 EC (Enstar II)	1/2 to 2/3 tsp	5 to 10 fl oz	4 hours	
	lambda-cyhalothrin -- PY 10 WSP (Topcide)	----	2 to 4 packets	24 hours	
	malathion -- OP 25 WP (Malathion) 57 EC (Malathion)	2 tsp 2 tsp	40 oz 2 pt	See product label See product label	See aphids section for comments.
	naled -- OP 58 EC (Dibrom)	NA -- Vaporized	NA -- Vaporized	24 hours	See aphids section for comments.

Insect or Related Pest	Pesticide, Classification, and Formulation†	Amount of Formulation per Gallon of Spray	Amount per 100 Gallons of Water	Minimum Interval Between Application	Precautions and Remarks
Mealybugs, continued	oxamyl -- CA 24 L (Vydate L) 10 G (Oxamyl)	2 to 4 tsp NA -- Granules	2 to 4 pt NA -- Granules	See product label See product label	See aphids section for comments.
	permethrin -- PY 36.8 EC (Astro)	1/4 to 1/2 tsp	4 to 8 fl oz	24 hours	See beet armyworm for comments.
	pyrethrins -- BO 6 EC (Pyrenone) 0.5 A (PT 1100 Pyrethrum)	1/8 to 1 1/2 tsp NA -- Aerosol	2 to 12 fl oz NA -- Aerosol	See product label See product label	See aphids section for comments.
	resmethrin -- PY 24.3 EC (Resmethrin) 1 A (PT 1200 TR Resmethrin & PT 1200 DS Resmethrin)	1 tsp NA -- Aerosols	1 pt NA -- Aerosols	See product label See product label See product label	See aphids section for comments.
	soap -- Other 25 EC (Olympic Insecticidal) 49 EC (M-Pede) 49.5 EC (Olympic Insecticidal)	2 1/2 to 5 fl oz 1 1/4 to 2 1/2 fl oz 2 1/2 fl oz	---- 1 to 2 gal 2 gal	See product label 12 hours 12 hours	See aphids section for comments.
	sulfotepp -- OP 15 A (Dithio, Plantfume 103)	NA -- Smoke Generator	NA -- Smoke Generator	See product label	See aphids section for comments.
Millipedes	malathion -- OP 25 WP (Malathion) 57 EC (Malathion)	2 tsp 2 tsp	40 oz 2 pt	See product label See product label	See aphids section for comments.
Mites	<i>Beauveria bassiana</i> -- MI 7.16 EC (Naturalis-O)	2 tsp to 2 Tbsp	30 to 100 fl oz	4 hours	See aphids section for comments.
	diazinon -- OP 23 EC (Knox-Out)	1 to 2 Tbsp	3 to 6 pt	See product label	See aphids section for comments.
	dicofol -- CH 35 WP (Kelthane 35) 50 WP (Kelthane T/O)	1 1/2 Tbsp 1 Tbsp	1 to 1 1/3 lb 1/2 to 1 lb	12 hours 12 hours	
	fenpropathrin -- PY 30 EC (Tame)	1/2 to 1 tsp	10 2/3 fl oz	See product label	See aphids section for comments.
	fluvalinate -- PY 22.3 F (Mavrik)	1/8 to 5/8 tsp	2 to 10 fl oz	See product label	See aphids section for comments.
	methiocarb -- CA 75 WP (Mesuro)	2 to 4 tsp	1 to 2 lb	24 hours	See aphids section for comments.
	soap -- Other 25 EC (Olympic Insecticidal) 49.5 EC (Olympic Insecticidal)	2 1/2 to 5 fl oz 2 1/2 fl oz	---- 2 gal	See product label 12 hours	See aphids section for comments.
Moths	chlorpyrifos -- OP 22.5 EC (Dursban Pro)	1/2 to 1 Tbsp	1 1/2 to 3 pt	12 hours	
Plant Bugs	bifenthrin -- PY 10 WP (Talstar) 7.9 F (Talstar) 0.5 A (PT 1800 Attain)	1 to 5 tsp 1/2 to 2 1/2 tsp NA -- Aerosol	6.4 to 32 oz 2 to 10 fl oz NA -- Aerosol	See product label 12 hours See product label	See aphids section for comments.
	cyfluthrin -- PY 20 WP (Decathlon)	1/4 tsp	1.9 oz	See product label	
	fluvalinate -- PY 22.3 F (Mavrik)	1/8 to 5/8 tsp	2 to 10 fl oz	See product label	See aphids section for comments.

