



DISEASE CONTROL Annual Flowers, Acalypha–Gloxinia

Commercial Ornamentals: Disease Control—Annuals Flowers, Acalypha–Gloxinia

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
ACALYPHA				
Botrytis Blight (Gray Mold)				
	thiophanate methyl 3336 4.5F	0.5-1.25 t.	10-20 fl.oz.	Apply at 7- to 14-day intervals when conditions favor disease.
	3336 50W	2.33-4 t.	12-16 oz.	
	OHP 6672 50W	---	12-16 oz.	
	thiophanate methyl + flutolanil SYS STAR WDG	---	4-8 oz.	Apply at 7- to 14-day intervals when conditions favor disease.
Cercospora Leaf Spot				
	myclobutanil EAGLE 20EW	---	8 fl.oz.	Apply at first sign of disease and repeat at 10- to 14-day intervals. Add a non-ionic surfactant to the tank mixture. Eagle WSP is cleared for landscape use only.
	EAGLE WSP	---	3-6 oz.	
	IMMUNOX	2 T.	---	
	SYSTHANE WSP	---	3-6 oz.	
	thiophanate methyl + flutolanil SYS STAR WDG	---	4-8 oz.	See Comments for myclobutanil, above.
Powdery Mildew				
	myclobutanil EAGLE 20EW	---	8 fl.oz.	Apply at first sign of disease and repeat at 10- to 14-day intervals. Add a non-ionic surfactant to the tank mixture. Systhane has been cleared for greenhouse use.
	EAGLE WSP	---	3-6 oz.	
	IMMUNOX	2 T.	---	
	SYSTHANE WSP	---	3-6 oz.	
AFRICAN VIOLET				
Botrytis Blight (Gray Mold)				
	chlorothalonil EXOTHERM LANDSCAPE AND GARDEN FUNGICIDE TERMIL 20F	See Comments. 2 T.		SMOKE FUMIGATION IN GREENHOUSE: : One can treats 1000 square feet. DO NOT use at temperatures above 75°F.
	copper sulfate pentahydrate PHYTON 27	---	13-15 fl.oz.	Use sufficient volume of water to thoroughly cover the leaves and stems. Repeat applications at 7- to 14-day intervals as needed to control disease. May be applied as often as 3 to 5 days when disease is severe.

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, <i>Acalypha</i>–<i>Gloxinia</i>				
AFRICAN VIOLET (cont.)				
Botrytis Blight (Gray Mold) (cont.)				
	fluidioxonil MEDALLION	---	2-4 oz.	Apply at 7- to 14-day intervals to point of run-off. When disease is severe, use highest rate and/or shortest treatment interval.
	mancozeb DITHANE T/O FORE FLO 37F MANCOZEB DG PROTECT T/O 80W	2 t. --- 1.5-3 t. 2 t.	1.5 lb. 1.2 qt. 1-2 lb. 1.5 lb.	Add a wetting agent to the tank mix.
	thiophanate-methyl 3336 4.5F 3336 50W HALT 50 W OHP 6672 50W	0.5-1.25 t. 2.33-4 t. 1.5 t. 2.5 t.	10-20 fl.oz. 12-16 oz. --- ---	Disease associated with high humidity and mild temperatures. Ventilate greenhouse while heating to dry air. Remove plant debris and trash. Apply every 7 to 14 days as disease appears. Shorten interval and increase spray rates when conditions favor disease.
	thiophanate methyl + flutolanil SYS STAR WDG	---	4-8 oz.	Apply every 7 to 14 days as disease appears. Shorten interval and increase spray rates when conditions favor disease.
Phytophthora Root and Crown Rot				
	dimethomorph STATURE SC	---	3-6.12 fl.oz.	DRENCH: Apply enough drench suspension to wet the root zone of plant every 10 to 14 days through production cycle.
	etridiazole TRUBAN 25E	---	4-8 fl.oz.	SOIL DRENCH: Apply 0.5 pint per 6-inch pot or sufficient amount to wet potting medium. Repeat at 2- to 3-month intervals.
	TRUBAN 30W TERRAZOLE 35W	---	3-10 oz.	SOIL DRENCH: Covers 400 square feet (0.5 pint per 6-inch pot). Irrigate immediately. Repeat at 1- to 3-month intervals.
		---	1.5-3 oz./ cu.yd.	DRY SOIL MIX: Mix thoroughly. Repeat as needed with fungicide soil drench.
	TRUBAN 5G	---	10 oz./cu.yd.	DRY SOIL MIX: Mix thoroughly. Repeat as needed with fungicide soil drench.
		---	6-8 lb./ 1000 sq.ft.	BROADCAST: Apply with cyclone or drop spreader. See label for spreader settings.
	etridiazole + thiophanate-methyl BANROT 8G	---	16 oz./cu.yd.	SOIL DRENCH: Covers 400 square feet (0.5 pint per 6-inch pot). Irrigate immediately. Repeat at 1- to 3-month intervals.
	BANROT 40W	---	6-12 oz.	DRY SOIL MIX: Mix thoroughly. Repeat as needed with fungicide soil drench.

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Commercial Ornamentals: Disease Control—Annual Flowers, <i>Acalypha</i>–<i>Gloxinia</i>				
AFRICAN VIOLET (cont.)				
Phytophthora Root and Crown Rot (cont.)				
	mefenoxam SUBDUE MAXX	---	0.5-1 fl.oz.	SOIL DRENCH: Apply to 400 to 800 square feet (1 to 2 pints per square foot). Repeat at 1- to 2-month intervals. DO NOT exceed 1.5 to 2 fluid ounces per 100 gallons every 6 weeks.
	SUBDUE 2X WSP	---	0.1-0.5 oz.	
	SUBDUE GR	---	12-60 oz.	BROADCAST: Apply uniformly at 1- to 2-month intervals. DO NOT exceed 37 ounces every 6 weeks. Also, see Annuals and Bedding Plants: Soil Pasteurization/ Fumigation and Disinfestation of Equipment.
	SUBDUE GR	---	1.6-8 oz./cu.yd.	DRY SOIL MIX: Mix thoroughly and irrigate with enough water to wet root zone. Reapply 6 to 8 weeks later as surface application.
	propamocarb BANOL 67S	---	20 fl.oz.	SOIL DRENCH: Apply 3.5 fluid ounces of solution per 4-inch pot at 3- to 6-week intervals.
		---	30 fl.oz.	TRANSPLANTING: Apply to area using 3 quarts of solution per 10 square feet before setting plants.
	Streptomyces griseoviridis K61 MYCOSTOP	---	14 oz.	SOIL DRENCH: Apply 20 to 40 gallons of suspension to 800 square feet of bench, container, or bed area. Irrigate to saturate medium or soil. Repeat every 3 to 6 weeks as needed. Also controls Fusarium root and crown rots.
		---	5 g/1.3 gal.	SOIL SPRAY: Apply 2 to 4 gallons in a proportioner, injector, or sprayer to 800 square feet of bench, container, or bed area. Irrigate to improve soil penetration. Repeat every 3 to 6 weeks as needed.
		---	5 g/1.3 gal.	TRANSPLANT DIP: Dip roots of transplants shortly before planting.
	<i>Trichoderma harzianum</i> Strain KRL-AG2 ROOT SHIELD		1-1.5 lb./cu.yd.	DRY SOIL MIX IN NURSERY AND GREENHOUSE: Thoroughly incorporate granules during mix preparation or pot filling. See label for compatibility with other fungicides and insecticides.
Powdery Mildew				
	copper sulfate pentahydrate PHYTON 27	---	13-15 fl.oz.	Primarily a greenhouse problem. Apply as disease appears on foliage. Repeat at 7- to 10-day intervals. Check for foliar burn before spraying large blocks of plants. Use lower rate of triadimefon in winter.
	fluidioxonil MEDALLION	---	1-2 oz.	Apply to point of run-off at 7- to 14-day intervals when conditions favor disease. See label for further instructions.

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, Acalypha–Gloxinia				
AFRICAN VIOLET (cont.)				
Powdery Mildew (cont.)				
	myclobutanil EAGLE 20EW	---	8 fl.oz.	Apply at first sign of disease and repeat at 10- to 14-day intervals. Add a non-ionic surfactant to the tank mixture.
	EAGLE WSP	---	3-6 oz.	
	IMMUNOX	2 T.	---	
	SYSTHANE WSP	---	3-6 oz.	
	paraffinic oil SUNSPRAY ULTRA FINE OIL	2.5 -5 T.	1% v/v	Apply at first sign of disease and reapply every 1 to 2 weeks. Do not apply when temperatures exceed 85°F.
	tebuconazole DISEASE CONTROL FOR ROSES, FLOWERS, AND SHRUBS	1.5 T.	---	Make three applications at 7- to 14-day intervals as needed to control disease. Make first application at first sign of disease.
	thiophanate-methyl 3336 4.5F	0.5-1 T.	10-20 fl.oz.	Primarily a greenhouse problem. Apply as disease appears on foliage. Repeat at 7- to 10-day intervals. Check for foliar burn before spraying large blocks of plants. Use lower rate of triadimefon in winter.
	3336 50W	---	12-24 oz.	
	HALT 50W	1.5 t.	---	
	OPH 6672 50W	---	12-24 oz.	
	thiophanate-methyl + flutolanil SYS STAR WDG	---	4-8 oz.	Primarily a greenhouse problem. Apply as disease appears on foliage. Repeat at 7- to 10-day intervals. Check for foliar burn before spraying large blocks of plants. Use lower rate of triadimefon in winter.
Ring Spot				
	None labeled. See Comments.			Add water to bottom of pots to avoid wetting foliage. DO NOT place plants with wet foliage in direct sun.
Tomato Spotted Wilt Virus				
	None labeled. See Comments.			Destroy diseased plants. Control thrips vector with insecticides.

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Commercial Ornamentals: Disease Control—Annual Flowers, <i>Acalypha</i>–<i>Gloxinia</i>				
AGERATUM				
Botrytis Blight				
	fluidioxonil MEDALLION	---	2-4 oz.	Apply to run-off at 7- to 14-day intervals when conditions favor disease. See label for further instructions.
	iprodione CHIPCO 26GT	---	1-2.75 qt.	Disease is associated with high humidity and mild temperatures. In greenhouse, ventilate while heating dry air. Dispose of plant debris. Apply at 7- to 14- day intervals when conditions favor disease. NOT FOR RESIDENTIAL USE.
	CHIPCO 26019 50W	---	1-2.5 lb./A	
	IPRODIONE PRO SE	---	1-2.5 qt.	
	SEXTANT 2F	---	1-2.75 qt.	
	thiophanate-methyl 3336 4.5F	0.5-1.25 t.	10-20 fl.oz.	
	3336 50W	2.33-4 t.	12-16 oz.	
	HALT 50W	1.5 t.	---	
	OHP 6672 50W	---	12-16 oz.	
	thiophanate methyl + flutolanil SYS STAR WDG	---	4-8 oz.	See Comments for iprodione, above.
	thiophanate-methyl + iprodione BENEFIT	---	17-34 fl.oz.	Apply to point of run-off. Repeat at 10- to 14-day intervals as needed. Refer to label for further directions.
	26/36 FUNGICIDE	---	33-84 fl.oz./A	Use sufficient water to thoroughly cover the leaves and stems. Reapply at 7- to 14-day intervals as needed. Use higher rate at shorter interval when disease is present. NOT FOR RESIDENTIAL USE.
Cercospora Leaf Spot				
	fluidioxonil MEDALLION	---	1-2 oz.	Apply to point of run-off at 7- to 14-day intervals when conditions favor disease. See label for further instructions.
	thiophanate methyl + flutolanil SYS STAR WDG	---	4-8 oz.	Apply at 7- to 14-day intervals as needed.
	triadimefon BAYLETON T/O	---	8-16 oz.	Apply to run-off as needed at 7- to 14-day intervals. Bayleton is cleared for landscape use only.
	STRIKE 25W	---	8-16 oz.	

