



Relative Effectiveness of Various Chemicals for Disease Control of Ornamental Plants

PPFS-GEN-13



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

FRAC ¹	Trade name	Active ingredient(s)	REI ²	Sites ³	Bacterial leaf spots/blights	Black root rot	Botrytis	Cedar rusts	Conifer tip blights	Downy mildew	Fire blight	Fungal stem cankers	Fungal leaf spots	Fusarium stem rot	Leaf rusts	Passalora needle blight	Phytophthora root rot	Pythium root rot	Powdery mildew	Rhizoctonia blight/root rot	Notes
1	3336, OHP 6672, Allban, Fungo Flo, Transom, T-Bird, T-Methyl	Thiophanate methyl	12	G, N, L	G ^{Dr}	P-G _{S,R}		F-G ^S			P-F ^S	F ^S	F-G ^{Dr}		F ^S			F ^S	G ^{Dr}		Do not mix with copper-containing materials or with highly alkaline pesticides such as lime or sulfur.
1 + 2	26/36 Fungicide	Thiophanate methyl + Iprodione	12	G, N, L	G ^{Dr}	P-G _{S,R}						G ^S	F-G ^{Dr}								Do not apply to Spathiphyllum or New Guinea impatiens. Not effective on <i>Cylindrocladium spathiphylli</i>
1 + 14	Banrot	Thiophanate methyl + Etridiazole	12	G, N, L	F ^{Dr}								P-F ^{Dr}		P ^{Dr}	G ^{Dr}				F-G ^{Dr}	
1 + M3	Zyban	Thiophanate methyl + Mancozeb	24	G, N, L																	
1 + M5	Spectro 90	Thiophanate methyl + Chlorothalonil	12	G, N, L	F-G ^{Dr}			F-G ^S				G ^S	G ^{Dr}		G ^S			F-G ^S	G ^{Dr}		Do not apply to green or variegated pittosporium or schefflera more than once.
2	Chipco 26019, Iprodione	Iprodione	12	G, N, L		P-G _{S,R}						F-G ^S	F-G ^{Dr}							F ^{Dr}	Do not apply as a soil drench on Impatiens and Pathos. Do not apply on Spathiphyllum.
3	Banner Maxx, Strider, Fathom ⁱ	Propiconazole	12-24	N, L			F ^S	F ^S				G ^S						G ^S	G ^{Dr}		May cause some growth regulator effects or phytotoxicity, in particular on rose.
3	Bayleton 50	Triadimefon	12	L																	
3	Eagle 20EW	Myclobutanil	24	G, N, L			F ^S					G ^S			F ^S				G ^S		Special use instructions for chrysanthemums. May prevent rooting on some Prunus spp. (e.g. sand cherry)
3	Fungaflor TR ⁱ	Imazalil	24	G			F-G ^V												G ^V		
3	Terraguard ⁱ	Triflumizole	12	G, N, L	G ^{Dr}														G ^S		Do not apply on impatiens plugs; phytotoxic to some cultivars of impatiens.
3	Torque	Tebuconazole	12	N, L				F ^S				G ^S	F-G ^{Dr}					G ^S	G ^{Dr}		Not for homeowner use. Do not apply to bearing fruit trees or vegetables.



