



# Relative Effectiveness of Various Chemicals for Disease Control of Ornamental Plants

PPFS-GEN-13

COOPERATIVE EXTENSION SERVICE



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Relative control rating: G= good (100-80%); F= fair (79-50%); P= poor (49-0%)

Trade name	Active ingredient(s)	FRAC <sup>1</sup>	Sites <sup>2</sup>	Disease														Notes	
				Bacterial leaf spots/blights	Black root rot	Cedar rusts	Conifer Tip Blights	Downy mildew	Fire blight	Fungal stem cankers	Fungal leaf spots	Fusarium stem rot	Passalora needle blight	Phytophthora root rot	Pythium root rot	Powdery mildew	Rhizoctonia blight/root rot		
Cleary 3336, OHP 6672, Allban, Transom	Thiophanate methyl	1	G, N, L		G <sup>Dr, Dr</sup>		F-G <sup>S</sup>				P-F <sup>S</sup>	F <sup>S</sup>	F-G <sup>Dr</sup>	F <sup>S</sup>		F <sup>S</sup>	G <sup>Dr, Dr</sup>	Do not mix with copper-containing materials or with highly alkaline pesticides such as lime or sulfur.	
Banrot	Thiophanate methyl + Etridiazole	1 + 14	G, N, L		F <sup>Dr</sup>								P-F <sup>Dr</sup>	P <sup>Dr</sup>	G <sup>Dr</sup>	F-G <sup>Dr</sup>			
Spectro 90	Thiophanate methyl + Chlorothalonil	1 + M5	G, N, L		F-G <sup>Dr</sup>		F-G <sup>S</sup>					G <sup>S</sup>	G <sup>Dr</sup>	G <sup>S</sup>			F-G <sup>S</sup>	G <sup>Dr</sup>	Do not apply to green or variegated pittosporium or schefflera more than once.
Cleary 26/36	Thiophanate methyl + Iprodione	1 + 2			G <sup>Dr</sup>							G <sup>S</sup>	F-G <sup>Dr</sup>						
Chipco 26019/26 GT, Iprodione	Iprodione	2	G, N, L									F-G <sup>S</sup>	F-G <sup>Dr</sup>				F <sup>Dr</sup>		Do not apply as a soil drench on Impatiens and Pathos. Do not apply on Spathiphyllum.
Banner Maxx, Strider, Fathom <sup>i</sup>	Propiconazole	3	N, L			F <sup>S</sup>	F <sup>S</sup>					G <sup>S</sup>					G <sup>S</sup>	G <sup>Dr</sup>	May cause some growth regulator effects or phytotoxicity, in particular on rose.
Eagle, Hoist	Myclobutanil	3	G, N, L			F <sup>S</sup>						G <sup>S</sup>		F <sup>S</sup>			G <sup>S</sup>		Special use instructions for chrysanthemums. May prevent rooting on some Prunus spp. (e.g. sand cherry).
Fungaflor <sup>i</sup>	Imazalil	3	G														G <sup>S</sup>		
Rubigan	Fenarimol	3	N, L														G <sup>S</sup>		May cause leaf puckering and growth effects on some rose cultivars during cool and overcast conditions.
Strike	Triadimefon	3	Phased Out																Product is being phased out
Strike Plus	Triadimefon + Trifloxystrobin	3 + 11	G, N			F <sup>S</sup>						G <sup>S</sup>					G <sup>S</sup>		Do not apply on petunia, violets, or New Guinea impatiens. Do not apply on bearing fruit trees.
Terraguard <sup>i</sup>	Triflumizole	3	G, N, L		G <sup>Dr</sup>												G <sup>S</sup>		Do not apply on impatiens plugs; phytotoxic to some cultivars of impatiens.
Torque	Tebuconazole	3	N, L			F <sup>S</sup>						G <sup>S</sup>	F-G <sup>Dr</sup>				G <sup>S</sup>	G <sup>Dr</sup>	Not for homeowner use. Do not apply to bearing fruit trees or vegetables.
Tourney	Metconazole	3	N, L									G <sup>S</sup>					G <sup>S</sup>		May cause growth regulation on some ornamentals.
Trinity	Triticonazole	3	G									F <sup>S</sup>					G <sup>S</sup>		Total Release product in cannisters. For use on floricultural crops.
Clevis	Myclobutanil + Mancozeb	3 + M3	G, N, L			F <sup>S</sup>						G <sup>S</sup>					G <sup>S</sup>		
Concert <sup>i</sup>	Propiconazole + Chlorothalonil	3 + M5	N, L <sup>a</sup>			F <sup>S</sup>	F <sup>S</sup>					G <sup>S</sup>					G <sup>S</sup>		Do not apply on African violet, begonia, Boston fern, geranium, variegated and green pittosporium, and schefflera; may cause injury to buds, blooms, or tender new growth.