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		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, Acalypha–Gloxinia				
AGERATUM (cont.)				
Root Rot				
	etridiazole TRUBAN 30W	See Comments.		See African Violet: Phytophthora Root and Crown Rot; Annuals and Bedding Plants: Disinfestation of Equipment and Soil Pasteurization/Fumigation.
	etridiazole + thiophanate-methyl BANROT 8G BANROT 40W	See Comments.		See Comments for etridiazole, above.
	mefenoxam SUBDUE GR SUBDUE MAXX SUBDUE 2X WSP	See Comments.		See African Violet: Phytophthora Root and Crown Rot; Annuals and Bedding Plants: Disinfestation of Equipment and Soil Pasteurization/Fumigation.
	potassium salts of phosphorous acid ALUDE	0.3-0.67 fl.oz.	1-2 qt.	FOLIAR SPRAY: Apply to thoroughly wet foliage and repeat every 14 to 21 days as needed.
		---	6.67-12.67 fl.oz.	DRENCH: Apply 25 gallons of solution to 100 square feet of bed area and repeat monthly as needed.
	propamocarb BANOL 67S			See African Violet: Phytophthora Root and Crown Rot; Annuals and Bedding Plants: Disinfestation of Equipment and Soil Pasteurization/Fumigation.
Rust				
	azoxystrobin HERITAGE 50W	---	1-4 oz.	FOLIAR SPRAY: Apply at first sign of disease and then every 7 to 28 days as needed.
	myclobutanil EAGLE 20EW	---	8 fl.oz.	Apply at first sign of disease and repeat at 10- to 14-day intervals. Add a non-ionic surfactant to tank mixture. Systhane has been cleared for nursery use.
	EAGLE WSP	---	3-6 oz.	
	IMMUNOX	2 t.	---	
	SYSTHANE WSP	---	3-6 oz.	

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Commercial Ornamentals: Disease Control—Annual Flowers, <i>Acalypha</i>–<i>Gloxinia</i>				
ASTER				
Leaf Spot				
	chlorothalonil + thiophanate-methyl SPECTRO 90	—	1-2 lb.	Apply at first sign of disease on leaves and repeat as needed every 7 to 14 days.
	copper hydroxide CUPRO 2005 T/N/O	1.5 t.	0.75-2 lb./A	Apply at first sign of disease and reapply at 7- to 14-day intervals. See label for information on possible phytotoxicity.
	potassium bicarbonate MILSTOP	---	2-3 lb.	Use a sufficient volume of water to get thorough coverage of the foliage and apply at first sign of disease. Repeat applications every 7- to 14 days.
	tebuconazole DISEASE CONTROL FOR ROSES, FLOWERS, AND SHRUBS	1.5 T.	---	Make three applications at 7- to 14-day intervals as needed to control disease. Make first application at first sign of disease.
BEGONIA				
Bacterial Leaf Spot				
	copper ammonium complex LIQUID COPPER FUNGICIDE	2 t.		Apply at first sign of disease and repeat applications every 7 to 14 days as needed. Shorten application interval when disease is severe.
	copper hydroxide BLACK SPOT AND POWDERY MILDEW CONTROL CUPRO 2005 T/N/O	1.5 t. ---	--- 0.75-2 lb./A	Apply at first sign of disease and reapply at 7- to 14-day intervals. See label for information on possible phytotoxicity. Avoid overhead watering. See Annuals and Bedding Plants: Disinfestation of Equipment and Soil Pasteurization/ Fumigation.
	copper sulfate pentahydrate PHYTON 27	---	15-30 fl.oz.	See Comments for copper hydroxide, above.
Botrytis Blight (Gray Mold)				
	chlorothalonil DACONIL ULTREX DACONIL WEATHER STIK 6F	--- ---	1.4 lb. 1.38 pt.	Disease is associated with high humidity and mild temperatures. In greenhouse, ventilate while heating to dry air. Dispose of plant debris. Apply at 10- to 14-day intervals when conditions favor disease.
	DACONIL ZN LANDSCAPE AND GARDEN FUNGICIDE	2 t. 2 T.	2 pt. ---	
	chlorothalonil + thiophanate-methyl SPECTRO 90	—	1-2 lb.	
	fluidioxonil MEDALLION	---	2-4 oz.	Apply to point of run-off at 7- to 14-day intervals when conditions favor disease. See label for further instructions.
	mancozeb DITHANE T/O FORE FLO 37F JUNCTION MANCOZEB DG PROTECT T/O 80W	2 t. --- --- 1.5-3 t. 2 t.	1.5 lb. 1.2 qt. 1.5 lb. 1-2 lb. 1.5 lb.	Add a wetting agent to the tank mixture. Repeat at 7- to 14-day intervals.

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		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, Acalypha–Gloxinia				
BEGONIA (cont.)				
Botrytis Blight (Gray Mold) (cont.)				
	thiophanate-methyl 3336 4.5F	0.5-1.25 T.	10-20 fl.oz.	Disease is associated with high humidity and mild temperatures. In greenhouse, ventilate while heating to dry air. Dispose of plant debris. Apply at 10- to 14-day intervals when conditions favor disease.
	3336 50W	2.33-4 t.	12-16 oz.	
	HALT 50W	1.5 t.	---	
	OHP 6672W	---	12-16 oz.	
	thiophanate methyl + flutolanil SYS STAR WDG	---	4-8 oz.	See Comments for thiophanate-methyl, above.
	trifloxystrobin COMPASS O	---	2-4 oz.	See Comments for thiophanate-methyl, above.
Phytophthora Root Rot				
	dimethomorph STATURE SC	---	3-6.12 fl.oz.	DRENCH: Apply enough drench suspension to wet the root zone of plant every 10 to 14 days through production cycle.
	potassium salts of phosphorous acid ALUDE	0.3-0.67 fl.oz. ---	1-2 qt. 6.67 - 12.67 fl.oz.	FOLIAR SPRAY: Apply to thoroughly wet foliage and repeat every 14 to 21 days as needed. DRENCH: Apply 25 gallons of solution to 100 square feet of bed area and repeat monthly as needed.
Powdery Mildew				
	azoxystrobin HERITAGE 50W	---	1-4 oz.	FOLIAR SPRAY: Apply at first sign of disease and then every 7 to 28 days as needed.
	chlorothalonil + fenarimol TWSOME 4.4F	0.67 T.	2 pt.	Repeat at 7- to 14-day intervals.
	chlorothalonil + thiophanate- methyl SPECTRO 90	---	1-2 lb.	Apply at first sign of disease on leaves and repeat as needed every 7 to 14 days.
	copper hydroxide CUPRO 2005 T/N/O	---	0.75-2 lb./A	Apply at first sign of disease and reapply at 7- to 14-day intervals. See label for information on possible phytotoxicity.
	copper sulfate pentahydrate PHYTON 27	---	13-15 fl.oz.	GREENHOUSE: Apply at first sign of disease. Repeat at 7- to 10-day intervals.
	fenarimol RUBIGAN AS	---	3-5 fl.oz.	FIELD PRODUCTION: Apply at first sign of disease. Repeat sprays every 10 to 14 days. Use higher rate and shorter intervals when more than 10-percent leaf in-infection occurs and conditions favor disease.
	myclobutanil EAGLE 20EW EAGLE WSP IMMUNOX SYSTHANE WSP	--- --- 2 t. ---	8 fl.oz. 3-6 oz. --- 3-6 oz.	Apply at first sign of disease; repeat every 10 to 14 days. Add a non-ionic surfactant to tank mixture. Systhane has been cleared for greenhouse use.
	paraffinic oil SUNSPRAY ULTRA FINE OIL	2.5 -5 T.	1% v/v	Apply at first sign of disease and reapply every 1 to 2 weeks. Do not apply when temperatures exceed 85°F.

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Commercial Ornamentals: Disease Control—Annual Flowers, Acalypha–Gloxinia				
BEGONIA (cont.)				
Powdery Mildew (cont.)				
	tebuconazole DISEASE CONTROL FOR ROSES, FLOWERS, AND SHRUBS	1.5 T.	---	Make three applications at 7- to 14-day intervals as needed to control disease. Make first application at first sign of disease.
	thiophanate-methyl HALT 50W	1.5 t.	---	
	thiophanate methyl + flutolanil SYS STAR WDG	---	4-8 oz.	See Comments for myclobutanil.
	triadimefon BAYLETON T/O	---	2-4 oz.	Apply to point of run-off and repeat at 7- to 14-day intervals. Bayleton is cleared for landscape use only.
	STRIKE 25	---	4 oz.	
	SYSTEMIC FUNGICIDE FOR TURF AND ORNAMENTS	1-2 T. (0.5-1 fl.oz.)	---	
	trifloxystrobin COMPASS O	---	1-4 oz.	Apply to point of drip when disease is detected or when conditions favor disease. Repeat every 7 to 14 days until threat of outbreak is over.
	triflumizole TERRAGUARD SC	---	4-16 fl.oz.	Begin applications before first sign of disease. Repeat as needed every 7 to 14 days. Use higher rate at shorter intervals when disease is present.
	triforine ROSE AND SHRUB DISEASE CONTROL	1 T.	---	Apply at first sign of disease and repeat every 7 to 10 days, as needed.
Pythium and Phytophthora Damping-Off, Root Rot				
	captan CAPTAN 50W	See Comments.		See African Violet: Phytophthora Root and Crown Rot; Annuals and Bedding Plants: Disinfestation of Equipment and Soil Pasteurization/Fumigation; Pythium and Phytophthora Damping-Off, Root and Crown Rot.
	etridiazole TERRAZOLE 35W TERRAZOLE 5G TRUBAN 5G TRUBAN 30W	See Comments.		
	etridiazole + thiophanate-methyl BANROT 8G BANROT 40W	See Comments.		

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Commercial Ornamentals: Disease Control—Annual Flowers, Acalypha–Gloxinia				
BEGONIA (cont.)				
Pythium and Phytophthora Damping-Off, Root Rot (cont.)				
	fosetyl-Al ALIETTE WDG	See Comments.		See African Violet: Phytophthora Root and Crown Rot; Annuals and Bedding Plants: Disinfestation of Equipment and Soil Pasteurization/Fumigation; Pythium and Phytophthora Damping-Off, Root and Crown Rot.
	mefenoxam SUBDUE GR SUBDUE MAXX SUBDUE 2X WSP	See Comments.		See Comments for fosetyl-Al, above.
	potassium salts of phosphorous acid ALUDE	0.3-0.67 fl.oz. ---	1-2 qt. 6.67-12.67 fl.oz.	FOLIAR SPRAY: Apply to thoroughly wet foliage and repeat every 14 to 21 days as needed. DRENCH: Apply 25 gallons of solution to 100 square feet of bed area and repeat monthly as needed.
Rhizoctonia Damping-Off and Root Rot				
	etrizazole + thiophanate-methyl BANROT 8G BANROT 40W	See Comments.		See Annuals and Bedding Plants: Rhizoctonia Damping-Off, Root and Crown Rot; Disinfestation of Equipment and Soil Pasteurization/Fumigation.
	fluidioxonil MEDALLION	---	See Comments.	See Annuals and Bedding Plants: Rhizoctonia Damping-Off, Root and Crown Rot.
	flutolanil PROSTAR 70WP	---	3-6 oz.	DRENCH: Apply 1 to 2 pints per square foot of bed or bench area. Repeat as needed for control.
	thiophanate-methyl 3336 4.5F 3336 50W 3336 G HALT 50W OHP 6672 4.5F	0.5-1.25 T. 2.33-4 t. --- 2.5 t. ---	16-20 fl.oz. 12-16 oz. 22-33 lb. --- 20 fl.oz.	Repeat applications every 21 to 28 days. For 3336 G, broadcast rate per 1000 square feet.
	thiophanate methyl + flutolanil SYS STAR WDG	---	2-4 oz.	DRENCH: Apply 1 to 2 pints per square foot of bed or bench area. Repeat as needed for control.

