



DISEASE CONTROL Annual Flowers, Impatiens–Zinnia

Commercial Ornamentals: Disease Control—Annual Flowers, Impatiens–Zinnia				
Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
IMPATIENS (Balsam)				
Alternaria 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. When applied to plants in bloom, may spot the petals.
	copper sulfate pentahydrate PHYTON 27	---	15-35 fl.oz.	Apply at first sign of disease and repeat every 7 to 14 days as needed.
	iprodione CHIPCO 26019 50W	---	1-2.5 lb./A	Apply as a 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.	
	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.
	trifloxystrobin COMPASS O	---	2-4 oz.	Apply when conditions favor disease and repeat every 7 to 14 days as needed.
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 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 possibly phytotoxicity.
	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, Impatiens–Zinnia				
IMPATIENS (Balsam)(cont.)				
Bacterial Wilt				
	None labeled		See Comments.	See Annuals and Bedding Plants: Soil Pasteurization/Fumigation. Destroy diseased plants. DO NOT replant any solanaceous flowers or vegetables without soil fumigation.
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.
	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. When applied to plants in bloom, may spot the petals.
	copper sulfate pentahydrate PHYTON 27	---	13-15 fl.oz.	Use sufficient volume of water to thoroughly cover the leaves and stems. Repeat application 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.	Apply at 7- to 14-day intervals to point of run-off.
	iprodione CHIPCO 26GT	---	1-2.5 qt./A	Disease is associated with high humidity and mild temperatures. In greenhouse, ventilate while heating to dry air. Dispose of plant debris. Apply when conditions favor disease development. Repeat at 7- to 14-day intervals. 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.	See Comments for iprodione, above.
	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. See label for further directions. May damage blooms of impatiens.
	trifloxystrobin COMPASS O	---	2-4 oz.	Apply when conditions favor 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, Impatiens—Zinnia				
IMPATIENS (Balsam) (cont.)				
Damping-Off				
	fosetyl-AI ALIETTE WDG	See Comments.		See Annuals and Bedding Plants: Phytophthora Damping-Off and Soil Pasteurization/Fumigation.
	propamocarb BANOL 67S			See Comments for fosetyl-AI, above.
Phytophthora Crown Rot				
	etr Diazole TERRAZOLE 35W TRUBAN 30W TRUBAN 5G	See Comments.		See African Violet: Phytophthora Root and Crown Rot; Disinfestation of Equipment and Soil Pasteurization/Fumigation.
	fosetyl-AI ALIETTE WDG	---	1.25-4 lb.	FOLIAR SPRAY: Apply monthly.
Phytophthora Root Rot				
	dimethomorph STATURE DM STATURE SC	---	3.2-6.4 oz. 3-6.1 fl.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.
	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.
	<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.
Rhizoctonia Crown Rot				
	azoxystrobin HERITAGE 50W	---	1-4 oz.	FOLIAR SPRAY: Apply every 7 to 28 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; General Root and Crown Rot Control.
	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.	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 SEXTANT 2F	See Comments. --- --- ---	1-2.5 lb./A 1-2.5 qt. 1-2.75 qt.	See Comments for etridiazole + thiophanate-methyl, 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, Impatiens—Zinnia				
IMPATIENS (Balsam) (cont.)				
Rhizoctonia Crown Rot (cont.)				
	PCNB			See Annuals and Bedding Plants: Rhizoctonia Damping-Off, Root and Crown Rot; General Root and Crown Rot Control.
	DEFEND 2L	See Comments.		
	DEFEND 75W			
	TERRACLOR 75W			
	thiophanate-methyl			See Comments for PCNB, above.
	3336 4.5F	See Comments.		
	3336 50W			
	3336 G			
	HALT 50W			
	OHP 6672 4.5F			
	OHP 6672 50W			
	thiophanate methyl + flutolanil			DRENCH: Apply 1 to 2 pints per square foot of bed or bench area. Repeat as needed for control.
	SYS STAR WDG	---	2-4 oz.	
	thiophanate-methyl + iprodione			HEAVY SPRAY/DRENCH: Use sufficient water to thoroughly wet the roots and surrounding potting medium. Reapply at 7- to 14-day intervals as needed. Use higher rate at shorter interval when disease is present. NOT FOR RESIDENTIAL USE.
	26/36 FUNGICIDE	---	33-84 fl.oz./A	
	trifloxystrobin			DRENCH: Apply as a drench to upper half of growing medium. Start treatments at seeding and repeat at transplanting and at 21- to 28-day intervals as needed. DO NOT apply to New Guinea impatiens.
	COMPASS 50 W	---	0.5 oz.	
	triflumizole			See Annuals and Bedding Plants: Rhizoctonia Damping-Off, Root and Crown Rot; General Root and Crown Rot Control.
	TERRAGUARD SC	See Comments.		
Tomato Spotted Wilt Virus				
	None labeled	See Comments.		Destroy diseased plants. Control thrips vector with insecticides.
IRIS				
Bacterial Soft Rot				
	None labeled	See Comments.		Affected rhizomes are slimy and foul smelling. Destroy all diseased plants. Avoid wounding rhizomes when digging. Allow cut surfaces to dry before planting. Plant iris in sunny, well-drained beds. Control iris borers.

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, Impatiens–Zinnia				
IRIS (cont.)				
Blossom Blight (Botrytis Blight)				
	chlorothalonil			Disease is associated with high humidity and mild temperatures. In greenhouse, use heating and ventilation to dry foliage. Dispose of any plant debris. Apply when conditions favor disease development. Repeat at 7- to 14-day intervals.
	CONCORDE DF	---	1 lb.	
	DACONIL ULTREX	---	1.4 lb.	
	DACONILWEATHER	---	1.38 pt.	
	STIK 6F			
	ECHO DF	---	1.25 lb.	
	FUNG-ONIL	2.25 t.	---	
	LANDSCAPE AND GARDEN FUNGICIDE	2 T.	---	
	chlorothalonil + fenarimol			
	TWOSOME 4.4F	0.67 T.	2 pt.	
	copper sulfate pentahydrate			Use sufficient volume of water to thoroughly cover the leaves and stems. Repeat application 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.
	PHYTON 27	---	13-20 fl.oz.	
	iprodione			See Comments for chlorothalonil, above. NOT FOR RESIDENTIAL USE.
	CHIPCO 26GT	---	1-2.5 qt./A	
	CHIPCO 26019 50W	--- --	1-2.5 lb./A	
	IPRODIONE PRO SE	---	1-2.5 qt.	
	SEXTANT 2F	---	1-2.75 qt.	
	thiophanate-methyl			Apply when conditions favor disease development. Repeat at 7- to 14-day 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.	
	trifloxystrobin			Apply when conditions favor disease development. Repeat at 7- to 14-day intervals.
	COMPASS O	---	2-4 oz.	
Crown Rot (<i>Sclerotium rolfsii</i>)				
	flutolanil			DRENCH: Apply enough water to wet the roots. Reapply as needed at 21- to 28-day intervals. See label for additional instructions.
	CONTRAST 70WSP	---	3-6 oz.	
	PROSTAR 70WP	---	3-6 oz.	
	PCNB			PREPLANT SOIL DRENCH: Covers 1000 square feet of bed area. Incorporate in top 6 inches. BANDED SOIL DRENCH: Apply as spray or dust on 12-inch band centered over row. Repeat sprays three times at 15-day intervals. BULB DIP: Dip bulbs for 5 minutes with good agitation; then, dry and plant. Add 1-percent sticker to solution. PREPLANT SOIL DRENCH FOR DUTCH IRIS: Covers 1000 square feet of bed area. Incorporate to depth of 2 to 3 inches.
	DEFEND 75W	---	3.25-6.5 lb.	
	REVERE WSP	---	0.5 lb./1000 row ft.	
	TERRACLOR 75W	---	2 lb./3.2 gal. water	
		---	3.25-4.5 lb.	