Insect or Related Pest	Pesticide, Classification, and Formulation†	Amount of Formulation per Gallon of Spray	Amount per 100 Gallons of Water	Minimum Interval Between Application	Precautions and Remarks
Plant Bugs, continued	lambda-cyhalothrin -- PY 10 WSP (Topcide)	----	1 to 4 packets	24 hours	
	resmethrin -- PY 24.3 EC (Resmethrin) 1 A (PT 1200 TR Resmethrin & PT 1200 DS Resmethrin)	1 tsp NA -- Aerosols	1 pt NA -- Aerosols	See product label See product label See product label	See aphids section for comments.
	soap -- Other 25 EC (Olympic Insecticidal) 49.5 EC (Olympic Insecticidal)	2 1/2 to 5 fl oz 2 1/2 fl oz	---- 2 gal	See product label 12 hours	See aphids section for comments.
Scale Insects	acephate -- OP 75 SP (Orthene Turf, Tree and Ornamental, Pro 75) 3 A (PT 300 TR Orthene & PT 1300 DS Orthene)	1 to 2 tsp NA -- Aerosols	1/3 to 2/3 lb NA -- Aerosols	24 hours See product label	See aphids section for comments.
	azadirachtin -- BO 3 EC (Azatin XL)	1/2 tsp	8 fl oz	4 hours	
	bifenthrin -- PY 0.5 A (PT 1800 Attain)	NA -- Aerosol	NA -- Aerosol	See product label	See aphids section for comments.
	chlorpyrifos -- OP 20 ME (PT 1325 DuraGuard)	1/2 to 1 Tbsp	1 1/2 to 3 pt	12 hours	
	cyfluthrin -- PY 20 WP (Decathlon)	1/4 tsp	1.9 oz	See product label	
	diazinon -- OP 23 EC (Knox-Out)	1 to 2 Tbsp	3 to 6 pt	See product label	Diazinon should not be applied directly to open blooms; it is not labeled for use on poinsettias.
	fenoxycarb -- IGR 25 WP (Precision) 0.6 A (PT 2100 Preclude)	1/2 tsp NA -- Aerosol	4 oz NA -- Aerosol	See product label See product label	See aphids section for comments.
	horticultural oil -- Other 98.8 EC (Ultra Fine, Sun Spray)	2 1/2 to 5 Tbsp	1 to 2 gallons	4 hours	See aphids section for comments.
	imidacloprid -- Other 60 WP (Marathon)	NA -- Drench	NA -- Drench	12 hours	Follow label directions.
	kinoprene -- IGR 65.1 EC (Enstar II)	1/2 to 2/3 tsp	5 to 10 fl oz	4 hours	
	lambda-cyhalothrin -- PY 10 WSP (Topcide)	----	1 to 4 packets	24 hours	
	oxamyl -- CA 24 L (Vydate L) 10 G (Oxamyl)	2 to 4 tsp NA -- Granules	2 to 4 pt NA -- Granules	See product label See product label	See aphids section for comments.
	pyrethrins -- BO 6 EC (Pyrenone) 0.5 A (PT 1100 Pyrethrum)	1/8 to 1 1/2 tsp NA -- Aerosol	2 to 12 fl oz NA -- Aerosol	See product label See product label	See aphids section for comments.
	soap -- Other 25 EC (Olympic Insecticidal) 49 EC (M-Pede) 49.5 EC (Olympic Insecticidal)	2 1/2 to 5 fl oz 1 1/4 to 2 1/2 fl oz 2 1/2 fl oz	---- 1 to 2 gal 2 gal	See product label 12 hours 12 hours	See aphids section for comments.
	Shore Flies	azadirachtin -- BO 3 EC (Azatin XL)	2/3 to 1 tsp	10 to 16 fl oz	4 hours