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BOUGAINVILLEA				
Pythium and Phytophthora Root Rot				
	potassium salts of phosphorous acid ALUDE	See Comments.		Refer to rates and Comments for potassium salts of phosphorous acid under Aglaonema; Phytophthora root rot.
BULBS AND CORMS				
	thiophanate-methyl 3336 4.5F 3336 50W OHP 6672 4.5L OHP 6672 50W	0.5-1.25 t. 2.33-4 t. --- ---	33 fl.oz. 12-16 oz. 33 fl.oz. 12-16 oz.	BULB DIP: Soak cleaned bulbs for 15 to 30 minutes in warm dip (80°-85°F.) within 48 hours after digging. Dry and store.
CACTUS				
Fusarium Root and Crown Rot				
	thiophanate-methyl 3336 4.5F 3336 50W HALT 50W OHP 6672 4.5L OHP 6672 50W	0.5-1.25 t. 2.33-4 t. 2.5 t. --- ---	16-20 fl.oz. 12-16 oz. --- 20 fl.oz. 12-16 oz.	Apply after transplanting and repeat at 2- to 4-week intervals. Discard diseased houseplants.
	thiophanate-methyl + flutolanil SYS STAR WDG	---	2-4 oz.	DRENCH: Apply 1 to 2 pints per square foot of bed or bench area. Repeat as needed for control.
Phythium and Phytophthora Root Rot				
	captan CAPTAN 50W	See Comments.		See Annuals and Bedding Plants: Pythium and Phytophthora Damping-Off, Root and Crown Rot; Rhizoctonia Damping-Off; Disinfestation of Equipment; and Pasteurization/Fumigation.
	mefenoxam SUBDUE MAXX	---	0.5-1.5 fl. oz. 0.25-0.5 fl.oz./cu.yd.	SOIL DRENCH: Apply 1 pint solution per square foot. Repeat every 2 to 3 months. DRY SOIL MIX: Thoroughly mix in potting medium (Zygocactus).
Rhizoctonia Root Rot				
	PCNB DEFEND 2L DEFEND 75W TERRACLOR 75W	See Comments.		See Annuals and Bedding Plants: Rhizoctonia Damping-Off, Root and Crown Rot; Disinfestation of Equipment and Soil Pasteurization/Fumigation.
	thiophanate-methyl + flutolanil SYS STAR WDG	---	2-4 oz.	DRENCH: Apply 1 to 2 pints per square foot of bed or bench area. Repeat as needed for control.

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Commercial Ornamentals: Disease Control—Annual Flowers, Acalypha–Gloxinia				
CARNATION				
Botrytis Blight				
	copper ammonium complex LIQUID COPPER FUNGICIDE	2 t.	---	Apply at first sign of disease and repeat applications every 7 to 14 days as needed. Shorten application interval when disease is severe.
	copper sulfate pentahydrate PHYTON 27	---	10-20 fl.oz.	Use sufficient volume of water to thoroughly cover the leaves and stems. Repeat applications at 7- to 14-day intervals as needed to control disease. May be applied as often as 3 to 5 days when disease is severe.
	thiophanate-methyl + iprodione 26/36 FUNGICIDE	---	33-84 fl.oz./A	Use sufficient water to thoroughly cover the leaves and stems. Reapply at 7- to 14-day intervals as needed. Use higher rate at shorter interval when disease is present. NOT FOR RESIDENTIAL USE.
CELOSIA				
Myrothecium Leaf Spot				
	fluidioxonil MEDALLION	---	1-2 oz.	Apply at 7- to 14-day intervals to run-off when conditions favor disease.
Pythium Root Rot				
	potassium salts of phosphorous acid ALUDE	---	1-2 qt.	FOLIAR SPRAY: Apply to thoroughly wet foliage and repeat every 14 to 21 days as needed.
		---	6.35-12.67 fl.oz.	DRENCH: Apply 25 gallons of solution to 100 square feet of bed area and repeat monthly as needed.
		---	1-2 pt./cu.yd.	INCORPORATION: Just before potting, mix 1 to 2 quarts of solution per cubic yard of media. Follow with a drench or foliar spray after one month, as needed.
CHRISTMAS CACTUS				
Rhizoctonia Root Rot				
	fluidioxonil MEDALLION	---	See Comments.	See Annuals and Bedding Plants: Rhizoctonia Damping-Off, Root and Crown Rot.

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, <i>Acalypha</i>–<i>Gloxinia</i>				
CHRYSANTHEMUM				
Ascochyta Ray Blight				
	chlorothalonil DACONIL ULTREX	---	1.4 lb.	Apply every 7 to 14 days.
	DACONIL WEATHER STIK 6F	---	1.38 pt.	
	ECHO DF	---	1.25 lb.	Apply every 7 to 14 days.
	LANDSCAPE AND GARDEN FUNGICIDE	2 T.	---	
	chlorothalonil + fenarimol TWSOME 4.4F	0.67 T.	2 pt.	See Comments for chlorothalonil, above.
	chlorothalonil + thiophanate- methyl SPECTRO 90	—	1-2 lb.	Disease is associated with high humidity and mild temperatures. In greenhouse, ventilate while heating dry air. Dispose of plant debris. Apply at 7- to 14- day intervals when conditions favor disease. NOT FOR RESIDENTIAL USE.
	iprodione CHIPCO 26GT	---	1-2.75 qt.	
	CHIPCO 26019 50W	---	1-2.5 lb./A	
	IPRODIONE PRO SE	---	1-2.5 qt.	
	SEXTANT 2F	---	1-2.75 qt.	
	mancozeb DITHANE T/O	2 t.	1.5 lb.	Apply every 7 to 14 days.
	FORE 80W	2 t.	1.5 lb.	
	MANCOZEB WDG	1.5-3 t.	1-2 lb.	
	PROTECT T/O 80W	2 t.	1.5 lb.	
	myclobutanil EAGLE 20EW	---	8 fl.oz.	Apply at first sign of disease; repeat every 10 to 14 days. Add a non-ionic surfactant to the tank mixture. Systhane has been cleared for greenhouse use.
	EAGLE WSP	---	3-6 oz.	
	SYSTHANE WSP	---	3-6 oz.	
	potassium bicarbonate MILSTOP	---	2-3 lb.	Use a sufficient volume of water to get thorough coverage of the foliage and apply at first sign of disease. Repeat applications every 7 to 14 days.
	propiconazole BANNER MAXX	---	8-12 fl.oz.	Use sufficient volume of water mixed with Propensity to thoroughly cover the leaves and stems. Repeat applications at 21-day intervals as needed.
	PROPENSITY 1.3MEC	---	6-8 fl.oz.	
	SYSTEMIC FUNGICIDE	2 T.	---	
	thiophanate-methyl 3336 4.5F	0.5-1.25 t.	10-20 fl.oz.	Apply when disease first appears at or just before bloom. Repeat at 7- to 14-day intervals. Shorten intervals during rainy weather.
	3336 50W	2.33-4 t.	12-16 oz.	
	HALT 50W	2.5 t.	---	
	OHP 6672 50W	---	12-16 oz.	
	thiophanate methyl + flutolanil SYS STAR WDG	---	4-8 oz.	Apply when disease first appears at or just before bloom. Repeat at 7- to 14-day intervals. Shorten intervals during rainy weather.
	thiophanate-methyl + iprodione BENEFIT	---	17-34 fl.oz.	Apply when disease first appears at or just before bloom. Repeat at 7- to 14-day intervals. Shorten intervals during rainy weather.

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, <i>Acalypha</i>–<i>Gloxinia</i>				
CHRYSANTHEMUM (cont.)				
Bacterial Blight				
	copper hydroxide CUPRO 2005 T/N/O	1.5 t.	0.75-2 lb./A	Apply at first sign of disease and reapply at 7- to 14-day intervals. See label for information on possible phytotoxicity.
	copper sulfate pentahydrate PHYTON 27	---	15-20 fl.oz.	Thoroughly cover the foliage. Reapply as needed. Destroy infested plants and plant debris. DO NOT replant chrysanthemums for 1 year.
Botrytis Blight (Gray Mold)				
	chlorothalonil DACONIL ULTREX DACONIL WEATHER STIK	---	1.4 lb. 1.38 pt.	Disease is associated with high humidity and mild temperatures. In greenhouse, ventilate while heating to dry air. Remove plant debris. Apply when conditions favor disease development before bloom. Repeat at 7- to 14-day intervals through bloom. Refer to fungicide label for specific treatment intervals.
	ECHO DF LANDSCAPE AND GARDEN FUNGICIDE	---	1.25 lb.	
	2 T.	---		
	chlorothalonil EXOTHERM LANDSCAPE AND GARDEN FUNGICIDE TERMIL 20F	See Comments. 2 T.		SMOKE FUMIGATION IN GREENHOUSE: One can treats 1000 square feet. DO NOT use at temperatures above 75°F.
	chlorothalonil + fenarimol TWSOME 4.4F	0.67 T.	2 pt.	Apply when conditions favor disease development before bloom. Repeat at 7- to 14-day intervals through bloom. Refer to fungicide label for specific treatment intervals.
	chlorothalonil + thiophanate-methyl SPECTRO 90	—	1-2 lb.	See Comments for chlorothalonil, above.
	copper ammonium complex LIQUID COPPER FUNGICIDE	2 t.	---	Apply at first sign of disease and repeat applications every 7 to 14 days as needed. Shorten application interval when disease is severe.
	copper sulfate pentahydrate PHYTON 27	---	15-25 fl.oz.	Use sufficient volume of water to thoroughly cover the leaves and stems. Repeat applications at 7- to 14-day intervals as needed to control disease. May be applied as often as 3 to 5 days when disease is severe.
	fluidioxonil MEDALLION	---	2-4 oz.	Apply at 7- to 14-day intervals to point of run-off when conditions favor disease.
	iprodione CHIPCO 26GT CHIPCO 26019 50W IPRODIONE PRO SE SEXTANT 2F	---	1-2.5 qt./A 1-2.5 lb./A 1-2.5 qt. 1-2.75 qt.	Disease is associated with high humidity and mild temperatures. In greenhouse, ventilate while heating to dry air. Remove plant debris. Apply when conditions favor disease development before bloom. Repeat at 7- to 14-day intervals through bloom. Refer to fungicide label for specific treatment intervals. NOT FOR RESIDENTIAL USE.