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, Impatiens–Zinnia				
IRIS (cont.)				
Fusarium Basal Rot				
	thiophanate-methyl 3336 4.5F	0.75-1.25 t.	33 fl.oz.	BULB DIP: Soak bulbs in warm dip (80°-85°F) for 15 to 30 minutes. Dry and store in cool, dry place.
	3336 50W	2.33-4 t.	12-16 oz.	
	HALT 50W	2.5 t.	---	
	OHP 6672 4.5L	---	33 fl.oz.	
	OHP 6672 50W	---	12-16 oz.	
Inkspot				
	chlorothalonil CONCORDE DF	---	1 lb.	Destroy iris foliage in fall or early spring. Apply as shoots emerge and repeat at 7- to 14-day intervals. Repeated applications of Bayleton may shorten flower stalks.
	DACONIL ULTREX	---	1.4 lb.	
	DACONILWEATHER STIK 6F	---	1.38 pt.	
	ECHO DF	---	1.25 lb.	
	LANDSCAPE AND GARDEN FUNGICIDE	2 T.	---	
	chlorothalonil + thiophanate-methyl SPECTRO 90	---	1-2 lb.	
	iprodione CHIPCO 26GT	---	1-2.5 qt./A	Destroy diseased bulbs. Spray remaining bulbs at 7- to 14-day intervals. NOT FOR RESIDENTIAL USE.
	CHIPCO 26019 50W	---	1-2.5 lb./A	
	IPRODIONE PRO SE	---	1-2.5 qt.	
	mancozeb DITHANE T/O	3 t.	1.5 lb.	Destroy iris foliage in fall or early spring. Apply as shoots emerge and repeat at 7- to 14-day intervals. Repeated applications of Bayleton may shorten flower stalks.
	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.	
	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. For landscape use only.
	EAGLE WSP	2 T.	3-6 oz.	
	IMMUNOX	---	---	
	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.
Leaf Spot (<i>Heterosporium</i> species)				
	bordeaux mixture	6 T.	---	Destroy diseased foliage in fall or early spring. Apply as shoots emerge. Repeat every 7 to 14 days.
	chlorothalonil CONCORDE DF	---	1 lb.	Destroy diseased foliage in fall or early spring. Apply as shoots emerge. Repeat every 7 to 14 days.
	DACONIL	6 T.	---	
	DACONIL ULTREX	---	1.4 lb.	
	DACONILWEATHER STIK 6F	---	1.38 pt.	
	ECHO DF	---	1.25 lb.	
	FUNG-ONIL	2.25 t.	---	
	GARDEN FUNGICIDE	2.25 t.	---	
	LIQUID FUNGICIDE	6 T.	---	
	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, Impatiens–Zinnia				
IRIS (cont.)				
Leaf Spot (<i>Heterosporium</i> species) (cont.)				
	chlorothalonil + thiophanate-methyl SPECTRO 90	---	1-2 lb.	See Comments for chlorothalonil, above.
	kresoxim-methyl CYGNUS	---	1.6-3.2 oz.	Apply as protective spray at 10- to 14-day intervals. Apply higher rate at shorter interval when conditions favor disease.
	mancozeb DITHANE T/O	3 t.	1.5 lb.	Destroy iris foliage in fall or early spring. Apply as shoots emerge and repeat at 7- to 14-day intervals. Add a spreader-sticker to wettable powder (W) formulations of mancozeb.
	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 3336 4.5F	0.5-1.25 t.	10-20 fl.oz.	See Comments for mancozeb, above.
	3336 50W	2.33-4 t.	12-16 oz.	
	HALT 50W	1.5 t.	---	
	OHP 6672	---	12-16 oz.	
	thiophanate methyl + flutolanil SYS STAR WDG	---	4-8 oz.	Destroy iris foliage in fall or early spring. Apply as shoots emerge and repeat at 7- to 14-day intervals. Add a spreader-sticker to wettable powder (W) formulations.
	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	---	8 oz.	Bayleton is cleared for landscape use only. Excessive rates of Bayleton may shorten flower stalks. Apply Systemic Fungicide as a full cover spray when symptoms appear and repeat every 7 to 14 days.
	STRIKE 25W	---	1 lb.	
	SYSTEMIC FUNGICIDE FOR TURF & ORNAMENTALS	4-8 T. (2-4 oz.)	---	
	trifloxystrobin COMPASS O	---	2-4 oz.	
Mosaic	None labeled	See Comments.		Destroy diseased plants.
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.
	EAGLE WSP	---	3-6 oz.	
	propiconazole BANNER MAXX	---	5-8 fl.oz.	Apply as needed to drip. Use sufficient volume of water mixed with Propensity to thoroughly cover the leaves and stems. Repeat applications at 21-day intervals.
	PROPENSITY 1.3MEC	---	6-8 fl.oz.	

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		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, Impatiens—Zinnia				
KALANCHOE				
Botrytis Blight (Gray Mold)				
	copper sulfate pentahydrate PHYTON 27	---	15-25 fl.oz.	Disease is associated with high humidity and mild temperatures. In greenhouse, use heating and ventilation to dry foliage. Dispose of plant debris. Apply when conditions favor disease development. Repeat at 7- to 10-day intervals. Shorten spray interval and increase rates when disease is likely to occur. NOT FOR RESIDENTIAL USE.
	iprodione CHIPCO 26GT	---	1-2.5 qt./A	
	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.	10-20 fl.oz.	
	HALT 50W	2.5 t.	12-16 oz.	
	OHP 6672 50W	---	12-16 oz.	
Phytophthora Root Rot				
	etr Diazole TERRAZOLE 25E	See Comments.		See African Violet: Phytophthora Root and Crown Rot; Annuals and Bedding Plants: Soil Pasteurization/Fumigation and Disinfestation of Equipment.
	etr Diazole + thiophanate methyl BANROT 8G BANROT 40W			See Comments for etridiazole, above.
	Streptomyces griseoviridis K61 MYCOSTOP			See Annuals and Bedding Plants: General Root and Crown Rot.
Powdery Mildew				
	copper sulfate pentahydrate PHYTON 27	---	13-35 fl. oz.	Apply at first sign of disease. Repeat at 10- to 14- day intervals.
	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.
	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.
	3336 50W	2.33-4 t.	12-24 oz.	
	OHP 6672 50W	---	12-24 oz.	
	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: Repeat sprays every 30 days. Use low rate in winter. Excessive rates and applications may shorten flower stalks.
	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.

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LANTANA				
	Foliar Nematode			Destroy diseased plants.
	Leaf Spot			
	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.
LILY				
	Botrytis Blight			
	chlorothalonil DACONIL ULTREX	---	1.4 lb.	Apply prebloom. Disease is associated with high humidity and mild temperatures. In greenhouse, use heating and ventilation to dry foliage. Discard plant debris and spent blooms. Repeat at 7- to 14-day intervals.
	DACONIL WEATHER STIK 6F	---	1.38 pt.	
	ECHO 720	---	1.38 pt.	
	FUNG-ONIL	2.25 t.	---	
	LANDSCAPE AND GARDEN FUNGICIDE	2 T.	---	
LISIANTHUS				
	Botrytis Blight			
	copper sulfate pentahydrate PHYTON 27	---	13-20 fl.oz.	Use sufficient volume of water to thoroughly cover the leaves and stems. Repeat application 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 runoff when conditions favor 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.
	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.
MARIGOLD				
	Alternaria Leaf Spot			
	azoxystrobin HERITAGE 50DG	---	1-4 oz.	Apply at first sign of disease and repeat at 14- to 28-day intervals. This is a very common disease on most selections of marigold.

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		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, Impatiens–Zinnia				
MARIGOLD (cont.)				
Alternaria Leaf Spot (cont.)				
	chlorothalonil			Apply every 7 to 14 days.
	CONCORDE DF	---	1 lb.	
	DACONIL ULTREX	---	1.4 lb.	
	DACONIL WEATHER STIK 6F	---	1.38 pt.	
	ECHO 720	---	1.38 pt.	
	LANDSCAPE AND GARDEN FUNGICIDE	2 T.	---	
	copper ammonium complex			Apply at first sign of disease and repeat applications every 7 to 14 days as needed. Shorten application interval when disease is severe.
	LIQUID COPPER FUNGICIDE	2 t.	---	
	copper hydroxide			Apply at first sign of disease and reapply at 7- to 14-day intervals. See label for information on possibly phytotoxicity.
	CUPRO 2005 T/N/O	---	0.75-2 lb./A	
	fluidioxonil			Apply to point of run-off at 7- to 14-day intervals when conditions favor disease. See label for further instructions.
	MEDALLION	---	1-2 oz.	
	iprodione			Apply every 7 to 14 days as needed. Alternaria is a common disease on greenhouse-grown African and French marigolds. NOT FOR RESIDENTIAL USE.
	CHIPCO 26GT	---	1-2.5 qt./A	
	CHIPCO 26019 50W	---	1-2.5 lb./A	
	IPRODIONE PRO SE	---	1-2.5 qt.	
	SEXTANT 2F	---	1-2.75 qt.	
	kresoxim-methyl			Apply as protective spray at 10- to 14-day intervals. Apply higher rate at shorter interval when conditions favor disease.
	CYGNUS	---	1.6-3.2 oz.	
	mancozeb			Repeat as needed at 7- to 14-day intervals.
	JUNCTION	---	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.	
	propiconazole			Apply as needed to drip. Use sufficient volume of water mixed with Propensity to thoroughly cover the leaves and stems. Repeat applications at 21-day intervals.
	BANNER MAXX	---	5-8 fl.oz.	
	PROPENSITY 1.3MEC	---	6-8 fl.oz.	
	trifloxystrobin			Apply when conditions favor disease and repeat every 7 to 14 days as needed.
	COMPASS O	---	2-4 oz.	
Bacterial Wilt				
	None labeled	See Comments.		See Annuals and Bedding Plants: Soil Pasteurization/Fumigation. Destroy diseased plants. DO NOT replant any solanaceous flowers or vegetables without soil fumigation.