Insect or Related Pest	Pesticide, Classification, and Formulation†	Amount of Formulation per Gallon of Spray	Amount per 100 Gallons of Water	Minimum Interval Between Application	Precautions and Remarks
Shore Flies. continued	diflubenzuron -- IGR 25 WSP (Adept)	----	2 packets	12 hours	Apply at a volume of 1 to 3 gallons of final solution per 100 ft ² .
	fenoxycarb -- IGR 25 WP (Precision)	½ tsp	4 oz	See product label	
Slugs and Snails	metaldehyde -- Other 4 P (Deadline Bullets and Granules) 5 P (Snarol)	NA -- Pelleted bait NA -- Pelleted bait	NA -- Pelleted bait NA -- Pelleted bait	See product label See product label	More than one application usually necessary. Follow label directions for application rates.
	methiocarb -- CA 75 WP (Mesurrol)	8 tsp	4 lb	24 hours	See aphids section for comments.
Sowbugs	cyfluthrin -- PY 20 WP (Decathlon)	¼ tsp	1.9 oz	See product label	
	lindane -- CH 25 WP (Lindane)	1 Tbsp	1 lb	See product label	Apply 1 gallon of spray per 150 ft ² . Repeat applications every 7 to 10 days may be required for effective control.
	malathion -- OP 25 WP (Malathion) 57 EC (Malathion)	2 tsp 2 tsp	40 oz 2 pt	See product label See product label	See aphids section for comments.
	resmethrin -- PY 1 A (PT 1200 TR Resmethrin & PT 1200 DS Resmethrin)	NA -- Aerosols	NA -- Aerosols	See product label See product label	See aphids section for comments.
Spider Mites	abamectin B ₁ -- Other 2 EC (Avid)	¼ tsp	4 fl oz	See product label	Do not use on ferns or conifers.
	bifenthrin -- PY 10 WP (Talstar) 7.9 F (Talstar) 0.5 A (PT 1800 Attain)	1 to 5 tsp ½ to 2 ½ tsp NA -- Aerosol	6.4 to 32 oz 2 to 10 fl oz NA -- Aerosol	See product label 12 hours See product label	See aphids section for comments.
	chlorpyrifos -- OP 20 ME (PT 1325 DuraGuard)	½ to 1 Tbsp	1 ½ to 3 pt	12 hours	
	dichlorvos -- OP 5 A (Vapona)	NA -- Smoke Generator	NA -- Smoke Generator	See product label	See aphids section for comments.
	dicofol -- CH 35 WP (Kelthane 35) 50 WP (Kelthane T/O)	1 ½ Tbsp 1 Tbsp	1 to 1 ½ lb ½ to 1 lb	See product label See product label	
	dienochlor -- CH 50 WP (Pentac) 38 F (Pentac)	1 tsp ½ tsp	8 oz 8 fl oz	See product label See product label	Repeat pentac applications in 5 to 14 days for effective control.
	fluvalinate -- PY 22.3 F (Mavrik)	⅛ to ⅝ tsp	2 to 10 fl oz	See product label	See aphids section for comments.
	horticultural oil -- Other 98.8 EC (Ultra Fine, Sun Spray)	2 ½ to 5 Tbsp	1 to 2 gallons	4 hours	See aphids section for comments.
	lambda-cyhalothrin -- PY 10 WSP (Topcide)	----	2 to 4 packets	24 hours	
	naled -- OP 58 EC (Dibrom)	NA -- Vaporized	NA -- Vaporized	24 hours	See aphids section for comments.