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, <i>Acalypha</i>–<i>Gloxinia</i>				
CHRYSANTHRUM (cont.)				
Botrytis Blight (Gray Mold) (cont.)				
	mancozeb			See Comments for iprodione, above.
	DITHANE T/O	3 t.	1.5 lb.	
	FORE 80W	3 t.	1.5 lb.	
	JUNCTION	---	1.5 lb.	
	MANCOZEB DG	1.5-3 t.	1-2 lb.	
	PROTECT T/O 80W	3 t.	1.5 lb.	
	potassium bicarbonate			Use a sufficient volume of water to get thorough coverage of the foliage and apply at first sign of disease. Repeat applications every 7 to 14 days.
	MILSTOP	---	2-5 lb.	
	thiophanate-methyl			Disease is associated with high humidity and mild temperatures. In greenhouse, ventilate while heating to dry air. Remove plant debris. Apply when conditions favor disease development before bloom. Repeat at 7- to 14-day intervals through bloom. Refer to fungicide label for specific treatment intervals.
	3336 4.5F	0.5-1.25 t.	10-20 fl.oz.	
	3336 50W	2.33-4 t.	12-16 oz.	
	HALT 50W	1.5 t.	---	
	OHP 6672 50W	---	12-16 oz.	
	thiophanate methyl + flutolanil			See Comments for thiophanate-methyl, above.
	SYS STAR WDG	---	4-8 oz.	
	thiophanate-methyl + iprodione			Apply to point of run-off. Repeat at 10- to 14-day intervals as needed. Refer to label for further directions.
	BENEFIT	---	17-34 fl.oz.	
	trifloxystrobin			Disease is associated with high humidity and mild temperatures. In greenhouse, ventilate while heating to dry air. Remove plant debris. Apply when conditions favor disease development before bloom. Repeat at 7- to 14-day intervals through bloom. Refer to fungicide label for specific treatment intervals.
	COMPASS O	---	1-4 oz.	
Fusarium Wilt				
	Streptomyces griseoviridis K61			SOIL DRENCH: Apply 20 to 40 gallons of suspension to 800 square feet of bench, container, or bed area. Irrigate to saturate potting medium or soil. Repeat every 3 to 6 weeks as needed. Also controls Fusarium root and crown rot diseases. Suppresses diseases caused by Pythium, Phytophthora, and Botrytis.
	MYCOSTOP	---	1.4 oz.	
		---	5 g/1.3 gal.	SOIL SPRAY: Apply 2 to 4 gallons in a proportioner, injector, or sprayer to 800 square feet of bench, container, or bed area. Irrigate to improve soil penetration. Repeat every 3 to 6 weeks as needed.
		---	5 g/1.3 gal.	TRANSPLANT DIP: Dip roots of transplants shortly before planting.
	triflumizole			DRENCH: Begin application before first sign of disease. Repeat as needed every 7 to 14 days. Use higher rate at shorter intervals when disease is present.
	TERRAGUARD SC	---	4-8 fl.oz.	

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, Acalypha–Gloxinia				
CHRYSANTHEMUM (cont.)				
Fusarium Wilt (cont.)				
	thiophanate-methyl 3336 4.5F	0.5-1.25 t.	16-20 fl.oz.	SOIL DRENCH: Apply every 2 to 4 weeks after transplanting. Destroy diseased plants. Use resistant cultivars. Good sanitation practices are essential. DO NOT reuse pots. Select disease-indexed cuttings. This disease is a problem on greenhouse pot mums in summer. See Annuals and Bedding Plants: Disinfestation of Equipment and Soil Sterilization/ Fumigation.
	3336 50W	2.33-4 t.	12-16 oz.	
	HALT 50W	2.5 t.	---	
	OHP 6672 4.5L	---	20 fl.oz.	
	OHP 6672 50W	---	12-16 oz.	
Powdery Mildew				
	azoxystrobin HERITAGE 50W	---	1-4 oz.	Apply at first sign of disease and repeat at 14- to 28-day intervals.
	chlorothalonil + thiophanate-methyl SPECTRO 90	---	1-2 lb.	Apply at first sign of disease on leaves and repeat as needed every 7 to 14 days.
	copper sulfate pentahydrate PHYTON 27	---	13-15 fl.oz.	Apply at first sign of disease. Repeat at 7- to 10-day intervals.
	fenarimol RUBIGAN AS	---	3-5 fl.oz.	FIELD PRODUCTION: Apply at first sign of disease and repeat sprays every 10 to 14 days. Use higher rate and shorter interval when more than 10-percent leaf infection occurs and conditions favor disease.
	fluidioxonil MEDALLION	---	1-2 oz.	Apply to point of run-off at 7- to 14-day intervals when conditions favor disease. See label for further instructions.
	kresoxim-methyl CYGNUS	---	1.6-3.2 oz.	Apply as protective spray at 10- to 14-day intervals. Apply higher rate at shorter intervals when conditions favor disease.
	myclobutanil EAGLE 20EW	---	8 fl.oz.	Apply at first sign of disease and repeat at 10- to 14-day intervals. Add a non-ionic surfactant to the tank mixture. Systhane has been cleared for greenhouse use.
	EAGLE WSP	---	3-6 oz.	
	IMMUNOX	2 t.	---	
	SYSTHANE WSP	---	3-6 oz.	
	paraffinic oil SUNSPRAY ULTRA FINE OIL	2.5 -5 T.	1% v/v	Apply at first sign of disease and reapply every 1 to 2 weeks. Do not apply when temperatures exceed 85°F.
	potassium bicarbonate MILSTOP	---	2-3 lb.	Use a sufficient volume of water to get thorough coverage of the foliage and apply at first sign of disease. Repeat applications every 7 to 14 days.
	sulfur FLOTOX 90	2.5 T.	---	Apply at first sign of disease. Repeat at 7- to 10-day intervals.
	tebuconazole DISEASE CONTROL FOR ROSES, FLOWERS, AND SHRUBS	1.5 T.	---	Make three applications at 7- to 14-day intervals as needed to control disease. Make first application at first sign of disease.
	thiophanate-methyl 3336 4.5F	0.5-1.25 t.	10-20 fl.oz.	Apply at first sign of disease. Repeat at 7- to 10-day intervals.
	3336 50W	2.33-4 t.	12-24 oz.	
	HALT 50W	1.5 t.	---	
	OHP 6672 50W	---	12-24 oz.	

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, <i>Acalypha</i>–<i>Gloxinia</i>				
CHRYSANTHEMUM (cont.)				
Powdery Mildew (cont.)				
	thiophanate-methyl + iprodione 26/36 FUNGICIDE	---	33-84 fl.oz./A	Use sufficient water to thoroughly cover the leaves and stems. Reapply at 7- to 14-day intervals as needed. Use higher rate at shorter interval when disease is present. NOT FOR RESIDENTIAL USE.
	triadimefon BAYLETON T/O	---	2-4 oz.	LANDSCAPE: Apply at first sign of disease. Repeat at 5- to 7-day intervals. Bayleton is cleared for landscape use only.
	STRIKE 25W	---	4 oz.	IN GREENHOUSE: Use lower rate in winter. Excessive rates or applications may shorten flower stalks.
Pythium and Phytophthora Root Rot				
	captan CAPTAN 50W	See Comments.		See Annuals and Bedding Plants: Pythium and Phytophthora Damping-Off, Root and Crown Rot; Disinfestation of Equipment and Soil Pasteurization/Fumigation.
	dimethomorph STATURE SC	---	3-6.12 fl.oz.	DRENCH: Apply enough drench suspension to wet the root zone of plant every 10 to 14 days through production cycle.
	etridiazole TERRAZOLE 35W TRUBAN 5G TRUBAN 25E TRUBAN 30W			See Comments for captan, above.
	etridiazole + thiophanate-methyl BANROT 8G BANROT 40W			See Comments for captan, above.
	mefenoxam SUBDUE GR SUBDUE MAXX SUBDUE 2X WSP			See Comments for captan, above.
	potassium salts of phosphorous acid ALUDE	0.3-0.67 fl.oz.	1-2 qt.	FOLIAR SPRAY: Apply to thoroughly wet foliage and repeat every 14 to 21 days as needed.
		---	6.67-12.67 fl.oz.	DRENCH: Apply 25 gallons of solution to 100 square feet of bed area and repeat monthly as needed.
	propamocarb BANOL 67S			See Annuals and Bedding Plants: Pythium and Phytophthora Damping-Off, Root and Crown Rot; Disinfestation of Equipment and Soil Pasteurization/Fumigation.
	<i>Trichoderma harzianum</i> Strain KRL-AG2 ROOT SHIELD	---	1-1.5 lb./cu.yd.	DRY SOIL MIX IN NURSERY AND GREENHOUSE: Thoroughly incorporate granules during mix preparation or pot filling. See label for compatibility with other fungicides and insecticides.

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, Acalypha–Gloxinia				
CHRYSANTHEMUM (cont.)				
Rhizoctonia Root Rot				
	azoxystrobin HERITAGE 50W		1-4 oz.	SOIL DRENCH: Apply every 7 to 21 days as needed.
	etr Diazole + thiophanate-methyl BANROT 8G BANROT 40W	See Comments.		See Annuals and Bedding Plants: Rhizoctonia Damping-Off, Root and Crown Rot; Disinfestation of Equipment and Soil Pasteurization/Fumigation.
	fluidioxonil MEDALLION	---	See Comments.	See Annuals and Bedding Plants: Rhizoctonia Damping-Off, Root and Crown Rot
	flutolanil CONTRAST 70WSP PROSTAR 70WP	---	3-6 oz. 3-6 oz.	SOIL DRENCH: Apply 1 to 2 pints of suspension per square foot of bed or bench area. Retreat every 21 to 28 days until crop is finished. See label for drench rates on larger containers and for additional information. May be applied through overhead, microjet, and drip irrigation systems.
	iprodione CHIPCO 26GT SEXTANT	---	13 fl.oz. 13 fl.oz.	See Annuals and Bedding Plants: Rhizoctonia Damping-Off, Root and Crown Rot; Disinfestation of Equipment and Soil Pasteurization/Fumigation. NOT FOR RESIDENTIAL USE.
	PCNB DEFEND 2F DEFEND 75W REVERE WSP TERRACLOR 75W	See Comments.		See Annuals and Bedding Plants: Rhizoctonia Damping-Off, Root and Crown Rot; Disinfestation of Equipment and Soil Pasteurization/Fumigation.
	thiophanate-methyl 3336 4.5F 3336 50W HALT 50W OHP 6672 4.5L OHP 6672 50W	0.5-1.25 t. 2.33-4 t. 2.5 t. --- ---	10-20 fl.oz. 12-24 oz. --- 10-20 fl.oz. 12-24 oz.	See Comments for PCNB, above.
	thiophanate-methyl + iprodione 26/36 FUNGICIDE		33-84 fl.oz./A	HEAVY SPRAY/DRENCH: Use sufficient water to thoroughly cover the leaves and stems. Reapply at 7- to 14-day intervals as needed. Use higher rate at shorter interval when disease is present. NOT FOR RESIDENTIAL USE.