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		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, Impatiens–Zinnia				
MARIGOLD (cont.)				
Botrytis Blight				
	chlorothalonil			Disease is associated with high humidity and mild temperatures. In greenhouse, use heating and ventilation to dry foliage. Discard plant debris and spent blooms. Apply prebloom when conditions favor disease development. Repeat at 7- to 14-day intervals.
	DACONIL ULTREX	---	1.4 lb.	
	DACONILWEATHER	---	1.38 pt.	
	STIK 6F			
	ECHO 720	---	1.38 pt.	
	LANDSCAPE AND GARDEN FUNGICIDE	2 T.	---	
	chlorothalonil + thiophanate-methyl			
	SPECTRO 90	---	1-2 lb.	
	copper ammonium complex			
	LIQUID COPPER FUNGICIDE	2 t.	---	
	fluidioxonil			Apply at 7- to 14-day intervals to point of run-off. Make no more than two consecutive applications of Medallion before rotating to another fungicide.
	MEDALLION	---	2-4 oz.	
	iprodione			Apply prebloom when conditions favor disease development. Repeat at 7- to 14-day intervals. NOT FOR RESIDENTIAL USE.
	CHIPCO 26GT	---	1-2.5 qt./A	
	CHIPCO 26019 50W	---	1-2.5 lb./A	
	IPRODIONE PRO SE SEXTANT 2F	---	1-2.5 qt.	
	mancozeb			Apply prebloom when conditions favor disease development. Repeat at 7- to 14-day intervals.
	DITHANE M-45 80W	2.5 T.	1.5 lb.	
	FORE 80W	2.5 T.	1.5 lb.	
	JUNCTION	---	1.5 lb.	
	PROTECT T/O	---	1.5 lb.	
	thiophanate-methyl			Apply prebloom when conditions favor disease development. Repeat at 7- to 14-day 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 + iprodione			Apply to point of run-off. Repeat at 10- to 14-day intervals as needed. See label for further directions.
	BENEFIT	---	17-34 fl.oz.	
	trifloxystrobin			Apply prebloom when conditions favor disease development. Repeat at 7- to 14-day intervals.
	COMPASS 50 W	---	2-4 oz.	

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, Impatiens–Zinnia				
MARIGOLD (cont.)				
Cercospora Leaf Spot				
	azoxystrobin HERITAGE 50W	---	1-4 oz.	Appears in early spring in landscape plantings. Apply at first sign of disease and repeat at 14- to 28-day intervals.
	chlorothalonil CONCORDE DF	---	1 lb.	Apply at first sign of symptoms and repeat at 7- to 14-day intervals as needed.
	DACONIL ULTREX	---	1.4 lb.	
	DACONIL WEATHER STIK 6F	---	1.4 pt.	
	LANDSCAPE AND GARDEN FUNGICIDE	2 T.	---	
	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 possibly phytotoxicity.
	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 JUNCTION	---	1.5 lb.	Repeat as needed at 7- to 14-day intervals.
	myclobutanil EAGLE 20EW	---	8 fl.oz.	Apply at first sign of disease; repeat at 10- to 14-day intervals. Add a non-ionic surfactant to the tank mixture. Eagle is cleared for landscape use only.
	EAGLE WSP	---	3-6 oz.	
	SYSTHANE WSP	---	3-6 oz.	
	thiophanate-methyl 3336 4.5F	0.5-1.25 t.	10-20 fl.oz.	Appears in early spring in landscape plantings. Apply at first sign of symptoms. Repeat at 7- to 14-day intervals as needed.
	3336 50W	2.33-4 t.	12-16 oz.	
	triadimefon BAYLETON T/O	---	2-4 oz.	Apply at first sign of disease. Repeat at 7- to 10-day intervals. African marigolds are susceptible. French Dwarf varieties are resistant. Bayleton is cleared for landscape use only.
	STRIKE 25W	---	4 oz.	
				IN GREENHOUSE: Repeat sprays every 30 days. Use low rate in winter. Excessive rates and applications may shorten flower stalks.

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, Impatiens—Zinnia				
MARIGOLD (cont.)				
Root and Crown Rot				
	etr Diazole TERRAZOLE 35W TRUBAN 5G TRUBAN 30W	See Comments.		See Annuals and Bedding Plants: Phytophthora and Pythium Damping-Off, Root and Crown Rot; Disinfestation of Equipment and Soil Pasteurization /Fumigation.
	etr Diazole + thiophanate-methyl BANROT 8G BANROT 40W			See Comments for etridiazole, above.
	fosetyl-AI ALIETTE WDG			See Comments for etridiazole, above.
	mefenoxam SUBDUE GR SUBDUE MAXX SUBDUE 2X WSP			See Annuals and Bedding Plants: Phytophthora and Pythium Damping-Off, Root and Crown Rot; Disinfestation of Equipment and Soil Pasteurization /Fumigation.
	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.
	propamocarb BANOL 67S			See Annuals and Bedding Plants: Phytophthora and Pythium Damping-Off, Root and Crown Rot; Disinfestation of Equipment and Soil Pasteurization /Fumigation.
MONARDA (Bee Balm)				
Powdery Mildew				
	piperalin PIPRON	---	4-8 fl.oz.	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 .
	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 PROPENSITY 1.3MEC	--- ---	5-8 fl.oz. 6-8 fl.oz.	Apply at first sign of disease. Apply as needed to drip. Use sufficient volume of water mixed with Propensity to thoroughly cover the leaves and stems. Repeat applications at 21-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.

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, Impatiens–Zinnia				
PANSY				
Alternaria Leaf Spot				
	potassium bicarbonate MILSTOP	---	2-5 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.
Anthraco				
	azoxystrobin HERITAGE 50W	---	1-4 oz.	FOLIAR SPRAY: Apply at first sign of disease and then every 7 to 28 days as needed. Occurs in flats and pot-grown stock in greenhouses.
	chlorothalonil CONCORDE DF DACONIL ULTREX DACONILWEATHER STIK 6F ECHO 720 LANDSCAPE AND GARDEN FUNGICIDE	---	1 lb. 1.4 lb. 1.38 pt. 1.38 pt. 2 T. ---	Apply at 7- to 14-day intervals.
	chlorothalonil + thiophanate-methyl SPECTRO 90	---	1-2 lb.	See Comments for chlorothalonil, above.
	mancozeb DITHANE T/O FORE 80W FORE FLOWABLE JUNCTION MANCOZEB WDG PROTECT T/O 80W	2 t. 2 t. --- --- 1.5-3 t. 2 t.	1.5 lb. 1.5 lb. 1.2 qt. 1.5 lb. 1.5 lb. 1.5 lb.	Apply at first sign of disease. Repeat at 7- to 10-day intervals. Occurs on leaves and stems of pansy. Add a spreader-sticker to improve coverage of foliage.
	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 3336 50W HALT 50W OHP 6672 50W	0.5-1.25 t. 2.33-4 t. 2.5 t. ---	10-20 fl.oz. 12-16 oz. --- 12-16 oz.	Apply at first sign of disease. Repeat at 7- to 10-day intervals. Occurs on leaves and stems of pansy. Add a spreader-sticker to improve coverage of foliage.
	thiophanate methyl + flutolanil SYS STAR WDG	---	4-8 oz.	See Comments for thiophanate-methyl, above.
	trifloxystrobin COMPASS O	---	2-4 oz.	Apply at 7- to 14-day intervals.
Black Root Rot				
	etridiazole + thiophanate-methyl BANROT 8G	---	8 oz./cu.yd.	DRY SOIL MIX: Mix thoroughly. Follow with soil drench after 1 to 2 months as needed.
	BANROT 40W	---	4-8 oz.	SOIL DRENCH AT SEEDING AND TRANSPLANTING: Apply to 800 square feet of bed or bench area. Irrigate immediately. Repeat every 1 to 2 months as needed.

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, Impatiens–Zinnia				
PANSY (cont.)				
Black Root Rot (cont.)				
	fluidioxonil MEDALLION	---	2-4 oz.	Apply as a drench at transplanting when conditions favor disease and repeat as needed every 21 to 28 days. See label for further instructions.
	thiophanate-methyl 3336 4.5F	0.5-1.25 t.	16-20 fl.oz.	SOIL DRENCH: Apply as a preventive treatment at 14- day intervals. DO NOT apply to plug trays or flats at seeding.
	3336 50W	2.33-4 t.	12-16 oz.	
	HALT 50W	1.5 t.	---	
	OPH 6672 4.5L	---	20 fl.oz.	
	triflumizole TERRAGUARD 50W	---	2-4 oz.	SOIL DRENCH: Apply at 3- to 4-week intervals as needed. Use higher rate under heavy disease pressure.
	TERRAGUARD SC	---	6-8 fl.oz.	
Botrytis Blight (Gray Mold)				
	chlorothalonil DACONIL ULTREX	---	1.4 lb.	Disease associated with high humidity and mild temperatures. In greenhouse, ventilate while heating to dry air. Discard plant debris. Apply when conditions favor disease development. Repeat at 7- to 14-day intervals.
	DACONIL WEATHER STIK	---	1.38 pt.	
	ECHO 720	---	1.38 pt.	
	LANDSCAPE AND GARDEN FUNGICIDE	2 T.	---	
	chlorothalonil + thiophanate-methyl SPECTRO 90	---	1-2 lb.	See Comments for chlorothalonil, above.
	copper sulfate pentahydrate PHYTON 27	---	13-20 fl.oz.	Use sufficient volume of water to thoroughly cover the leaves and stems. Repeat application 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.
	iprodione CHIPCO 26GT	---	1-2.5 qt./A	See Comments for chlorothalonil, above. NOT FOR RESIDENTIAL USE.
	CHIPCO 26019 50W	---	1-2.5 lb./A	
	IPRODIONE PRO SE	---	1-2.5 qt.	
	SEXTANT 2F	---	2.1-2.75 qt.	
	thiophanate-methyl 3336 4.5F	0.5-1.25 t.	10-20 fl.oz.	Disease associated with high humidity and mild temperatures. In greenhouse, ventilate while heating to dry air. Discard plant debris. Apply when conditions favor disease development. Repeat at 7- to 14-day intervals.
	3336 50W	2.33-4 t.	12-16 oz.	
	HALT 50W	2.5 t.	---	
	OHP 6672 50W	---	12-16 oz.	