Insect or Related Pest	Pesticide, Classification, and Formulation†	Amount of Formulation per Gallon of Spray	Amount per 100 Gallons of Water	Minimum Interval Between Application	Precautions and Remarks
Spider Mites, continued	oxamyl -- CA 24 L (Vydate L) 10 G (Oxamyl)	2 to 4 tsp NA -- Granules	2 to 4 pt NA -- Granules	See product label See product label	See aphids section for comments.
	soap -- Other 25 EC (Olympic Insecticidal) 49 EC (M-Pede) 49.5 EC (Olympic Insecticidal)	2 1/2 to 5 fl oz 1 1/4 to 2 1/2 fl oz 2 1/2 fl oz	---- 1 to 2 gal 2 gal	See product label 12 hours 12 hours	See aphids section for comments.
Spittlebugs	cyfluthrin -- PY 20 WP (Decathlon)	1/4 tsp	1.9 oz	See product label	
Spittlebugs, continued	resmethrin -- PY 24.3 EC (Resmethrin)	1 tsp	1 pt	See product label	See aphids section for comments.
	soap -- Other 49 EC (Insecticidal, M-Pede)	2 1/2 fl oz	7 1/2 qt	12 hours	See aphids section for comments.
Silverleaf (Sweetpotato) Whitefly	azadirachtin -- BO 0.3 F (Margosan-O) 3 EC (Azatin XL)	5 tsp 2/3 to 1 tsp	80 fl oz 10 to 16 fl oz	4 hours 4 hours	
	fenpropathrin -- PY 30 EC (Tame)	1/2 to 1 tsp	10 2/3 fl oz	See product label	See aphids section for comments.
Thrips	acephate -- OP 75 SP (Orthene Turf, Tree and Ornamental, Pro 75) 3 A (PT 300 TR Orthene & PT 1300 DS Orthene)	1 to 2 tsp NA -- Aerosols	1/3 to 2/3 lb NA -- Aerosols	24 hours See product label	See aphids section for comments.
	azadirachtin -- BO 0.3 F (Margosan-O) 3 EC (Azatin XL) 4.5 EC (Neemazad)	2 1/2 to 5 tsp 2/3 to 1 tsp 1/8 to 1/4 tsp	40 to 80 fl oz 10 to 16 fl oz 2 1/4 to 4 1/2 fl oz	4 hours 4 hours 4 hours	
	<i>Beauveria bassiana</i> -- MI 7.16 EC (Naturalis-O)	2 tsp to 2 Tbsp	30 to 100 fl oz	4 hours	See aphids section for comments.
	bendiocarb -- CA 76 WP (Dycarb, Ficam, Turcam)	1 1/2 tsp	12 to 20 oz	See product label	Avoid excessive runoff.
	bifenthrin -- PY 10 WP (Talstar) 7.9 F (Talstar) 0.5 A (PT 1800 Attain)	1 to 5 tsp 1/2 to 2 1/2 tsp NA -- Aerosol	6.4 to 32 oz 2 to 10 fl oz NA -- Aerosol	See product label See product label See product label	Apply aerosol using a rate of 1 lb per 1,500 to 3,000 ft ² . Treat as late in the day as possible. Building should be vented before reentry.
	chlorpyrifos -- OP 20 ME (PT 1325 DuraGuard)	1/2 to 1 Tbsp	1 1/2 to 3 pt	12 hours	
	cyfluthrin -- PY 20 WP (Decathlon)	1/4 tsp	1.9 oz	See product label	
	diazinon -- OP 23 EC (Knox-Out)	1 to 2 Tbsp	3 to 6 pt	See product label	Diazinon should not be applied directly to open blooms; it is not labeled for use on poinsettias.
	fluralinate -- PY 22.3 F (Mavrik)	1/8 to 5/8 tsp	2 to 10 fl oz	See product label	See aphids section for comments.
	horticultural oil -- Other 98.8 EC (Ultra Fine, Sun Spray)	2 1/2 to 5 Tbsp	1 to 2 gallons	4 hours	See aphids section for comments.
	lambda-cyhalothrin -- PY 10 WSP (Topcide)	----	1 to 4 packets	24 hours	