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, <i>Acalypha–Gloxinia</i>				
CHRYSANTHEMUM (cont.)				
Rust				
	azoxystrobin HERITAGE 50W	---	1-4 oz.	Apply at first sign of disease and repeat at 14- to 28-day intervals.
	kresoxim-methyl CYGNUS	---	1.6-3.2 oz.	Apply as protective spray at 10- to 14-day intervals. Apply higher rate at shorter intervals when conditions favor disease.
	mancozeb DITHANE T/O FORE 80W PROTECT T/O 80W	2 t. 2 t. 2 t.	1.5 lb. 1.5 lb. 1.5 lb.	Apply at first sign of disease and repeat at 7- to 14-day intervals.
	myclobutanil EAGLE 20EW EAGLE WSP IMMUNOX SYSTHANE WSP	--- --- 2 t. ---	8 fl.oz. 3-6 oz. --- 3-6 oz.	Apply at first sign of disease and repeat at 10- to 14-day intervals. Add a non-ionic surfactant to the tank mixture. Systhane has been cleared for green-house use.
	tebuconazole DISEASE CONTROL FOR ROSES, FLOWERS, AND SHRUBS	1.5 T.	---	Make three applications at 7- to 14-day intervals as needed to control disease. Make first application at first sign of disease.
	triadimefon STRIKE 25W	---	2-4 oz.	IN GREENHOUSE: Use lower rate in winter. Excessive rates or applications may shorten flower stalks.
	trifloxystrobin COMPASS O	---	2-4 oz.	Apply when conditions favor disease and repeat every 7 to 14 days as needed.
Septoria Leaf Spot				
	chlorothalonil DACONIL ULTREX DACONIL WEATHER STIK 6F LANDSCAPE AND GARDEN FUNGICIDE	--- --- 2 T.	1.4 lb. 1.38 pt. ---	Apply every 7 to 14 days.
	chlorothalonil + fenarimol TWSOME 4.4F	2 t.	2 pt.	Disease is common in established landscape plant-ings. Apply at first sign of disease and repeat at 7- to 14-day intervals.
	chlorothalonil + thiophanate-methyl SPECTRO 90	—	1-2 lb.	See Comments for chlorothalonil, above.
	copper ammonium complex LIQUID COPPER FUNGICIDE	2 t.	---	Apply at first sign of disease and repeat applications every 7 to 14 days as needed. Shorten application interval when disease is severe.
	copper hydroxide CUPRO 2005 T/N/O	1.5 t.	0.75-2 lb./A	Apply at first sign of disease and reapply at 7- to 14-day intervals. See label for information on possible phytotoxicity.
	kresoxim-methyl CYGNUS	---	1.6-3.2 oz.	Apply as protective spray at 10- to 14-day intervals. Apply higher rate at shorter intervals when conditions favor disease.
	thiophanate methyl + flutolanil SYS STAR WDG	---	4-8 oz.	FOLIAR SPRAY: Apply to point of drip when conditions favor disease. Repeat every 10 to 14 days as needed.

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, Acalypha–Gloxinia				
CHRYSANTHEMUM (cont.)				
Verticillium Wilt				
	None labeled	See Comments.		Plant wilt-resistant varieties. Destroy infected plants. Fumigate infested beds with Vapam. See Annuals and Bedding Plants: Soil Pasteurization/Fumigation.
CONEFLOWER, White and Purple				
Bacterial Leaf Spot				
	copper hydroxide CUPRO 2005 T/N/O	1.5 t.	0.75-2 lb./A	Apply at first sign of disease and reapply at 7- to 14-day intervals. See label for information on possible phytotoxicity.
	copper sulfate pentahydrate PHYTON 27	---	15-30 fl.oz.	See Comments for copper hydroxide, above.
CYCLAMEN				
Bacterial Tuber Rot				
	None labeled	See Comments.		Destroy infected plants. Follow good sanitation practices. See Annuals and Bedding Plants: Soil Sterilization.
Botrytis Blight (Gray Mold)				
	chlorothalonil EXOTHERM LANDSCAPE AND GARDEN FUNGICIDE TERMIL 20F	See Comments. 2 T.		SMOKE FUMIGATION IN GREENHOUSE: One can treats 1000 square feet. DO NOT use at temperatures above 75°F.
	copper sulfate pentahydrate PHYTON 27	---	15-20 fl.oz.	Use sufficient volume of water to thoroughly cover the leaves and stems. Repeat applications at 7- to 14-day intervals as needed to control disease. May be applied as often as 3 to 5 days when disease is severe.
	fluidioxonil MEDALLION	---	12-16 pkg. 2-4 oz.	
	iprodione CHIPCO 26GT CHIPCO 26019 50W IPRODIONE PRO SE SEXTANT 2F	---	1-2.5 qt./A 1-2.5 lb./A 1-2.5 qt. 1-2.75 qt.	See Comments for copper sulfate pentahydrate, above. NOT FOR RESIDENTIAL USE.
	thiophanate-methyl 3336 4.5F 3336 50W HALT 50W OHP 6672 50W	0.5-1.25 t. 2.33-4 t. 1.5 t. ---	10-20 fl.oz. 12-16 oz. --- 12-16 oz.	Disease is associated with high humidity and mild temperatures. In greenhouse, ventilate while heating to dry air. Remove plant debris. Apply when conditions favor disease development. Repeat at 7- to 10-day intervals through bloom. See fungicide label for specific treatment intervals.

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, Acalypha–Gloxinia				
CYCLAMEN (cont.)				
Botrytis Blight (Gray Mold) (cont.)				
	thiophanate-methyl + iprodione BENEFIT	---	17-34 fl.oz.	Apply to point of run-off. Repeat at 10- to 14-day intervals as needed. See label for further directions. May damage cyclamen blooms.
	26/36 FUNGICIDE		33-84 fl.oz./A	Use sufficient water to thoroughly cover the leaves and stems. Reapply at 7- to 14-day intervals as needed. Use higher rate at shorter interval when disease is present. NOT FOR RESIDENTIAL USE.
	triflumizole TERRAGUARD SC	---	4-8 fl.oz.	Begin applications before first sign of disease. Repeat as needed every 7 to 14 days. Use higher rate at shorter intervals when disease is present.
Fusarium Crown Rot				
	azoxystrobin HERITAGE 50W	---	1-4 oz.	FOLIAR SPRAY: Apply every 7 to 21 days as needed.
	fluidioxonil MEDALLION	---	See Comments.	See Annuals and Bedding Plants: Rhizoctonia Damping-Off, Root and Crown Rot.
	Streptomyces griseoviridis K61 MYCOSTOP	See Comments.		SOIL DRENCH: Apply 20 to 40 gallons of suspension to 800 square feet of bench, container, or bed area. Irrigate to saturate potting medium or soil. Repeat every 3 to 6 weeks as needed. Also controls Fusarium root and crown rot diseases. Suppresses diseases caused by Pythium, Phytophthora, and Botrytis. SOIL SPRAY: Apply 2 to 4 gallons in a proportioner, injector, or sprayer to 800 square feet of bench, container, or bed area. Irrigate to improve soil penetration. Repeat every 3 to 6 weeks as needed. TRANSPLANT DIP: Dip roots of transplants shortly before planting.
	thiophanate-methyl 3336 4.5F 3336 50W OHP 6672 4.5L OHP 6672 50W	0.5-1.25 t. 2.33-4 t. --- ---	16-20 fl.oz. 12-16 oz. 20 fl.oz. 12-16 oz.	SOIL DRENCH: Apply to 400 to 800 square feet of bed or bench area, or apply 1 to 2 pints per square foot. Repeat at 2- to 4-week intervals.
DAFFODIL (Narcissus)				
Botrytis Blight (Gray Mold)				
	chlorothalonil EXOTHERM LANDSCAPE AND GARDEN FUNGICIDE TERMIL 20F	See Comments. 2 T.		SMOKE FUMIGATION IN GREENHOUSE: One can treats 1000 square feet. DO NOT use at temperatures above 75°F.

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, Acalypha–Gloxinia				
DAFFODIL (Narcissus) (cont.)				
Botrytis Blight (Gray Mold) (cont.)				
	chlorothalonil DACONIL WEATHER STIK 6F	---	1.38 pt.	Disease is associated with high humidity and mild temperatures. In greenhouse, ventilate while heating to dry air. Remove plant debris. Apply when conditions favor disease. Repeat at 10- to 14-day intervals through bloom.
	DACONIL ULTREX ECHO 720	---	1.4 lb. 1.38 pt.	
	chlorothalonil + thiophanate-methyl SPECTRO 90	—	1-2 lb.	
	copper hydroxide CUPRO 2005 T/N/O	1.5 t.	0.75-2 lb./A	Apply at first sign of disease and reapply at 7- to 14-day intervals. See label for information on possible phytotoxicity.
	iprodione CHIPCO 26GT CHIPCO 26019 50W IPRODIONE PRO SE SEXTANT 2F	--- --- --- ---	1-2.5 qt./A 1-2.5 lb./A 1-2.5 qt. 1-2.75 qt.	Disease is associated with high humidity and mild temperatures. In greenhouse, ventilate while heating to dry air. Remove plant debris. Apply when conditions favor disease. Repeat at 10- to 14-day intervals through bloom. NOT FOR RESIDENTIAL USE.
	thiophanate-methyl 3336 4.5F 3336 50W HALT 50W OPH 6672 50W	0.5-1.25 t. 2.33-4 t. 1.5 t. ---	10-20 fl.oz. 12-16 oz. --- 12-16 oz.	See Comments for copper hydroxide, above.
Fusarium Bulb Rot				
	thiophanate-methyl 3336 4.5F 3336 50W HALT 50W	0.5-1.25 t. 2.33-4 t. 2.5-3 t.	33 fl.oz. 12-16 oz. ---	Discard diseased bulbs. Soak clean bulbs for 15 to 30 minutes in warm (80°F) dip after digging. Dry bulbs and store in a cool, well-ventilated place. DO NOT replant areas where diseased bulbs were previously removed.
DAHLIA				
Botrytis Blight (Gray Mold)				
	bordeaux mixture	6 T.	---	Disease is associated with high humidity and mild temperatures. Remove plant debris. Apply when conditions favor disease. Repeat at 7- to 14-day intervals. Check fungicide label for specific treatment interval.
	fluidioxonil MEDALLION	---	2-4 oz.	Apply to point of run-off at 7- to 14-day intervals when conditions favor disease. See label for further instructions.
	iprodione CHIPCO 26GT CHIPCO 26019 50W IPRODIONE PRO SE	--- --- ---	1-2.5 qt./A 1-2.5 lb./A 1-2.5 qt.	See Comments for bordeaux mixture, above. NOT FOR RESIDENTIAL USE.

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments	
		Per Gallon	Per 100 Gallons		
Commercial Ornamentals: Disease Control—Annual Flowers, <i>Acalypha</i>–<i>Gloxinia</i>					
DAHLIA					
Botrytis Blight (Gray Mold) (cont.)					
	mancozeb			Disease is associated with high humidity and mild temperatures. Remove plant debris. Apply when conditions favor disease. Repeat at 7- to 14-day intervals. Check fungicide label for specific treatment interval. Add spreader-sticker to improve coverage.	
	DITHANE T/O	2 t.	1.5 lb.		
	FORE 80W	2 t.	1.5 lb.		
	JUNCTION	---	1.5 lb.		
	MANCOZEB DG	1.5-3 t.	1-2 lb.		
	PROTECT T/O 80W	2 t.	1.5 lb.		
	thiophanate-methyl				See Comments for mancozeb, above.
	3336 4.5F	0.5-1.25 t.	10-20 fl.oz.		
	3336 50W	2.33-4 t.	12-16 oz.		
	HALT 50W	2.5 t.	---		
	OPH 6672 50W	---	12-16 oz.		
	thiophanate methyl + flutolanil			See Comments for mancozeb, above.	
	SYS STAR WDG	---	4-8 oz.		
Leaf Spot					
	copper hydroxide			Apply at first sign of disease and reapply at 7- to 14-day intervals. See label for information on possible phytotoxicity.	
	CUPRO 2005 T/N/O	---	0.75-2 lb./A		
Powdery Mildew					
	chlorothalonil + fenarimol			Apply at first sign of disease. Repeat at 7- to 14-day intervals depending on fungicide used. Dahlia varieties vary in their susceptibility to powdery mildew.	
	TWOSOME 4.4F	0.67 T.	2 pt.		
	fenarimol			FIELD PRODUCTION: Apply at first sign of disease. Repeat sprays every 10 to 14 days. Use higher rate and shorter intervals when more than 10-percent leaf infection occurs and conditions favor disease.	
	RUBIGAN AS	---	3-5 fl.oz.		
	kresoxim-methyl			Apply as protective spray at 10- to 14-day intervals. Apply higher rate at shorter intervals when conditions favor disease.	
	CYGNUS	---	1.6-3.2 oz.		
	myclobutanil			Apply at first sign of disease and repeat at 10- to 14-day intervals. Add a non-ionic surfactant to the tank mixture.	
	EAGLE 20EW	---	8 fl.oz.		
	EAGLE WSP	---	3-6 oz.		
	IMMUNOX	2 T.	---		
	SYSTHANE WSP	---	3-6 oz.		
	piperalin			Apply low rate soon after first leaves expand or symptoms are seen. Use higher rate if mildew is already present. Repeat as needed. For greenhouse use ONLY .	
	PIPRON	---	4-8 fl.oz.		
	sulfur			See Comments for myclobutanil, above.	
	FLOTOX 90W	2.5 T.	---		
	tebuconazole			Make three applications at 7- to 14-day intervals as needed to control disease. Make first application at first sign of disease.	
	DISEASE CONTROL FOR ROSES, FLOWERS, AND SHRUBS	1.5 T.	---		
	thiophanate-methyl			Apply at first sign of disease and repeat at 10- to 14-day intervals. Add a non-ionic surfactant to tank mix of wettable powder (W) formulations.	
	3336 4.5F	0.5-1.25 t.	10-20 fl.oz.		
	3336 50W	2.33-4 t.	12-16 oz.		
	HALT 50W	2.5 t.	---		
	OHP 6672 50W	---	12-24 oz.		