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, Impatiens—Zinnia				
PANSY (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. Refer to label for further directions.
	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.
	trifloxystrobin COMPASS O	---	2-4 oz.	See Comments for thiophanate-methyl, above.
Cercospora Leaf Spot				
	azoxystrobin HERITAGE 50W	---	1-4 oz.	FOLIAR SPRAY: Apply at first sign of disease and then every 7 to 28 days as needed. Appears in early spring in landscape plantings of pansy.
	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. When applied to plants in bloom, may spot the petals.
	copper sulfate pentahydrate PHYTON 27	---	15-30 fl.oz.	Apply at first sign of disease in early spring and repeat every 7 to 14 days as needed.
	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.
	potassium bicarbonate MILSTOP	---	2-5 lb.	Use enough water to get thorough coverage of the foliage and apply at first sign of disease. Repeat application 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.
Myrothecium Leaf Blight and Crown Rot				
	chlorothalonil CONCORDE DF	---	1 lb.	Apply as heavy spray to foliage and media surface around base of plants immediately after transplanting plugs. Repeat at 7- to 14-day intervals.
	DACONIL ULTREX	---	1.4 lb.	
	DACONILWEATHER STIK 6F	---	1.38 pt.	
	ECHO 720 LANDSCAPE AND GARDEN FUNGICIDE	2 T.	---	
	fluidioxonil MEDALLION	---	1-2 oz.	Apply at 7- to 14-day intervals when conditions favor disease.
	triflumizole TERRAGUARD SC	---	4-8 fl.oz.	HEAVY SPRAY/DRENCH: Begin applications after transplanting plugs. Repeat as needed every 7 to 14 days through production cycle. Use higher rate at shorter intervals when disease is present.

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, Impatiens–Zinnia				
PANSY (cont.)				
Pythium and Phytophthora Root Rot				
	captan CAPTAN 50W	See Comments.		See Annuals and Bedding Plants: Phytophthora and Pythium Damping-Off, Root and Crown Rot; Soil Pasteurization/Fumigation and Disinfestation of Equipment.
	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.
	etridiazole TERRAZOLE 35W TRUBAN 30W TRUBAN 5G			See Annuals and Bedding Plants: Phytophthora and Pythium Damping-Off, Root and Crown Rot; Soil Pasteurization/Fumigation and Disinfestation of Equipment.
	etridiazole + thiophanate-methyl BANROT 8G BANROT 40W	See Comments.		See Annuals and Bedding Plants: Phytophthora and Pythium Damping-Off, Root and Crown Rot; Disinfestation of Equipment and Soil Pasteurization /Fumigation.
	fosetyl-AI ALIETTE WDG			See Comments for etridiazole + thiophanate-methyl, above.
	mefenoxam SUBDUE GR SUBDUE MAXX SUBDUE 2X WSP			See Comments for etridiazole + thiophanate-methyl, 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.
	propamocarb BANOL 67S			See Annuals and Bedding Plants: Phytophthora and Pythium 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, Impatiens–Zinnia				
PENTAS				
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 possibly phytotoxicity.
PEONY (Paeonia)				
Bacterial Leaf Spot				
	copper sulfate pentahydrate PHYTON 27	---	12-25 fl.oz.	Apply at first sign of disease in early spring and repeat every 7 to 14 days as needed.
Botrytis Blight (Gray Mold)				
	copper sulfate pentahydrate PHYTON 27	---	13-25 fl.oz.	Apply at first sign of disease in early spring and repeat every 7 to 14 days as needed.
	mancozeb DITHANE T/O FORE 80W FORE FLOWABLE JUNCTION MANCOZEB DG PROTECT T/O 80W	2 t. 2 t. --- --- 1.5-3 t. 2 t.	1.5 lb. 1.5 lb. 1.2 qt. 1.5 lb. 1-2 lb. 1.5 lb.	Disease is associated with high humidity and mild temperatures. In greenhouse, ventilate while heating to dry air. Discard plant debris. Apply when conditions favor disease development. Repeat at 7- to 14-day intervals. Add a spreader-sticker to improve coverage of foliage.
	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.	Repeat at 7- to 14-day intervals. Add a spreader-sticker to improve coverage of foliage.
Phytophthora Blight				
	mancozeb DITHANE M-45 80W FORE 80W MANCOZEB DG PROTECT T/O 80W	2 t. 2 t. 1.5-3 t. 2 t.	1.5 lb. 1.5 lb. 1-2 lb. 1.5 lb.	Drench soil in spring and fall.
PERIWINKLE (Annual Vinca)				
Aerial Web Blight and Rhizoctonia Crown Rot				
	azoxystrobin HERITAGE 50W	---	1-4 oz.	Apply at first sign of disease and repeat at 14- to 28-day intervals.
	flutolanil CONTRAST 70WSP	---	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 CHIPCO 26019 50W IPRODIONE PRO SE	--- --- ---	1-2.5 qt./A 1-2.5 lb./A 1-2.5 qt.	Apply at 7- to 10-day intervals when conditions favor disease. 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, Impatiens–Zinnia				
PERIWINKLE (Annual Vinca) (cont.)				
Aerial Web Blight and Rhizoctonia Crown Rot (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 3336 4.5F	0.5-1.25 t.	16-20 fl.oz.	Do not apply to plug trays or flats at seeding.
	3336 50W	2.33-4 t.	12-16 oz.	
	HALT 50W	2.5 t.	---	
	OHP 6672 4.5F	---	20 fl.oz.	
	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.
	trifloxystrobin COMPASS O	---	2-4 oz.	Apply when conditions favor disease and repeat every 7 to 14 days as needed.
Alternaria Leaf Spot				
	azoxystrobin HERITAGE 50W	---	1-4 oz.	Apply at first sign of disease and repeat at 14- to 28-day intervals.
	fluidioxonil MEDALLION	---	1-2 oz.	Apply at 7- to 14-day intervals to runoff when conditions favor disease.
	iprodione CHIPCO 26GT	---	1-2.5 qt./A	Apply at 7- to 14-day intervals, as needed. NOT FOR RESIDENTIAL USE.
	CHIPCO 26019 50W	---	1-2.5 lb./A	
	IPIRODIONE 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 interval when conditions favor disease.
	potassium bicarbonate MILSTOP	---	2-5 lb.	Apply at first sign of disease. Use a sufficient volume of water to get thorough coverage of the foliage. 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.
	trifloxystrobin COMPASS O	---	2-4 oz.	Apply when conditions favor disease and repeat every 7 to 14 days as needed.
Phomopsis Stem Blight				
	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 possibly phytotoxicity.
	thiophanate-methyl 3336 4.5F	0.5-1.25 t.	10-20 fl.oz.	Apply at first sign of disease. Repeat at 7- to 14-day intervals. Use shorter intervals when conditions favor disease.
	3336 50W	2.33-4 t.	12-16 oz.	