Insect or Related Pest	Pesticide, Classification, and Formulation†	Amount of Formulation per Gallon of Spray	Amount per 100 Gallons of Water	Minimum Interval Between Application	Precautions and Remarks
Thrips, continued	lindane -- CH 25 WP (Lindane)	1 Tbsp	1 lb	See product label	Apply 1 gallon of spray per 150 ft ² . Repeat applications every 7 to 10 days may be required for effective control.
	malathion -- OP 25 WP (Malathion) 57 EC (Malathion)	2 tsp 2 tsp	40 oz 2 pt	See product label See product label	See aphids section for comments.
	oxamyl -- CA 24 L (Vydate L) 10 G (Oxamyl)	2 to 4 tsp NA -- Granules	2 to 4 pt NA -- Granules	See product label See product label	See aphids section for comments.
	pyrethrins -- BO 6 EC (Pyrethone)	1/8 to 1 1/2 tsp	2 to 12 fl oz	See product label	See aphids section for comments.
	resmethrin -- PY 24.3 EC (Resmethrin) 1 A (PT 1200 TR Resmethrin & PT 1200 DS Resmethrin)	1 tsp NA -- Aerosols	1 pt NA -- Aerosols	See product label See product label	See aphids section for comments.
	sulfotepp -- OP 15 A (Dithio, Plantfume 103)	NA -- Smoke Generator	NA -- Smoke Generator	See product label	See aphids section for comments.
Twospotted Spider Mite	fenpropathrin -- PY 30 EC (Tame)	1/2 to 1 tsp	10 2/3 fl oz	See product label	See aphids section for comments.
	fluvalinate -- PY 22.3 F (Mavrik)	1/8 to 5/8 tsp	2 to 10 fl oz	See product label	See aphids section for comments.
	pyridaben -- DI 75 WP (Sanmite)	----	2 to 4 oz	12 hours	See broad mite section for comments.
Western Flower Thrips	acephate -- OP 75 SP (Orthene Turf, Tree and Ornamental)	1 to 2 tsp	1/3 to 2/3 lb	24 hours	See aphids section for comments.
	azadirachtin -- BO 3 EC (Azatin XL)	3/4 to 1 tsp	12 to 16 fl oz	4 hours	
	fomentate hydrochloride -- CA 92 SP (Carzol)	1 tsp	8 oz	24 hours	Local use registration in North Carolina.
	methiocarb -- CA 75 WP (Gowan Mesurol)	---	1/2 to 1 lb	24 hours	
Whiteflies	acephate -- OP 75 SP (Orthene Turf, Tree and Ornamental, Pro 75) 3 A (PT 300 TR Orthene & PT 1300 DS Orthene)	1 to 2 tsp NA -- Aerosols	1/3 to 2/3 lb NA -- Aerosols	24 hours See product label	See aphids section for comments.
	azadirachtin -- BO 0.3 F (Margosan-O) 3 EC (Azatin XL) 4.5 EC (Neemazad)	2 1/2 to 5 tsp 2/3 to 1 tsp 1/8 to 1/4 tsp	40 to 80 fl oz 10 to 16 fl oz 2 1/4 to 4 1/2 fl oz	4 hours 4 hours 4 hours	
	<i>Beauveria bassiana</i> -- MI 7.16 EC (Naturalis-O)	2 tsp to 2 Tbsp	30 to 100 fl oz	4 hours	See aphids section for comments.
	bendiocarb -- CA 76 WP (Dycarb, Ficam, Turcam)	3/4 tsp	5 1/2 oz	See product label	See aphids section for comments.