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, Acalypha–Gloxinia				
DAHLIA (cont.)				
Powdery Mildew (cont.)				
	thiophanate methyl + flutolanil SYS STAR WDG	---	4-8 oz.	See Comments for thiophanate-methyl, above.
	thiophanate-methyl + iprodione 26/36 FUNGICIDE	---	33-84 fl.oz./A	Use sufficient water to thoroughly cover the leaves and stems. Reapply at 7- to 14-day intervals as needed. Use higher rate at shorter interval when disease is present. NOT FOR RESIDENTIAL USE.
	triadimefon STRIKE 25W	---	2-4 oz.	IN GREENHOUSE: Use low rate in winter. Excessive rates or applications may shorten the flower stalk.
	triflumizole TERRAGUARD SC	---	4-16 fl.oz.	Begin applications before first sign of disease. Repeat as needed every 7 to 14 days. Use higher rate at shorter intervals when disease is present.
	triforine ROSE AND SHRUB DISEASE CONTROL	1 T.	---	Apply at first sign of disease and repeat at 10- to 14-day intervals.
Verticillium Wilt				
	liquid carbamate VAPAM	See Comments.		See Annuals and Bedding Plants: Soil Pasteurization/Fumigation. Destroy diseased plants. DO NOT replant with wilt-susceptible plants.
DAYLILY				
Leaf Streak				
	chlorothalonil DACONIL ULTREX	---	1.4 lb.	Apply at first sign of spotting on leaves and repeat every 7 to 14 days as needed. Thorough coverage of leaves is critical to effective disease control. Easily confused with leaf rust on daylily.
	DACONIL WEATHER STIK 6F	---	1.38 pt.	
	LANDSCAPE AND GARDEN FUNGICIDE	2 T.	---	
Rust				
	azoxystrobin HERITAGE 50W	---	1-4 oz.	Apply at first sign of rust pustules on leaves and repeat every 7 to 14 days as needed. Alternate or tank-mix with chlorothalonil to avoid control failures due to resistance.
	chlorothalonil DACONIL ULTREX	---	1.4 lb.	Apply at first sign of rust pustules on leaves and repeat every 7 to 14 days as needed. Thorough coverage of leaves is critical to effective disease control.
	DACONIL WEATHER STIK 6F	---	1.38 pt.	
	LANDSCAPE AND GARDEN FUNGICIDE	2 T.	---	
	propiconazole BANNER MAXX	---	5-8 fl.oz.	Apply at first sign of rust pustules on leaves and repeat every 7 to 14 days as needed. Alternate or tank-mix with chlorothalonil to avoid control failures due to resistance. Use sufficient volume of water mixed with Propensity to thoroughly cover the leaves and stems. Repeat applications at 21-day intervals as needed.
	IMMUNOX	2 T.	---	
	PROPENSITY 1.3MEC	---	6-8 fl.oz.	

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, <i>Acalypha</i>–<i>Gloxinia</i>				
DAYLILY (cont.)				
Rust (cont.)				
	tebuconazole DISEASE CONTROL FOR ROSES, FLOWERS, AND SHRUBS	1.5 T.	---	Make three applications at 7- to 14-day intervals as needed to control disease. Make first application at first sign of disease.
DIANTHUS				
Leaf Spot				
	copper hydroxide CUPRO 2005 T/N/O	1.5 t.	0.75-2 lb./A	Apply at first sign of disease and reapply at 7- to 14-day intervals. See label for information on possible phytotoxicity.
	potassium bicarbonate MILSTOP	---	2-3 lb.	Use a sufficient volume of water to get thorough coverage of the foliage and apply at first sign of disease. Repeat applications every 7 to 14 days.
	propiconazole PROPENSITY 1.3MEC SYSTEMIC FUNGICIDE	--- 1 T.	6-8 fl.oz. ---	Apply every 14 days in spring as needed. Use sufficient volume of water mixed with Propensity to thoroughly cover the leaves and stems. Repeat applications at 21-day intervals as needed.
	tebuconazole DISEASE CONTROL FOR ROSES, FLOWERS, AND SHRUBS	1.5 T.	---	Make three applications at 7- to 14-day intervals as needed to control disease. Make first application at first sign of disease.
	thiophanate-methyl + iprodione 26/36 FUNGICIDE	---	33-84 fl.oz./A	Use sufficient water to thoroughly cover the leaves and stems. Reapply at 7- to 14-day intervals as needed. Use higher rate at shorter interval when disease is present. NOT FOR RESIDENTIAL USE.
Rhizoctonia Root, Crown, and Shoot Blight				
	fluidioxonil MEDALLION	---	See Comments.	See Annuals and Bedding Plants: Rhizoctonia Damping-Off, Root and Crown Rot.
	flutolanil PROSTAR 70WP	---	3-6 oz.	DRENCH: Apply enough water to wet the roots. Reapply as needed at 21- to 28-day intervals. See label for additional instructions.
	iprodione CHIPCO 26GT CHIPCO 26019 50W IPRODIONE PRO SE	--- --- ---	1-2.75 qt. 1-2.5 lb./A 1-2.5 qt.	SOIL DRENCH/HEAVY SPRAY: Thoroughly wet foliage and soil. Apply 1 to 2 pints of spray mixture per square foot of bed or bench area. Repeat every 14 days after transplanting. NOT FOR RESIDENTIAL USE.

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, <i>Acalypha</i>–<i>Gloxinia</i>				
DIANTHUS (cont.)				
Rhizoctonia Root, Crown, and Shoot Blight (cont.)				
	thiophanate-methyl 3336 4.5F	0.5-1.25 t.	16-20 fl.oz.	Apply every 2 to 4 weeks at 1 to 2 pints of spray mixture per square foot of bed or bench area.
	3336 50W	2.33-4 t.	12-16 oz.	
	HALT 50W	2.5 t.	---	
	OHP 6672 4.5L	---	20 fl.oz.	
	OHP 6672 50W	---	12-16 oz.	
	thiophanate-methyl + flutolanil SYS STAR WDG	---	2-4 oz.	DRENCH: Apply 1 to 2 pints per square foot of bed or bench area. Repeat as needed for control.
	thiophanate-methyl + iprodione 26/36 FUNGICIDE	---	33-84 fl.oz./A	HEAVY SPRAY/DRENCH: Use sufficient water to thoroughly cover the leaves and stems. Reapply at 7- to 14-day intervals as needed. Use higher rate at shorter interval when disease is present. NOT FOR RESIDENTIAL USE.
	trifloxystrobin COMPASS O	---	0.5 oz.	DRENCH: Apply as a drench to upper half of growing medium. Start treatments at seeding; repeat at transplanting and at 21- to 28-day intervals as needed.
	triflumizole TERRAGUARD SC	---	4-8 fl.oz.	SOIL DRENCH: Apply at 2- to 4-week intervals as needed.
Rust				
	azoxystrobin HERITAGE 50W	---	1-4 oz.	FOLIAR SPRAY: Apply at first sign of disease and then every 7 to 28 days as needed.
	myclobutanil EAGLE 20EW	---	8 fl.oz.	Apply at first sign of disease and repeat every 10 to 14 days. Add a non-ionic surfactant to the tank mixture. Systhane has been cleared for greenhouse use.
	EAGLE WSP	---	3-6 oz.	
	IMMUNOX	2 T.	---	
	SYSTHANE WSP	---	3-6 oz.	
	tebuconazole DISEASE CONTROL FOR ROSES, FLOWERS, AND SHRUBS	1.5 T.	---	Make three applications at 7- to 14-day intervals as needed to control disease. Make first application at first sign of disease.
	triadimefon SYSTEMIC FUNGI- CIDE FOR TURF AND ORNAMEN- TALS	1-2 T. (0.5-1 fl.oz.)	---	Apply as a full cover spray when symptoms first appear. Repeat every 7 to 14 days.
	trifloxystrobin COMPASS O	---	2-4 oz.	See Comments for myclobutanil, above.
DUSTY MILLER				
Alternaria Leaf Spot				
	copper sulfate pentahydrate PHYTON 27	---	15-30 fl.oz.	Apply at first sign of disease and repeat every 7 to 14 days as needed.

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, <i>Acalypha</i>–<i>Gloxinia</i>				
DUSTY MILLER (cont.)				
Alternaria Leaf Spot (cont.)				
	potassium bicarbonate MILSTOP	---	2-5 lb.	Apply at first sign of disease. Use enough water to get thorough coverage of the foliage. Repeat applications every 7 to 14 days.
	trifloxystrobin COMPASS O	---	2-4 oz.	Apply when conditions favor disease and repeat every 7 to 14 days as needed.
Bacterial Leaf Spot				
	copper hydroxide CUPRO 2005 T/N/O	1.5 t.	0.75-2 lb./A	Apply at first sign of disease and reapply at 7- to 14-day intervals. See label for information on possible phytotoxicity.
	copper sulfate pentahydrate PHYTON 27	---	15-30 fl.oz.	See Comments for copper hydroxide, above.
Botrytis Blight				
	trifloxystrobin COMPASS O	---	2-4 oz.	Apply when conditions favor disease and repeat every 7 to 14 days as needed.
EASTER LILY				
Bacterial Wilt				
	liquid carbamate VAPAM	See Comments.		See Annuals and Bedding Plants: Soil Pasteurization/Fumigation. Treatment may be of little value. Avoid areas where tomatoes have been grown. Destroy diseased plants. Vapam is a RESTRICTED USE pesticide.
Fusarium Wilt				
	liquid carbamate VAPAM	See Comments.		See Annuals and Bedding Plants: Soil Pasteurization/Fumigation. Soil fumigation is effective for 1 year. Destroy diseased plants. DO NOT replant with wilt-susceptible plants. Vapam is a RESTRICTED USE pesticide.
Rhizoctonia Root Rot				
	PCNB DEFEND 2F	---	1.5-2.25 gal.	TUBER DIP: Dip in solution for 5 to 15 minutes.
	PCNB 75W	---	4-6 lb.	
Root Rot				
	mefenoxam SUBDUE MAXX	---	0.5-1 fl.oz.	SOIL DRENCH: Make one drench at planting per crop. SURFACE APPLICATION: Make single application at 30 ounces per 1000 square feet of bench area per crop.
	SUBDUE 2X WSP	---	0.1-0.5 oz.	
Tuber Rot				
	None labeled	See Comments.		Destroy diseased tubers. Dig up tubers and store in peat moss in cool, dry place.