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, Impatiens—Zinnia				
PERIWINKLE (Annual Vinca) (cont.)				
Phytophthora Shoot Blight				
	azoxystrobin HERITAGE 50W	---	1-2 oz.	Apply every 7 to 28 days as needed.
	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.	FOLIAR SPRAY: Repeat applications as needed on a 28-day schedule. Do not make more than two applications at high rate per season. NOT FOR RESIDENTIAL USE.
	fosetyl-A1 ALIETTE WDG	---	1.25-4 lb.	Spray to wet foliage; use no more than 400 gallons per acre. High rates may stunt vinca. Repeat as needed at monthly intervals. This is a common and destructive disease of vinca in landscape beds.
	<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.
PETUNIA				
Bacterial Wilt				
	None labeled		See Comments.	See Annuals and Bedding Plants: Soil Pasteurization/Fumigation. DO NOT replant any solanaceous flowers or vegetables without soil fumigation.
Botrytis Blight (Gray Mold)				
	chlorothalonil CONCORDE DF	---	1 lb.	Disease is associated with high humidity and mild temperatures. In greenhouse, ventilate while heating dry air. Discard plant debris. Apply when conditions favor disease. Repeat at 7- to 14-day intervals. Shorten intervals during overcast, rainy weather.
	DACONIL ULTREX	---	1.4 lb.	
	DACONILWEATHER STIK 6F	---	1.38 lb.	
	ECHO DF	---	1.25 lb.	
	FUNG-ONIL	2.25 t.	---	
	GARDEN FUNGICIDE	2.25 t.	---	Apply when conditions favor disease. Repeat at 7- to 14-day intervals. Shorten intervals during overcast, rainy weather.
	LANDSCAPE AND GARDEN FUNGICIDE	2 T.	---	
	chlorothalonil + fenarimol TWSOME 4.4F	0.67 T.	2 pt.	
	chlorothalonil + thiophanate-methyl SPECTRO 90	---	1-2 lb.	See Comments for chlorothalonil, above.
	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, Impatiens—Zinnia				
PETUNIA (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. Shorten intervals during overcast, rainy weather.
	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 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.
	trifloxystrobin COMPASS 50W	---	2-4 oz.	See Comments for thiophanate-methyl, above.
	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.
Phytophthora Stem Blight				
	azoxystrobin HERITAGE 50W	---	1-2 oz.	FOLIAR SPRAY: Apply after transplanting and before symptoms are seen. Repeat sprays every 7 to 28 days as needed. Common in greenhouses.
Phytophthora Stem Rot and Shoot Blight				
	chlorothalonil CONCORDE DF	---	1 lb.	Apply at 7- to 14-day intervals.
	DACONIL ULTREX	---	1.4 lb.	
	DACONIL WEATHER	---	1.38 lb.	
	STIK 6F	---	1.25 lb.	
	ECHO DF	---	---	
	FUNG-ONIL	2.25 t.	---	
	LANDSCAPE AND GARDEN FUNGICIDE	2 T.	---	
	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.
	STATURE SC	---	3-6.1 fl.oz.	
	fosetyl-AI ALIETTE WDG	---	1.25-4 lb.	Spray to wet foliage. DO NOT repeat more often than every 30 days.
	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.
	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.

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, Impatiens—Zinnia				
PETUNIA (cont.)				
Pythium and Phytophthora Damping-Off and Seedling Blights				
	captan CAPTAN 50W ORTHOCIDE 50W	See Comments.		See Annuals and Bedding Plants: Phytophthora and Pythium Damping-Off, Root and Crown Rot; Disinfestation of Equipment and Soil Pasteurization /Fumigation.
	etrizazole TERRAZOLE 35W TRUBAN 5G TRUBAN 30W	See Comments.		See Annuals and Bedding Plants: Phytophthora and Pythium Damping-Off, Root and Crown Rot; Disinfestation of Equipment and Soil Pasteurization /Fumigation.
	etrizazole + thiophanate-methyl BANROT 8G BANROT 40W			See Comments for etridiazole, above.
	fosetyl-Al ALIETTE WDG			See Comments for etridiazole, above.
	mefenoxam SUBDUE GR SUBDUE MAXX SUBDUE 2X WSB			See Annuals and Bedding Plants: Phytophthora and Pythium Damping-Off, Root and Crown Rot; Disinfestation of Equipment and Soil Pasteurization /Fumigation.
	propamocarb BANOL 67S			See Annuals and Bedding Plants: Phytophthora and Pythium Damping-Off, Root and Crown Rot; Disinfestation of Equipment and Soil Pasteurization /Fumigation.
Pythium and Phytophthora Root Rot				
	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 2/3-12-2/3 fl.oz.	DRENCH: Apply 25 gallons of solution to 100 square feet of bed area and repeat monthly as needed.
PHLOX				
Cercospora Leaf Spot				
	dimethomorph + mancozeb STATURE WP	---	1.75 lb.	Apply as a full cover spray at 7- to 10-day intervals throughout production cycle and before onset of 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. Eagle is cleared for landscape use only.
	EAGLE WSP	---	3-6 oz.	
	SYSTHANE WSP	---	3-6 oz.	

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, Impatiens–Zinnia				
PHLOX (cont.)				
Cercospora Leaf Spot (cont.)				
	potassium bicarbonate MILSTOP	---	2-5 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.
	thiophanate methyl 3336 4.5F 3336 50W	0.5-1.25 t. 2.33-4 t.	10-20 fl.oz. 12-16 oz.	Apply at first sign of disease. Repeat at 10- to 14-day intervals 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.
	fenarimol RUBIGAN AS	---	3-5 fl.oz.	Apply at first sign of disease. Repeat every 10 to 14 days. Use higher rate and shorter interval when 10 percent of leaves are infected 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 the tank mixture. Eagle is cleared for landscape use only.
	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	---	1.25-3 lb. 2-3 lb.	GREENHOUSE: Use a sufficient volume of water to cover the leaves and stems. Repeat applications at 7- to 14-day intervals as needed to control disease. FIELD APPLICATION: Use a sufficient volume of water to cover the leaves and stems. Repeat applications at 7- to 14-day intervals as needed to control disease.
	propiconazole BANNER MAXX PROPENSITY 1.3MEC	--- ---	5-8 fl.oz. 6-8 fl.oz.	Apply at first sign of disease. Apply as needed to drip. Use sufficient volume of water mixed with Propensity to thoroughly cover the leaves and stems. Repeat applications at 21-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 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.	Apply at first sign of 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, Impatiens–Zinnia				
PHLOX				
Powdery Mildew (cont.)				
	trifloxystrobin COMPASS O	---	1-2 oz.	Apply when conditions favor disease and repeat every 7 to 14 days as needed.
	triadimefon BAYLETON T/O STRIKE 25W	---	2-4 oz. 4 oz.	Apply at first sign of disease. Repeat every 7 to 14 days. Bayleton is cleared for landscape use only.
	triforine ROSE AND SHRUB DISEASE CONTROL	1 T.	---	Apply at first sign of disease and repeat every 7 to 10 days as needed.
POINSETTIA				
Bacterial Canker				
	None labeled	See Comments.		Follow strict sanitation practices and destroy any diseased plants. See Annuals and Bedding Plants: Soil Pasteurization/Fumigation and Disinfestation of Equipment. Avoid overhead watering.
Botrytis Blight (Gray Mold)				
	chlorothalonil EXOTHERM LANDSCAPE AND GARDEN FUNGICIDE TERMIL 20F	See Comments. 2 T.		SMOKE FUMIGATION IN GREENHOUSE: One can treats 1000 cubic feet. DO NOT use if temperatures exceed 75°F. See label for restrictions.
	copper sulfate pentahydrate PHYTON 27	---	15-20 fl.oz.	Botrytis blight is a devastating disease on foliage and bracts of poinsettia. Disease is associated with high humidity and mild temperatures. Ventilate while heating to dry air. DO NOT water crop late in the day. Follow strict sanitation practices. Foliar spray residues may spot bracts. Apply when conditions favor disease development and repeat at 7- to 14-day intervals. See label for further instructions.
	fluidioxonil MEDALLION	---	2-4 oz.	
	iprodione CHIPCO 26GT CHIPCO 26019 50W IPRODIONE PRO SE	---	1-2.25 qt./A 1-2.5 lb./A 1-2.5 qt.	NOT FOR RESIDENTIAL USE.
	Streptomyces griseoviridis K61 MYCOSTOP	---	1.4 oz.	To suppress disease, apply every 2 to 4 weeks. Wet foliage to run-off.
	thiophanate-methyl 3336 4.5F 3336 50W OHP 6672 50W	0.5-1.25 t. 2.33-4 t. ---	10-20 fl.oz. 12-16 oz. 12-16 oz.	To suppress disease, apply every 2 to 4 weeks. Wet foliage to run-off.
	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. DO NOT apply to poinsettia in bloom.

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, Impatiens–Zinnia				
POINSETTIA (cont.)				
Botrytis Blight (Gray Mold) (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.
	trifloxystrobin COMPASS O	---	2-4 oz.	Apply as a full cover spray at 7- to 14-day intervals when conditions favor disease. See label for further instructions.
Pythium Root and Stem Rot				
	etr Diazole TERRAZOLE 35W TRUBAN 5G	See Comments.		See Azalea: Phytophthora Root and Crown Rot; Annuals and Bedding Plants: Disinfestation of Equipment and Soil Pasteurization/Fumigation.
	etr Diazole + thiophanate-methyl BANROT 8G BANROT 40W			See Comments for etridiazole, above.
	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.
	mefenoxam SUBDUE GR SUBDUE MAXX SUBDUE 2X WSP			See Comments for etridiazole, 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. DRENCH: Apply 25 gallons of solution to 100 square feet of bed area and repeat monthly as needed.
	propamocarb BANOL 67S			See Comments for mefenoxam + thiophanate-methyl, above.
	Streptomyces griseoviridis K61 MYCOSTOP	---	1.4 oz.	SUPPRESSION OF PYTHIUM ROOT AND CROWN ROT: DO NOT tank mix with other pesticides. 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.
		---	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.