Insect or Related Pest	Pesticide, Classification, and Formulation†	Amount of Formulation per Gallon of Spray	Amount per 100 Gallons of Water	Minimum Interval Between Application	Precautions and Remarks
Whiteflies, continued	bifenthrin -- PY 10 WP (Talstar) 7.9 F (Talstar) 0.5 A (PT 1800 Attain)	1 to 5 tsp 1/2 to 2 1/2 tsp NA -- Aerosol	6.4 to 32 oz 2 to 10 fl oz NA -- Aerosol	See product label 12 hours See product label	See aphids section for comments.
	chlorpyrifos -- OP 20 ME (PT 1325 DuraGuard)	1/2 to 1 Tbsp	1 1/2 to 3 pt	12 hours	
	cyfluthrin -- PY 20 WP (Decathlon)	1/4 tsp	1.9 oz	See product label	
	diazinon -- OP 23 EC (Knox-Out)	1 to 2 Tbsp	3 to 6 pt	See product label	See aphids section for comments.
	dichlorvos -- OP 5 A (Vapona)	NA -- Smoke Generator	NA -- Smoke Generator	See product label See product label	See aphids section for comments.
	diflubenzuron -- IGR 25 WSP (Adept)	----	2 packets	12 hours	Apply at a volume of 1 gallon of final solution per 200 ft ² .
	endosulfan -- CH 24.2 EC (Thiodan) 50 WP (Thiodan) 5 A (Thiodan)	2 tsp 1 Tbsp NA -- Smoke Generator	2 pt 1 lb NA -- Smoke Generator	24 hours 24 hours See product label	See aphids section for comments.
	fenoxycarb -- IGR 0.6 A (PT 2100 Preclude)	NA -- Aerosol	NA -- Aerosol	See product label	See aphids section for comments.
	fenpropathrin -- PY 30 EC (Tame)	2/3 tsp	10 2/3 fl oz	See product label	See aphids section for comments.
	fluralinate -- PY 22.3 F (Mavrik)	1/8 to 5/8 tsp	2 to 10 fl oz	See product label	See aphids section for comments.
	horticultural oil -- Other 98.8 EC (Ultra Fine, Sun Spray)	2 1/2 to 5 Tbsp	1 to 2 gallons	4 hours	See aphids section for comments.
	imidacloprid -- Other 1 G (Marathon) 60 WP (Marathon)	NA -- Granular NA -- Drench	NA -- Granular NA -- Drench	12 hours 12 hours	See aphids section for comments. Follow label directions.
	kinoprene -- IGR 65.1 EC (Enstar II)	1/2 to 2/3 tsp	5 to 10 fl oz	4 hours	
	lambda-cyhalothrin -- PY 10 WSP (Topcide)	----	2 to 4 packets	24 hours	
	naled -- OP 58 EC (Dibrom)	NA -- Vaporized	NA -- Vaporized	24 hours	See aphids section for comments.
	oxamyl -- CA 24 L (Vydate L) 10 G (Oxamyl)	2 to 4 tsp NA -- Granules	2 to 4 pt NA -- Granules	See product label See product label	See aphids section for comments.
	permethrin -- PY 36.8 EC (Astro)	1/4 to 1/2 tsp	4 to 8 fl oz	24 hours	
	pyrethrins -- BO 6 EC (Pyrenone) 0.5 A (PT 1100 Pyrethrum)	1/8 to 1 1/2 tsp NA -- Aerosol	2 to 12 fl oz NA -- Aerosol	See product label See product label	See aphids section for comments.
	pyridaben -- DI 75 WP (Sanmite)	----	4 to 6 oz	12 hours	See broad mite section for comments.

Insect or Related Pest	Pesticide, Classification, and Formulation†	Amount of Formulation per Gallon of Spray	Amount per 100 Gallons of Water	Minimum Interval Between Application	Precautions and Remarks
Whiteflies, continued	resmethrin -- PY 24.3 EC (Resmethrin) 1 A (PT 1200 TR Resmethrin & PT 1200 DS Resmethrin)	1 tsp NA -- Aerosols	1 pt NA -- Aerosols	See product label See product label See product label	See aphids section for comments.
	soap -- Other 25 EC (Olympic Insecticidal) 49 EC (M-Pede) 49.5 EC (Olympic Insecticidal)	2 1/2 to 5 fl oz 1 1/4 to 2 1/2 fl oz 2 1/2 fl oz	---- 1 to 2 gal 2 gal	See product label 12 hours 12 hours	See aphids section for comments.
	sulfotepp -- OP 15 A (Dithio, Plantfume 103)	NA -- Smoke Generator	NA -- Smoke Generator	See product label	See aphids section for comments.

Don't Miss The 1997 NC State University Poinsettia Open House

Thursday, 4 December 1997

9:00 AM to 3:00 PM

**Held at the
Horticulture Research Laboratory
4301 Beryl Road
Raleigh, NC**



- See 73 cultivars of poinsettias and how they compare to each other under North Carolina growing conditions.
- Enjoy world-class complimentary refreshments.
- Don't let this opportunity pass you by; you can't afford to miss it!!!
- Contact Doug Bailey at 919.515.1195 for further information.

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**NORTH CAROLINA
COMMERCIAL FLOWER GROWERS' BULLETIN**

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