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, Acalypha–Gloxinia				
EXACUM				
Botrytis Blight				
	copper sulfate pentahydrate PHYTON 27	---	13-20 fl.oz.	Use sufficient volume of water to thoroughly cover the leaves and stems. Repeat applications at 7- to 14-day intervals as needed to control disease. May be applied as often as 3 to 5 days when disease is severe.
	thiophanate-methyl + iprodione 26/36 FUNGICIDE	---	33-84 fl.oz./A	Use sufficient water to thoroughly cover the leaves and stems. Reapply at 7- to 14-day intervals as needed. Use higher rate at shorter interval when disease is present. NOT FOR RESIDENTIAL USE.
	triflumizole TERRAGUARD SC	---	4-8 fl.oz.	Begin application before first sign of disease. Repeat as needed every 7 to 14 days. Use higher rate at shorter intervals when disease is present.
GAILLARDIA				
Powdery Mildew				
	myclobutanil EAGLE 20EW	---	8 fl.oz.	Apply at first sign of disease and repeat at 10- to 14-day intervals. Add a non-ionic surfactant to the tank mixture of wettable powder (W) formulation. Systhane has been cleared for greenhouse use.
	EAGLE WSP	---	3-6 oz.	
	IMMUNOX	2 T.	---	
	SYSTHANE WSP	---	3-6 oz.	
	thiophanate methyl + flutolanil SYS STAR WDG	---	4-8 oz.	Apply at first sign of disease and repeat at 10- to 14-day intervals. Add a non-ionic surfactant to the tank mixture of wettable powder (W) formulations.
Rust				
	myclobutanil EAGLE 20EW	---	8 fl.oz.	Apply at first sign of disease and repeat at 10- to 14-day intervals. Add a non-ionic surfactant to the tank mixture. Systhane has been cleared for greenhouse use.
	EAGLE WSP	---	3-6 oz.	
	IMMUNOX	2 T.	---	
	SYSTHANE WSP	---	3-6 oz.	
	tebuconazole DISEASE CONTROL FOR ROSES, FLOWERS, AND SHRUBS	1.5 T.	---	Make three applications at 7- to 14-day intervals as needed to control disease. Make first application at first sign of disease.
GERANIUM				
Alternaria Leaf Spot				
	azoxystrobin HERITAGE 50W	---	1-4 oz.	Apply at the first sign of disease and repeat at 14- to 28-day intervals.
	bordeaux mixture	4 T.	---	Apply at first sign of disease. Repeat at 7- to 10-day intervals.
	chlorothalonil DACONIL ULTREX	---	1.4 lb.	Apply every 7 to 14 days as needed.
	DACONIL WEATHER	---		
	STIK 6F	---	1.38 pt.	
	ECHO 720	---	1.38 pt.	
	LANDSCAPE AND GARDEN FUNGICIDE	2 T.	---	

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, <i>Acalypha</i>–<i>Gloxinia</i>				
GERANIUM				
Alternaria Leaf Spot (cont.)				
	chlorothalonil + thiophanate-methyl SPECTRO 90	—	1-2 lb.	See Comments for chlorothalonil, above.
	copper ammonium complex LIQUID COPPER FUNGICIDE	2 t.	---	Apply at first sign of disease and repeat applications every 7 to 14 days as needed. Shorten application interval when disease is severe.
	copper hydroxide CUPRO 2005 T/N/O	1.5 t.	0.75-2 lb./A	Apply at first sign of disease and reapply at 7- to 14-day intervals. See label for information on possible phytotoxicity.
	iprodione CHIPCO 26019 50W	---	1-2.5 lb./A	Apply as full cover spray at 7- to 14-day intervals, as needed, before onset of disease. NOT FOR RESIDENTIAL USE.
	IPRODIONE PRO SE	---	1-2.5 qt.	
	SEXTANT 2F	---	1-2.75 qt.	
	kresoxim-methyl CYGNUS	---	1.6-3.2 oz.	Apply as protective spray at 10- to 14-day intervals. Apply higher rate at shorter intervals when conditions favor disease.
	mancozeb JUNCTION	---	1.5 lb.	Apply at 7- to 10-day intervals. Add spreader-sticker to improve coverage of foliage.
	PROTECT T/O	---	1.5 lb.	
	potassium bicarbonate MILSTOP	---	2-5 lb.	Use a sufficient volume of water to get thorough coverage of foliage and apply at first sign of disease. Repeat applications every 7 to 14 days.
	thiophanate-methyl + iprodione BENEFIT	---	17-34 fl.oz.	Apply to point of run-off. Repeat at 10- to 14-day intervals as needed. See label for further directions.
Bacterial Leaf Spot and Stem Rot				
	bordeaux mixture	4 T.	---	Apply at first sign of disease. Repeat at 7- to 10-day intervals. Effectiveness is questionable. Bacteria is found in nearly all commercial stock. Prevention is needed for control in greenhouse. Purchase clean indexed stock for propagation. Follow strict sanitation practices including the use of sterile soil and containers, dipping all tools, and cleaning benches. Discard diseased plants. DO NOT water or fertilize too much.

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, Acalypha–Gloxinia				
GERANIUM (cont.)				
Bacterial Leaf Spot and Stem Rot (cont.)				
	copper sulfate pentahydrate PHYTON 27	---	15-50 fl.oz.	Apply at first sign of disease. Repeat at 7- to 10-day intervals. Effectiveness is questionable. Bacteria is found in nearly all commercial stock. Prevention is needed for control in greenhouse. Purchase clean indexed stock for propagation. Follow strict sanitation practices including using sterile soil and containers, dipping all tools, and cleaning benches. Discard diseased plants. DO NOT water or fertilize too much.
Botrytis Blight (Gray Mold)				
<i>This disease is associated with high humidity and mild temperatures. In greenhouse, ventilate while heating to dry air. Clean up debris and allow good air circulation.</i>				
	azoxystrobin HERITAGE 50W	---	2-4 oz.	FOLIAR SPRAY: Apply at first sign of disease and then every 7 to 21 days as needed.
	chlorothalonil CONCORDE DF	---	1 lb.	Apply when conditions favor disease. Repeat at 7- to 14-day intervals. Check fungicide label for treatment interval.
	ULTREX	---	1.4 lb.	
	DACONIL WEATHER STIK 6F	---	1.38 pt.	
	ECHO DF	---	1.25 lb.	
	FUNG-ONIL	2.25 t.	---	
	LANDSCAPE AND GARDEN FUNGICIDE	2 T.	---	
	chlorothalonil EXOTHERM LANDSCAPE AND GARDEN FUNGICIDE TERMIL 20F	See Comments. 2 T.		SMOKE FUMIGATION IN GREENHOUSE: One can treats 1000 square feet. DO NOT treat at temperatures above 75°F.
	chlorothalonil + fenarimol TWSOME 4.4F	0.67 T.	2 pt.	Apply when conditions favor disease. Repeat at 7- to 14-day intervals. Check fungicide label for treatment interval.
	chlorothalonil + thiophanate-methyl SPECTRO 90	—	1-2 lb.	See Comments for chlorothalonil, above..
	copper ammonium complex LIQUID COPPER FUNGICIDE	2 t.	---	Apply at first sign of disease and repeat applications every 7 to 14 days as needed. Shorten application interval when disease is severe.
	copper sulfate pentahydrate PHYTON 27	---	15-20 fl.oz.	Apply when conditions favor disease. Repeat at 7- to 14-day intervals. Check fungicide label for treatment interval.
	iprodione CHIPCO 26GT	---	1-2.75 qt.	See Comments for copper sulfate pentahydrate, above. NOT FOR RESIDENTIAL USE.
	CHIPCO 26019 50W	---	1-2.5 lb./A	
	IPRODIONE PRO SE	---	1-2.5 qt.	
	SEXTANT 2F	---	1-2.75 qt.	

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, Acalypha–Gloxinia				
GERANIUM (cont.)				
Botrytis Blight (Gray Mold) (cont.)				
	thiophanate-methyl 3336 4.5F	0.5-1.25 t.	10-20 fl.oz.	Apply when conditions favor disease. Repeat at 7- to 14-day intervals. Check fungicide label for treatment interval.
	3336 50W	2.33-4 t.	12-16 oz.	
	HALT 50W	1.5 t.	---	
	OPH 6672 50W	---	12-16 oz.	
	thiophanate-methyl + flutolanil SYS STAR WDG	---	4-8 oz.	Apply when conditions favor disease. Repeat at 7- to 14-day intervals. Check fungicide label for treatment interval.
	thiophanate-methyl + iprodione BENEFIT	---	17-34 fl.oz.	Apply to point of run-off. Repeat at 10- to 14-day intervals as needed. See label for further directions.
	26/36 FUNGICIDE	---	33-84 fl.oz./A	Use sufficient water to thoroughly cover the leaves and stems. Reapply at 7- to 14-day intervals as needed. Use higher rate at shorter interval when disease is present. NOT FOR RESIDENTIAL USE.
	triflumizole TERRAGUARD SC	---	4-8 fl.oz.	Begin application before first sign of disease. Repeat as needed every 7 to 14 days. Use higher rate at shorter intervals when disease is present.
	trifloxystrobin COMPASS O	---	2-4 oz.	Apply when conditions favor disease and repeat every 7 to 14 days as needed.
Phytophthora Root Rot				
	dimethomorph STATURE DM	---	3.2-6.4 oz.	DRENCH: Apply when roots are well established or at first sign of disease. Repeat applications at 10- to 14-day intervals throughout production cycle.
	fenamidone FENSTOP	---	7-14 fl.oz.	SOIL DRENCH: Covers 400 square feet of bed or bench area. Repeat applications as needed on a 28-day schedule. Do not make more than four applications per season. NOT FOR RESIDENTIAL USE.
	potassium salts of phosphorous acid ALUDE	See Comments		FOLIAR SPRAY: Apply to thoroughly wet foliage and repeat every 14 to 21 days as needed. DRENCH: Apply 25 gallons of solution to 100 square feet of bed area and repeat monthly as needed.