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, Impatiens–Zinnia				
POINSETTIA (cont.)				
Rhizoctonia Root Rot				
	fluidioxonil MEDALLION	---	1-2 oz.	Apply as a drench when sticking cuttings and repeat as needed every 21 to 28 days. See label for further instructions.
	flutolanil CONTRAST 70WSP	---	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.
	PROSTAR 70WP	---	3-6 oz.	
	iprodione CHIPCO 26GT	See Comments.		See Annuals and Bedding Plants: Rhizoctonia Damping-Off, Root and Crown Rot; Disinfestation of Equipment and Soil Pasteurization/Fumigation. 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.	
	PCNB DEFEND 2L DEFEND 10G 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 OHP 6672 4.5F OHP 6672 50W	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.
	trifloxystrobin COMPASS O	---	0.5 oz.	Apply as a drench to wet the upper half of media in container. Reapply at 21- to 28-day intervals to newly transplanted poinsettia, as needed.
	triflumizole TERRAGUARD SC	---	4-8 fl.oz.	SOIL DRENCH: Apply every 2 to 4 weeks as needed.

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, Impatiens–Zinnia				
SALVIA (Sage)				
Botrytis Blight (Gray Mold)				
	chlorothalonil EXOTHERM LANDSCAPE AND GARDEN FUNGICIDE TERMIL 20F	See Comments. 2 T.		SMOKE FUMIGATION IN GREENHOUSE: One can treats 1000 cubic feet. DO NOT use at temperatures above 75° F.
	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.	Disease is associated with high humidity and mild temperatures. In greenhouse, ventilate while heating to dry air. Discard plant debris. Apply when conditions favor disease development. Repeat at 7- to 14-day intervals. NOT FOR RESIDENTIAL USE.
	thiophanate-methyl 3336 4.5F 3336 50W HALT 50W OHP 6672 50W	0.5-1 T. --- 1.5 t. ---	10-20 fl.oz. 12-16 oz. --- 12-16 oz.	See Comments for iprodione, 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.
	trifloxystrobin COMPASS O	---	2-4 oz.	Apply when conditions favor disease and repeat every 7 to 14 days as needed.
	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.
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.
	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 every 10 to 14 days. Add a non-ionic surfactant to the tank mixture. Systhane has been cleared for greenhouse use.

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, Impatiens–Zinnia				
SALVIA (Sage) (cont.)				
Powdery Mildew (cont.)				
	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.
	tebuconazol 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.	---	Apply at first sign of disease. Repeat every 10 to 14 days as needed.
	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.
	trifloxystrobin COMPASS O	---	2-4 oz.	Apply as a full cover spray at 7- to 14-day intervals at first sign of disease and repeat as needed.
	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.
Pythium and Phytophthora Damping-Off				
	captan CAPTAN 50W	See Comments.		See Annuals and Bedding Plants: Phytophthora and Pythium Damping-Off, Root and Crown Rot; Disinfestation of Equipment and Soil Pasteurization /Fumigation.
	etridiazole TERRAZOLE 35W TRUBAN 5G TRUBAN 30W			See Annuals and Bedding Plants: Phytophthora and Pythium Damping-Off, Root and Crown Rot; Disinfestation of Equipment and Soil Pasteurization /Fumigation.
	etridiazole + thiophanate-methyl BANROT 8G BANROT 40W			See Comments for etridiazole, above.
	mefenoxam SUBDUE GR SUBDUE MAXX SUBDUE 2X WSP			See Annuals and Bedding Plants: Phytophthora and Pythium Damping-Off, Root and Crown Rot; Disinfestation of Equipment and Soil Pasteurization /Fumigation.
	propamocarb BANOL 67S			See Comments for mefenoxam, above.
Verticillium Wilt				
	None labeled	See Comments.		See Annuals and Bedding Plants: Soil Pasteurization /Fumigation. Found only in landscapes. Destroy diseased plants. DO NOT replant susceptible plants without soil fumigation.

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, Impatiens—Zinnia				
SHASTA DAISY				
Alternaria Leaf Spot				
	azoxystrobin HERITAGE 50W	---	1-4 oz.	FOLIAR SPRAY: Apply at first sign of disease and then every 7 to 28 days as needed.
	chlorothalonil DACONIL ULTREX	---	1.4 lb.	Apply every 7 to 14 days.
	DACONIL WEATHER STIK 6F	---	2.38 pt.	
	DACONIL ZN	2 t.	2 pt.	
	LANDSCAPE AND GARDEN FUNGICIDE	2 T.	---	
SNAPDRAGON				
Botrytis Blight (Gray Mold)				
	azoxystrobin HERITAGE 50W	---	2-4 oz.	FOLIAR SPRAY: Apply at first sign of disease and then every 7 to 21 days as needed.
	chlorothalonil EXOTHERM LANDSCAPE AND GARDEN FUNGICIDE TERMIL 20F	See Comments. 2 T.		SMOKE FUMIGATION IN GREENHOUSE: One can treats 1000 cubic feet. DO NOT use at temperatures above 75°F.
	copper sulfate pentahydrate PHYTON 27	---	13-20 fl.oz.	Use sufficient volume of water to thoroughly cover the leaves and stems. Repeat application 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	---	1-2 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 SEXTANT 2F	---	1-2.5 qt. 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. Discard plant debris. Apply when conditions favor disease development. Repeat at 7- to 14-day intervals. 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.	Discard plant debris. Apply when conditions favor disease development. Repeat at 7- to 14-day intervals.
	thiophanate methyl + flutolanil SYS STAR WDG	---	4-8 oz.	See Comments for thiophanate-methyl, above.
	trifloxystrobin COMPASS 50W	---	2-4 oz.	Apply when conditions favor disease development. Repeat at 7- to 14-day intervals.

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, Impatiens–Zinnia				
SNAPDRAGON (cont.)				
Downy Mildew				
	azoxystrobin HERITAGE 50W	---	1-4 oz.	FOLIAR SPRAY: Apply at first sign of disease and then every 7 to 28 days as needed.
	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 possibly phytotoxicity.
	copper sulfate pentahydrate PHYTON 27	---	13-25 fl.oz.	See Comments, above, for copper hydroxide.
	dimethomorph STATURE DM	---	6.4-12.8 oz.	DRENCH: Apply when roots are well established or at first sign of disease.
	STATURE SC	---	6.1-12.2 fl.oz.	Repeat applications at 10- to 14-day intervals throughout production cycle.
	trifloxystrobin COMPASS 50W	---	2-4 oz.	Begin applications at first sign of disease and repeat at 7- to 14-day intervals. Use shorter interval during periods of frequent rainfall or when severe symptoms appear.
Leaf Spot and Blight				
	potassium bicarbonate MILSTOP	---	2-5 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.
	trifloxystrobin COMPASS 50W	---	2-4 oz.	Apply to point of drip when disease is detected or when conditions favor disease. Repeat every 7 to 14 days until threat of disease outbreak is over.
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.
	kresoxim-methyl CYGNUS	---	1.6-3.2 oz.	Apply as protective spray at 10- to 14-day intervals. Apply higher rate at shorter interval when conditions favor disease.
	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 is cleared for greenhouse use.
	EAGLE WSP	2 T.	3-6 oz.	
	IMMUNOX	---	---	
	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.
	propiconazole BANNER MAXX	---	5-8 fl.oz.	Apply at first sign of disease. Apply as needed to drip. Use sufficient volume of water mixed with Propensity to thoroughly cover the leaves and stems. Repeat applications at 21-day intervals.
	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, Impatiens–Zinnia				
SNAPDRAGON (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 3336 4.5F	0.5-1.25 t.	10-20 fl.oz.	Apply at first sign of disease. Repeat every 7 to 14 days.
	3336 50W	---	12-16 oz.	
	HALT 50W	1.5 t.	---	
	OHP 6672 50W	---	12-16 oz.	
	thiophanate methyl + flutolanil SYS STAR WDG	---	4-8 oz.	Apply at first sign of disease. Repeat every 7 to 14 days.
	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	---	4 oz.	IN GREENHOUSE: Apply Strike at 30-day intervals. Use low rate in winter. Excessive rates or applications may shorten flower stalks.
	SYSTEMIC FUNGICIDE FOR TURF AND ORNAMENTALS	1-2 t.	---	
	trifloxystrobin COMPASS 50W	---	1-2 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.	---	IN GREENHOUSE: Apply at 30-day intervals. Use low rate in winter. Excessive rates or applications may shorten flower stalks.
Pythium and Phytophthora Damping Off				
	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.