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				Bacterial leaf spots/blights	Black root rot	Cedar rusts	Conifer Tip Blights	Downy mildew	Fire blight	Fungal stem cankers	Fungal leaf spots	Fusarium stem rot	Passalora needle blight	Phytophthora root rot	Pythium root rot	Powdery mildew	Rhizoctonia blight/root rot		
Kocide <sup>d</sup>	Copper hydroxide	M1	G, N, L																Do not tank mix with Aliette. Avoid contact with metal surfaces.
Phyton 27	Copper sulphate pentahydrate	M1	G, N, L	F <sup>S</sup>						P <sup>S,R</sup>		F <sup>S</sup>						G <sup>S</sup>	May damage tender open blooms. Do not tank mix with B-NINE or use within 7 days of a B-NINE application.
Phyton 35	Copper sulphate pentahydrate	M1	G, N, L	F <sup>S</sup>					P <sup>S,R</sup>	P <sup>S,R</sup>		F <sup>S</sup>						G <sup>S</sup>	Do not apply within 7 days of B-NINE or within 14 days of acidic compounds or Aliette/phosphite applications.
Junction	Copper hydroxide + Mancozeb	M1 + M3	G, N, L	F <sup>S</sup>						F <sup>S,R</sup>		G <sup>S</sup>						G <sup>S</sup>	Injury may occur from late season application; no post-bloom applications on some plants, check label.
Protect T/O, Fore, Dithane	Mancozeb	M3	G, N, L	F-G <sup>S</sup>	P-F <sup>Dr</sup>	F <sup>S</sup>			F <sup>S</sup>			F-G <sup>S</sup>	G <sup>S</sup>					P <sup>S</sup>	Not for use on marigold.
Daconil Ultrex/Weatherstik, Mainsail	Chlorothalonil	M5	G <sup>e</sup> , N, L <sup>a</sup>				F <sup>S</sup>					G <sup>S</sup>						G <sup>S</sup>	Do not combine in the spray tank with other pesticides or fertilizers unless tested first. Avoid applications during bloom period on some plants: check label. Do not apply on poinsettia during or after bract formation.
Milstop	Potassium bicarbonate	NC	G, N, L															F-G <sup>S</sup>	Do not mix with other pesticides or fertilizers not compatible with mild alkaline solutions. Does not require the addition of a surfactant. Do not use on young pansies.
Regalia	Extract of Giant Knotweed ( <i>Reynoutria</i> )	P	G, N, L							F to P <sup>S</sup>									Concentrations at 1% or higher applied on young tissue may cause phytotoxicity.
Cease	<i>Bacillus subtilis</i>	44	G, N, L	P-F <sup>S</sup>														F <sup>S</sup>	

<sup>1</sup> Key to Fungicide Groups: 1: methyl benzimidazole carbamates; 2: dicarboxamides; 3: demethylation inhibitors; 4: phenylamides; 5: amines; 7: carboxamides; 9: anilino-pyrimidines; 11: quinone outside inhibitors; 12: phenylpyrroles; 14: aromatic hydrocarbons and heteroaromatics; 17: hydroxyanilides; 19: polyoxins; 21: quinone inside inhibitors; 33: phosphonates; 40: carboxylic acid amines; 43: benzimidazoles; 44: microbial; 45: quinone x-inhibitors. M: multi-site activity; NA: not classified; P: plant extract.

<sup>2</sup> Product labeled for use in G = greenhouse; N = nursery; L = landscape

Dr = Product should be applied as a drench

Di = Product can be applied as a plant- or cutting- dip

S = Product should be applied as a foliar spray

R = Resistance to this pesticide has been detected in the pathogen population

i = Incompatible with Rootshield

a = Do not apply to landscapes associated with apartment buildings, daycare centers, playgrounds, schools, athletic fields, etc...

b = Only Truban 5G can be used in outdoor beds; Terrazole is for commercial use ONLY; label restricts the use of Terrazole in residential greenhouses or indoor plant sites.

c = Orvego can be used in GH, lathhouses, shadehouses, hardwood and conifer plantations, interiorscapes, and outdoor / field nurseries.

d = Kocide is only labeled for use on conifers in Christmas tree plantings and silviculture nurseries.

e = Do NOT apply with mist blowers or high pressure spray equipment in greenhouses.

Note: Recommendations for the use of agricultural chemicals are included here as a convenience to the reader. The use of brand names and mention or listing of commercial products does not imply endorsement nor discrimination against similar products or services not mentioned. Individuals who use agricultural chemicals are responsible for ensuring that the intended use complies with current STATE regulations and conforms to the product label. Examine a current product label before applying any chemical. For assistance, contact your county Cooperative Extension agent.

*Reviewed April 2016*