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, <i>Acalypha</i>–<i>Gloxinia</i>				
GERANIUM (cont.)				
Powdery Mildew				
	azoxystrobin HERITAGE 50W	---	1-4 oz.	Apply at first sign of disease and repeat at 14- to 28-day intervals.
	myclobutanil EAGLE 20EW	---	8 fl.oz.	Apply at first sign of disease and repeat at 10- to 14-day intervals. Add a non-ionic surfactant to the tank mixture. Systhane has been cleared for green-house use
	EAGLE WSP	---	3-6 oz.	
	IMMUNOX	2 T.	---	
	SYSTHANE WSP	---	3-6 oz.	
Pythium Blackleg, Root and Crown Rot				
	etrifiazole TERRAZOLE 35W	See Comments.		See African Violet: Phytophthora Root and Crown Rot; Annuals and Bedding Plants: Disinfestation of Equipment and Soil Sterilization/Fumigation.
	TRUBAN 30W			
	TRUBAN 25E			
	TRUBAN 5G			
	etrifiazole + thiophanate-methyl BANROT 8G			See African Violet: Phytophthora Root and Crown Rot; Annuals and Bedding Plants: Disinfestation of Equipment and Soil Sterilization/Fumigation.
	BANROT 40W			
	fosetyl-AI ALIETTE WDG			See Comments for etridiazole + thiophanate-methyl, above.
	mefenoxam SUBDUE GR			See Comments for etridiazole + thiophanate-methyl, above.
	SUBDUE MAXX			
	SUBDUE 2X WSP			
	propamocarb BANOL 66.5 S			See Comments for etridiazole + thiophanate-methyl, above.
Rust				
	azoxystrobin HERITAGE 50W	---	1-4 oz.	Apply at first sign of disease and repeat at 14- to 28-day intervals.
	chlorothalonil CONCORDE DF	---	1 lb.	Apply at first sign of disease. Repeat at 7- to 14-day intervals. Destroy infected leaves.
	ULTREX	---	1.4 lb.	
	DACONIL WEATHER	---	1.38 pt.	
	STIK 6F			
	LANDSCAPE AND GARDEN FUNGICIDE	2 T.	---	
	myclobutanil EAGLE 20EW	---	8 fl.oz.	Apply at first sign of disease and repeat at 10- to 14-day intervals. Add a non-ionic surfactant to the tank mixture. Systhane has been cleared for green-house use.
	EAGLE WSP	---	3-6 oz.	
	IMMUNOX	2 T.	---	
	SYSTHANE WSP	---	3-6 oz.	
	triadimefon STRIKE 25W	---	2-4 oz.	IN GREENHOUSE: Repeat sprays at 30-day intervals. Excessive rates or applications may shorten the flower stalk.
	SYSTEMIC FUNGICIDE FOR TURF AND ORNAMENTALS	1-2 T.	---	

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, <i>Acalypha–Gloxinia</i>				
GERBER DAISY				
Botrytis Blight (Gray Mold)				
	chlorothalonil CONCORDE DF	---	1-2.5 lb.	Disease is associated with high humidity and mild temperatures. In greenhouse, ventilate while heating air. Discard plant debris. Apply fungicides when conditions favor disease. Repeat at 7- to 14-day intervals.
	DACONIL ULTREX	---	1.4 lb.	
	DACONIL WEATHER STIK 6F	---	1.38 pt.	
	DACONIL ZN	2 t.	2 pt.	
	ECHO 720	---	1.38 pt.	
	LANDSCAPE AND GARDEN FUNGICIDE	2 T.	---	
	chlorothalonil + thiophanate-methyl SPECTRO 90	---	1-2 lb.	
	copper sulfate pentahydrate PHYTON 27	---	15-25 fl.oz.	Disease is associated with high humidity and mild temperatures. In greenhouse, ventilate while heating air. Discard plant debris. Apply fungicides when conditions favor disease. Repeat at 7- to 14-day intervals.
	fluidioxonil MEDALLION	---	2-4 oz.	Apply to point of run-off at 7- to 14-day intervals when conditions favor disease. See label for further instructions.
	thiophanate-methyl 3336 4.5F	0.5-1.25 t.	10-20 fl.oz.	See Comments for copper sulfate pentahydrate, above.
	3336 50W	2.33-4 t.	12-16 oz.	
	HALT 50W	1.5 t.	---	
	OPH 6672 50W	---	12-16 oz.	
	thiophanate methyl + flutolanil SYS STAR WDG	---	4-8 oz.	See Comments for copper sulfate pentahydrate, above.
	trifloxystrobin COMPASS O	---	2-4 oz.	Apply when conditions favor disease and repeat every 7 to 14 days as needed. Do not apply to plants in bloom.
	triflumizole TERRAGUARD SC	---	4-8 fl.oz.	Begin application before first sign of disease. Repeat as needed every 7 to 14 days. Use higher rate at shorter intervals when disease is present.
Powdery Mildew				
	azoxystrobin HERITAGE 50W	---	1-4 oz.	Apply at first sign of disease and repeat at 14- to 28-day intervals.
	copper sulfate pentahydrate PHYTON 27	---	15-25 fl.oz.	Use sufficient volume of water to thoroughly cover the leaves and stems. Repeat applications at 7- to 14-day intervals as needed to control disease. May be applied as often as 3 to 5 days when disease is severe.
	fluidioxonil MEDALLION	---	2-4 oz.	Apply to point of run-off at 7- to 14-day intervals when conditions favor disease. See label for further instructions.

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, Acalypha–Gloxinia				
GERBER DAISY (cont.)				
Powdery Mildew (cont.)				
	myclobutanil EAGLE 20EW	---	8 fl.oz.	Apply at first sign of disease. Repeat at 10- to 14- day intervals. Add a nonphytotoxic spray adjuvant to improve spray coverage and fungicide performance.
	EAGLE WSP	---	3-6 oz.	
	IMMUNOX	2 T.	---	
	SYSTHANE WSP	---	3-6 oz.	
	paraffinic oil SUNSPRAY ULTRA FINE OIL	2.5 -5 T.	1% v/v	Apply at first sign of disease and reapply every 1 to 2 weeks. Do not apply when temperatures exceed 85°F.
	tebuconazole DISEASE CONTROL FOR ROSES, FLOWERS, AND SHRUBS	1.5 T.	---	Make three applications at 7- to 14-day intervals as needed to control disease. Make first application at first sign of disease.
	thiophanate-methyl 3336 4.5F	0.5-1.25 t.	10-20 fl.oz.	Apply at first sign of disease. Repeat at 10- to 14- day intervals. Add a nonphytotoxic spray adjuvant to improve spray coverage and fungicide performance.
	3336 50W	2.33-4 t.	12-24 oz.	
	HALT 50W	1.5 t.	---	
	OHP 6672 50W	---	12-24 oz.	
	thiophanate methyl + flutolanil SYS STAR WDG	---	4-8 oz.	See Comments for thiophanate-methyl, above.
	trifloxystrobin COMPASS O	---	1-2 oz.	Apply when conditions favor disease and repeat every 7 to 14 days as needed. Do not apply to plants in bloom.
	triflumizole TERRAGUARD SC	---	4-16 fl.oz.	Begin application before first sign of disease. Repeat as needed every 7 to 14 days. Use higher rate at shorter intervals when disease is present.
Pythium Root and Crown Rot				
	etridiazole TERRAZOLE 35W TRUBAN 30W TRUBAN 25E TRUBAN 5G	See Comments.		See African Violet: Phytophthora Root and Crown Rot; Annuals and Bedding Plants: Disinfestation of Equipment and Soil Pasteurization/Fumigation.
	etridiazole + thiophanate-methyl BANROT 8G BANROT 40W			See African Violet: Phytophthora Root and Crown Rot; Annuals and Bedding Plants: Disinfestation of Equipment and Soil Pasteurization/Fumigation.

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments	
		Per Gallon	Per 100 Gallons		
Commercial Ornamentals: Disease Control—Annual Flowers, <i>Acalypha</i>–<i>Gloxinia</i>					
GLADIOLUS					
Botrytis Blight (Gray Mold)					
	chlorothalonil			Disease is associated with high humidity and mild temperatures. Discard plant debris. Apply when conditions favor disease. Repeat at 7- to 14-day intervals.	
	CONCORDE DF	---	1 lb.		
	ULTREX	---	1.4 lb.		
	DACONIL WEATHER STIK 6F	---	1.38 pt.		
	ECHO DF	---	1.25 lb.		
	FUNG-ONIL	2.25 t.	---		
	LANDSCAPE AND GARDEN FUNGICIDE	2 T.	---		
	chlorothalonil + thiophanate-methyl				See Comments for chlorothalonil, above.
	SPECTRO 90	---	1-2 lb.		
	iprodione				See Comments for chlorothalonil, above. NOT FOR RESIDENTIAL USE.
	CHIPCO 26GT	---	1-2.75 qt.		
	CHIPCO 26019 50W	---	1-2.5 lb./A		
	IPRODIONE PRO SE	---	1-2.5 qt.		
	SEXTANT 2F	---	1-2.75 qt.		
	mancozeb			Spray weekly before disease appears; spray two to three times per week during periods of heavy rain. Use half-rate on flower spikes.	
	DITHANE T/O	3 t.	1.5 lb.		
	FORE 80W	3 t.	1.5 lb.		
	FORE FLOWABLE	---	1.2 qt.		
	MANCOZEB DG	1.5-3 t.	1-2 lb.		
	PROTECT T/O 80W	3 t.	1.5 lb.		
	thiophanate-methyl			See Comments for mancozeb, above.	
	3336 4.5F	0.5-1.25 t.	10-20 fl.oz.		
	3336 50W	2.33-4 t.	12-16 oz.		
	HALT 50W	1.5 t.	---		
	OPH 6672 50W	---	12-16 oz.		
Corm Rot					
	captan			Discard diseased corms. Soak healthy corms for 15 to 30 minutes in warm (80°-85°F) solution. Dry and store in cool (40°-50°F), dry place. Dip corms in solution for 20 to 30 minutes, drain, and plant.	
	CAPTAN 50W	8 T.	---		
	ORTHOCLIDE 50W	8 T.	---		
	iprodione			Discard diseased corms. Soak healthy corms for 5 minutes in warm (80°-85°F) solution. Dry and store in cool (40°-50°F), dry place. Dip corms in solution for 20 to 30 minutes, drain, and plant. NOT FOR RESIDENTIAL USE.	
	CHIPCO 26GT	---	2 qt.		
	CHIPCO 26019 50W	---	1-2.5 lb./A		
	IPRODIONE PRO SE	---	1-2.5 qt.		
	PCNB			BROADCAST PREPLANT: Apply evenly over 1000 square feet of bed area and thoroughly incorporate to a depth of 4 to 6 inches.	
	DEFEND 2L	---	1.33 gal.		
	DEFEND 10G	---	23 lb.		
	DEFEND 75W	---	3.5 lb.		
	thiophanate-methyl			Dip immediately after digging and cleaning for 30 minutes in a warm dip (80 to 85°F). Dry; then store in cool, dry space.	
	HALT 50W	2.5 t.	---		

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, Acalypha–Gloxinia				
GLADIOLUS (cont.)				
Curvularia Leaf Spot				
	chlorothalonil CONCORDE DF	---	1 lb.	Apply at first sign of disease. Repeat at 7- to 14-day intervals.
	DACONIL ULTREX	---	1.4 lb.	
	DACONIL WEATHER STIK 6F	---	1.38 pt.	
	ECHO 720	---	1.38 pt.	
	FUNG-ONIL	2.25 t.	---	
	LANDSCAPE AND GARDEN FUNGICIDE	2 T.	---	
	chlorothalonil + thiophanate-methyl SPECTRO 90	---	1-2 lb.	See Comments for chlorothalonil, above.
	mancozeb DITHANE T/O	2 t.	1.5 lb.	Spray weekly before disease appears; spray two to three times per week during periods of heavy rain. Use half-rate on flower spikes.
	FORE 80W	2 t.	1.5 lb.	
	FORE FLOWABLE	---	1.2 qt.	
	PROTECT T/O 80W	2 t.	1.5 lb.	
Dry Rot				
	See Comments.			See Annuals and Bedding Plants: Soil Pasteurization/Fumigation.
GLOXINIA				
	See African Violet.			

Commercial Ornamentals: Disease Control—Annual Flowers, Acalypha–Gloxinia prepared by Austin K. Hagan, *Extension Plant Pathologist*, Alumni Professor, Entomology and Plant Pathology, Auburn University.

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For more information, call your county Extension office. It is listed in your telephone directory under your county's name.

Use pesticides **only** according to the directions on the label. Follow all directions, precautions, and restrictions that are listed. Do not use pesticides on plants that are not listed on the label.

The pesticide rates in this publication are recommended **only** if they are registered with the Environmental Protection Agency or the Alabama Department of Agriculture and Industries. If a registration is changed or cancelled, the rate listed here is no longer recommended. Before you apply **any** pesticide, check with your county Extension agent for the latest information.

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