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, Impatiens–Zinnia				
SNAPDRAGON (cont.)				
Rhizoctonia Stem Rot				
	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.
	flutolanil CONTRAST 70WSP	---	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.
	PROSTAR 70WP	---	3-6 oz.	
	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.
	IPIRODIONE PRO SE	---	1-2.5 qt.	
	SEXTANT 2F	---	1-2.75 qt.	
	PCNB DEFEND 75W	---	4-8 oz.	SOIL DRENCH: Apply to 400 to 800 square feet of bed or bench area. For soil depths of 4 inches or less, apply 100 gallons to 800 square feet. For soil depths of more than 4 inches, apply 100 gallons to 400 square feet. One repeat application can be made 4 to 6 weeks later.
	TERRACLOR 75W			
	thiophanate-methyl 3336 4.5F	0.5-1.25 t.	16-20 fl.oz.	SOIL DRENCH: Covers 400 to 800 square feet (1 to 2 pints per square foot). Apply after transplanting and repeat at 2- to 4-week intervals.
	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 wet the roots and surrounding potting medium. 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	---	2-4 oz.	HEAVY SPRAY/DRENCH: Apply when conditions favor disease and repeat every 7 to 14 days as needed.
	triflumizole TERRAGUARD SC	---	4-8 fl.oz.	HEAVY SPRAY/DRENCH: Begin applications just before flowering. Repeat as needed every 14 to 28 days. Use higher rate at shorter intervals when disease is present.
Root-Knot Nematode				
	aerated steam	---	---	Steam-pasturize soil in beds prior to planting. See General Root and Crown Rot Control for additional information.

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, Impatiens—Zinnia				
SNAPDRAGON (cont.)				
Rust				
	copper sulfate pentahydrate PHYTON 27	---	13-25 fl.oz.	Apply at first sign of disease and repeat every 7 to 14 days as needed.
	kresoxim-methyl CYGNUS	---	1.6-3.2 oz.	Apply as protective spray at 10- to 14-day intervals. Apply higher rate at shorter interval when conditions favor disease.
	mancozeb DITHANE T/O	2 t.	1.5 lb.	Apply as plants leaf out. See label for specific spray interval. Use resistant varieties in landscape. Avoid overhead watering. Remove plants at end of season. Add a spreader-sticker to improve coverage of the foliage.
	FORE 80W	2 t.	1.5 lb.	
	FORE FLOWABLE	---	1.2 qt.	
	MANCOZEB DG	1.5-3 t.	1-2 lb.	
	PROTECT T/O 80W	2 t.	1.5 lb.	
	myclobutanol 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 is cleared for greenhouse use.
	EAGLE WSP	2 T.	3-6 oz.	
	IMMUNOX	---	---	
	SYSTHANE WSP	---	3-6 oz.	
	propiconazole BANNER MAXX	---	5-8 fl.oz.	Apply Banner every 7 to 10 days. Use sufficient volume of water mixed with Propensity to thoroughly cover the leaves and stems. Repeat applications at 21-day intervals.
	PROPENSITY 1.3MEC	---	6-8 fl.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 STRIKE 25W	---	4 oz.	IN GREENHOUSE: Apply Strike at 30-day intervals. Use low rate in winter. Excessive rates or applications may shorten flower stalks. Apply Systemic Fungicide as a full cover spray when symptoms first appear and repeat every 7 to 14 days.
	SYSTEMIC FUNGI- CIDE FOR TURF AND ORNAMEN- TALS	1-2 T.	---	
	trifloxystrobin COMPASS O	---	2-4 oz.	HEAVY SPRAY/DRENCH: Apply when conditions favor disease and repeat every 7 to 14 days as needed.
Seedling Damping-Off				
	captan CAPTAN 50W ORTHOICIDE 50W	See Comments.		See Annuals and Bedding Plants: Phytophthora and Pythium Root Rot; Soil Pasteurization/Fumigation and Disinfestation of Equipment.
	etridiazole TERRAZOLE 35W TRUBAN 5G TRUBAN 30W			See Annuals and Bedding Plants: Phytophthora and Pythium Root Rot; Soil Pasteurization/Fumigation and Disinfestation of Equipment.
	etridiazole + thiophanate-methyl BANROT 8G BANROT 40W			See Comments for etridiazole, above.
	mefenoxam SUBDUE GR SUBDUE MAXX SUBDUE 2X WSP			See Annuals and Bedding Plants: Phytophthora and Pythium Root Rot; Soil Pasteurization/Fumigation and Disinfestation of Equipment.
	propamocarb BANOL 67S			See Comments for mefenoxam, above.

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, Impatiens–Zinnia				
SNAPDRAGON (cont.)				
Verticillium Wilt				
	None labeled		See Comments.	See Annuals and Bedding Plants: Soil Pasteurization/Fumigation. Found only in landscapes. Destroy diseased plants. DO NOT replant before fumigating.
SWEET WILLIAM (Dianthus)				
Heterosporium Leaf Spot				
	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 possibly phytotoxicity.
	propiconazole BANNER MAXX	---	5-8 fl.oz.	Apply Banner Maxx every 14 days. Use sufficient volume of water mixed with Propensity to thoroughly cover the leaves and stems. Repeat applications at 21-day intervals. Apply Systemic Fungicide at 7-day intervals as needed.
	PROPENSITY 1.3MEC	---	6-8 fl.oz.	
	SYSTEMIC FUNGICIDE	1 T.	---	
TULIP				
Botrytis Blight (Tulip Fire)				
	chlorothalonil DACONIL ULTREX	---	1.4 lb.	Disease associated with high humidity and mild temperatures. In greenhouse, ventilate while heating to dry air. Discard plant debris. Apply when conditions favor disease development. Repeat at 7- to 14-day intervals.
	DACONILWEATHER STIK 6F	---	1.38 pt.	
	DACONIL ZN	2 t.	2 pt.	
	LANDSCAPE AND GARDEN FUNGICIDE	2 T.	---	
	chlorothalonil + fenarimol TWSOME 4.4F	0.67 T.	2 pt.	Disease associated with high humidity and mild temperatures. In greenhouse, ventilate while heating to dry air. Discard plant debris. Apply when conditions favor disease development. Repeat at 7- to 14-day intervals.
	iprodione CHIPCO 26GT	---	1-2.5 qt./A	See Comments for chlorothalonil + fenarimol, 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.	
	mancozeb DITHANE T/O	2 t.	1.5 lb.	See Comments for chlorothalonil + fenarimol, above.
	FORE 80W	2 t.	1.5 lb.	
	FORE FLOWABLE	---	1.2 qt.	

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, Impatiens–Zinnia				
TULIP (cont.)				
Bulb Rot				
	flutolanil CONTRAST 70WSP PROSTAR 70WP	---	3-6 oz. 3-6 oz.	BULB DIP: Dip clean bulbs for 5 minutes in fungicide suspension and allow to dry before planting. For control of bulb rot caused by <i>Thizoctonia</i> and <i>Sclerotium rolfsii</i> .
	PCNB DEFEND 2L DEFEND 75W	---	1.33 gal. 3.25-6.5 lb.	BROADCAST SOIL DRENCH: Apply to 1000 square feet and incorporate prior to planting to depth of 6 to 7 inches.
	TERRACLOR 75W	---	3 lb./4.85 gal. water (7.5% solution)	BULB DIP: Soak bulbs for 5 minutes. Add 1-percent sticker. Maintain some agitation.
	propiconazole BANNER MAXX PROPENSITY 1.3MEC	---	24-48 fl.oz. /50 gal. 6-8 fl.oz.	BULB DIP: Dip bulbs in Banner fungicide suspension for 15 minutes. Water temperature should be 26°-28°C. Allow bulbs to dry before placing in storage. Use sufficient volume of water mixed with Propensity to thoroughly cover the leaves and stems. Repeat applications at 21-day intervals.
	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. 2.5-3 t. --- --- ---	33 fl.oz. 12-16 oz. --- 33 fl.oz. 12-16 oz.	BULB DIP: Soak clean bulbs for 15 to 30 minutes in warm water (80°-85°F) within 48 hours of digging. Dry bulbs and store in a cool, dry place.
Sclerotinia Blight (Black Rot)				
	PCNB DEFEND 75W REVERE WSP TERRACLOR 75W	---	3.25-6.5 lb. 3.25-6.5 lb. 3.25-6.5 lb.	SOIL DRENCH: Apply preplant to 1000 square feet and incorporate to depth of 6 inches. Use lower rates for lighter soils.
VERBENA				
Bacterial Leaf Spot				
	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 possibly phytotoxicity.
	copper sulfate pentahydrate PHYTON 27	---	15-25 fl.oz.	See Comments for copper hydroxide, above.
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. Common disease on annual and perennial verbena.
	fenarimol RUBIGAN AS	---	3.5 fl.oz.	Apply at first sign of disease. Repeat every 7 to 14 days.
	kresoxim-methyl CYGNUS	---	1.6-3.2 oz.	Apply as protective spray at 10- to 14-day intervals. Apply higher rate at shorter interval when conditions favor disease.

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, Impatiens–Zinnia				
VERBENA (cont.)				
Powdery Mildew (cont.)				
	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.	FIELD: 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.
	tebuconazol 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 3336 50W HALT 50W OHP 6672 50W	0.5-1.25 t. 2.33-4 t. 1.5 t. ---	10-20 fl.oz. 12-24 oz. --- 12-24 oz.	Apply low rate soon after first leaves expand or symptoms are seen. Use higher rate if mildew is already present. Repeat as needed. See label for additional information.
	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.
	trifloxystrobin COMPASS 50W	---	1-2 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.
YARROW (Achillea)				
Powdery Mildew				
	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 the tank mixture. Eagle is cleared for landscape use only.
	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.
Rust				
	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 the tank mixture. Eagle is cleared for landscape use only.
	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.

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, Impatiens–Zinnia				
ZINNIA				
Alternaria Leaf Blight				
	azoxystrobin HERITAGE 50W	---	1-4 oz.	FOLIAR SPRAY: Apply at first sign of disease and then every 7 to 28 days as needed. Extremely common.
	chlorothalonil CONCORDE DF	---	1 lb.	Apply at first sign of disease. Repeat at 7- to 14-day intervals.
	DACONIL ULTREX	---	1.4 lb.	
	DACONILWEATHER STIK 6F	---	1.38 pt.	
	ECHO 720	---	1.38 pt.	
	LANDSCAPE AND GARDEN FUNGICIDE	2 T.	---	
	chlorothalonil + thiophanate-methyl SPECTRO 90	---	1-2 lb.	See Comments for chlorothalonil, above.
	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 possibly phytotoxicity.
	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.
	iprodione CHIPCO 26GT	---	1-2.5 qt./A	Apply at first sign of disease. Repeat at 7- to 14-day intervals. 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.	
	kresoxim-methyl CYGNUS	---	1.6-3.2 oz.	Apply as protective spray at 10- to 14-day intervals. Apply higher rate at shorter interval when conditions favor disease.
	mancozeb DITHANE T/O	2 t.	1.5 lb.	Apply at first sign of disease. Repeat at 7- to 14-day intervals.
	FORE 80W	2 t.	1.5 lb.	
	FORE FLOWABLE	---	1.2 qt.	
	JUNCTION	---	1.5 lb.	
	MANCOZEB DG	1.5-3 t.	1-2 lb.	
	PROTECT T/O 80W	2 t.	1.5 lb.	
	potassium bicarbonate MILSTOP	---	2-5 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.
	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.
	trifloxystrobin COMPASS O	---	2-4 oz.	Apply when conditions favor 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, Impatiens–Zinnia				
ZINNIA (cont.)				
Bacterial Leaf Spot				
	copper sulfate pentahydrate PHYTON 27	---	13-25 fl.oz.	Apply at 7- to 14-day intervals. Shorten intervals during periods of rain.
Botrytis Blight				
	chlorothalonil CONCORDE DF	---	1 lb.	Disease is associated with high humidity and mild temperatures. In greenhouse, ventilate while heating to dry air. Follow strict sanitation practices. Apply 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 LANDSCAPE AND GARDEN FUNGICIDE	2 t. 2 T.	2 pt. ---	
	chlorothalonil EXOTHERM LANDSCAPE AND GARDEN FUNGICIDE TERMIL 20F	---	See label. See label.	SMOKE FUMIGATION IN GREENHOUSE: One can treats 1000 cubic feet. DO NOT use at temperatures above 75°F.
	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.
	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	---	1-2.5 qt./A	Apply when conditions favor disease. Repeat at 7- to 14-day intervals. NOT FOR RESIDENTIAL USE.
	CHIPCO 26019 50W	---	1-2.5 lb./A	
	IPRODIONE PRO SE SEXTANT 2F	---	1-2.5 qt.	
	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.
	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.	Apply when conditions favor disease. Repeat at 7- to 14-day intervals.
	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.
	trifloxystrobin COMPASS O	---	2-4 oz.	Apply when conditions favor 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, Impatiens–Zinnia				
ZINNIA (cont.)				
Powdery Mildew				
	chlorothalonil			Apply at first sign of disease on leaves.
	DACONIL ULTREX	---	1.4 lb.	Repeat at 7- to 14-day intervals as needed.
	DACONIL WEATHER	---	1.38 pt.	
	STIK 6F			
	ECHO DF	---	1.25 lb.	
	GARDEN FUNGICIDE	2.25 t.	---	
	LIQUID FUNGICIDE	9 T.	---	
	LANDSCAPE AND GARDEN FUNGICIDE	2 T.	---	
	chlorothalonil + fenarimol			Apply at first sign of disease on leaves.
	TWOSOME 4.4F	0.67 T.	2 pt.	Repeat at 7- to 14-day intervals as needed.
	chlorothalonil + thiophanate-methyl			Use sufficient volume of water to thoroughly cover the leaves and stems.
	SPECTRO 90	---	1-2 lb.	Repeat applications at 7- to 14-day intervals as needed. Use higher rate at shorter interval when disease is present.
	copper sulfate pentahydrate			Use sufficient volume of water to thoroughly cover the leaves and stems.
	PHYTON 27	---	13-25 fl.oz.	Repeat application 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.
	fenarimol			FIELD PRODUCTION: Apply at first sign of disease. Repeat every 10 to 14 days. Use higher rate and shorter interval when 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 interval when conditions favor disease.
	CYGNUS	---	1.6-3.2 oz.	
	myclobutanil			Apply at first sign of disease. Repeat every 10 to 14 days. Add a non-ionic surfactant to the tank mixture. Systhane is cleared for greenhouse use.
	EAGLE 20EW	---	8 fl.oz.	
	EAGLE WSP	2 T.	3-6 oz.	
	IMMUNOX	---	---	
	SYSTHANE WSP	---	3-6 oz.	
	paraffinic oil			Apply at first sign of disease and reapply every 1 to 2 weeks. Do not apply when temperatures exceed 85°F.
	SUNSPRAY ULTRA FINE OIL	2.5-5 T.	1% v/v	
	potassium bicarbonate			FIELD: Use enough water to thoroughly cover the foliage and apply at first sign of disease. Repeat applications every 7 to 14 days.
	MILSTOP	---	2-3 lb.	
	propiconazole			Apply at first sign of disease. Apply as needed to drip. Use sufficient volume of water mixed with Propensity to thoroughly cover the leaves and stems. Repeat applications at 21-day intervals.
	BANNER MAXX	---	5-8 fl.oz.	
	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, Impatiens—Zinnia				
ZINNIA (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 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. 12-24 oz. --- 12-24 oz.	Apply at first sign of disease. Repeat at 7- to 14-day intervals.
	thiophanate-methyl + flutolanil SYS STAR WDG	---	4-8 oz.	Apply to point of run-off. Repeat at 10- to 14-day intervals as needed. See label for further directions.
	thiophanate-methyl + iprodione BENEFIT	---	17-34 fl.oz.	See Comments for thiophanate-methyl + flutolanil, above.
	triadimefon BAYLETON T/O STRIKE 25W SYSTEMIC FUNGICIDE FOR TURF & ORNAMENTALS	--- --- 1-2 T.	2-4 oz. 4 oz. ---	IN GREENHOUSE: Apply no more often than every 30 days. In winter, use lower rate. Excessive rates and applications may shorten flower stalks. Bayleton is cleared for landscape use only.
	trifloxystrobin COMPASS O	---	1-2 oz.	Apply when conditions favor disease and repeat every 7 to 14 days as needed.
	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.	---	FOLIAR SPRAY: Apply weekly. Use higher rate under heavy disease pressure.
Pythium and Phytophthora Seedling Damping-Off				
	captan CAPTAN 50W ORTHOCIDE 50W	See Comments.		See Annuals and Bedding Plants: Phytophthora and Pythium Damping-Off, Root and Crown Rot; Soil Pasteurization/ Fumigation.
	etr Diazole TERRAZOLE 35W TRUBAN 5G TRUBAN 25E TRUBAN 30W			See Comments for captan, above.
	etr Diazole + thiophanate-methyl BANROT 8G BANROT 40W			See Annuals and Bedding Plants: Phytophthora and Pythium Damping-Off, Root and Crown Rot; Soil Pasteurization/ Fumigation.
	fosetyl-A1 ALIETTE WDG			See Comments for etridiazole + thiophanate-methyl, above.
	mefenoxam SUBDUE GR SUBDUE MAXX SUBDUE 2X WSP			See Comments for etridiazole + thiophanate-methyl, above.

Host and Disease	Fungicide and Formulation	Rates (Unless Stated Otherwise)		Comments
		Per Gallon	Per 100 Gallons	
Commercial Ornamentals: Disease Control—Annual Flowers, Impatiens–Zinnia				
ZINNIA (cont.)				
Pythium and Phytophthora Seedling Damping-Off (cont.)				
	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.
		---	6.67-12.67 fl.oz.	DRENCH: Apply 25 gallons of solution to 100 square feet of bed area and repeat monthly as needed.
Rhizoctonia Damping-Off				
	etrifiazole + 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	---	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 lb./A 1-2.5 qt.	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 2L DEFEND 10G DEFEND 75W REVERE WSP TERRACLOR 75W			See Annuals and Bedding Plants: Rhizoctonia Damping-Off, Root and Crown Rot; Disinfestation of Equipment and Soil Pasteurization/Fumigation.
	thiophanate-methyl 3336 50W 3336 4.5F HALT 50W OHP 6672 4.5F OHP 6672 50W			See Annuals and Bedding Plants: Rhizoctonia Damping-Off, Root and Crown Rot; Disinfestation of Equipment and Soil Pasteurization/Fumigation.

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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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