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3	Tourney	Metconazole	12	N, L								G ^S						G ^S			May cause growth regulation on some ornamentals.
3	Trinity, Trintiy TR	Triticonazole	12	G								F - G ^S						G ^S			Total Release product in cannisters. For use on floricultural crops.
3 + 11	Trigo	Triadimefon + Trifloxystrobin	12	G, N			F ^S					G ^S						G ^S			Do not apply on petunia, violets, or New Guinea impatiens. Do not apply on bearing fruit trees.
3 + M3	Clevis	Myclobutanil + Mancozeb	24	G, N, L			F ^S					G ^S						G ^S			
3 + M5	Concert II ¹	Propiconazole + Chlorothalonil	12	N, L ^a			F ^S	F ^S				G ^S						G ^S			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.
4	Subdue Maxx	Mefenoxam	0-48	G, N, L					G ^{Dr, R}							G ^{Dr, R}	P - G ^{Dr, R}				Some species of <i>Pythium</i> are insensitive to this product. A granular formulation of Subdue can also be mixed into the substrate.
4 + 12	Hurricane WDG	Mefenoxam + Fludioxonil	48	G, N												G ^{Dr, R}	P - G ^{Dr, R}		G ^{Dr}		
5	Pipron	Piperalin	12	G														G ^S			For use only in greenhouses and similar enclosed structures. May be phytotoxic on flower buds of some plants, check label.
7	Prostar	Flutolanil	12	G, N									F - G ^S						G ^{S, Dr}		
7 + 11	Pageant Intrinsic	Boscalid + Pyraclostrobin	12	G, N, L			F - G ^S	F ^S	F ^S			G ^S	F - G ^{Dr}		G ^S	F ^{Dr}	F ^{Dr}	G ^S	G ^{Dr}		Do not mix with organosilicone adjuvants. Impatiens and petunia flowers may become discolored after application. Do not apply on Ninebark or wintercreeper.
7 + 11	Okestra Intrinsic	Fluxapyroxad + Pyraclostrobin	12	G, N, L			G ^V					G ^V	F - G ^{Dr}		G ^S			G ^S			Do not apply to Ninebark or wintercreeper. May cause flower discoloration on Impatiens and Petunia. Drenching may cause stunting of Carnation/Dianthus, Impatiens, Viola/Pansy.
7 + 11	Mural	Benzovindiflupyr + Azoxystrobin	12	G, N, L			F - G ^S					G ^S									Do not apply to apple, crabapple, flowering cherry (Yoshina), privet, or leatherleaf fern and other ferns for cut foliage.
11	Compass O	Trifloxystrobin	12	G, N, L			F ^S					G ^S				F ^{Dr}		G ^S	F - G ^{Dr}		Do not mix with organosilicone adjuvants. May cause phytotoxicity on pansy.
11	Cygnus	Kresoxim methyl	12	G, N, L								G ^S						G ^S			Do not mix with organosilicone adjuvants; May be phytotoxic to some <i>Prunus</i> spp.
11	Disarm O	Fluoxastrobin	12	G, N				F ^S				F ^S	F ^S			F ^{Dr}		F ^S	F ^{Dr}		Limited host plant list; mostly herbaceous plants and rose.
11	FenStop	Fenamidone	12	G				F ^S				G ^S				F ^{Dr}	F ^{Dr}	G ^S			Do not apply to Oxalis.
11	Heritage	Azoxystrobin	4	G, N, L			F ^S	F ^S	F ^S			G ^S	F - G ^{Dr}		G ^S	P ^{Dr}	P ^{Dr}	G ^S	G ^{Dr}		Do not mix with organosilicone adjuvants
11	Empress Intrinsic	Pyraclostrobin	12	G, N									F - G ^{Dr}			P ^{Dr}	P - F ^{Dr}		G ^{Dr}		Do not mix with organosilicone adjuvants; Do not apply on Ninebark or Wintercreeper
9 + 12	Palladium	Cyprodinil + Fludioxonil	12	G, N, L								F ^S						G ^S			Do not apply to leather leaf fern or field-grown fern harvested for floral arrangements; may leave residue on poinsettia with bracts.

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					Bacterial leaf spots/blights	Black root rot	Botrytis	Cedar rusts	Conifer tip blights	Downy mildew	Fire blight	Fungal stem cankers	Fungal leaf spots	Fusarium stem rot	Leaf rusts	Passalora needle blight	Phytophthora root rot	Powdery mildew		Rhizoctonia blight/root rot	
12	Medallion, Emblem	Fludioxonil	12	G, N, L		F ^{Dr}	F-G ^S						F ^S	G ^{Dr}						G ^{Dr}	Do not apply on leather leaf fern; may cause stunting or chlorosis on impatiens and some varieties of geranium.
12	Mozart TR	Fludioxonil	24	G			G ^S						F ^S								
14	Terraclor 400	PCNB	12	G, N, L																	
14	Terrazole, Truban	Etridiazole	12	G, N, L ^b							G ^{Dr}						G ^{Dr}	G ^{Dr}			
17	Decree	Fenhexamid	12	G, N			G ^S														Only labeled for Botrytis.
19	Affirm	Polyoxin D zinc salt	4	G, N, L		G ^{Dr}	G ^S			P-F ^S			F-G ^S	F ^S					F-G ^S	F-G ^{Dr}	
21	Segway O	Cyazofamid	12	G, N, L						G ^{S,Dr}							G ^{Dr}	F-G ^{Dr}			
25	Agri-Mycin 17	Streptomycin	12	N, L							F ^{S,R}										Apply in foliar and bud sprays; Do not apply after fruit is visible.
28	Banol		24	G, N ^c													P-F ^{Dr}	P-F ^{Dr}			Phytotoxicity seen in some crops.
33	Aliette WDG, Areca	Fosetyl-AI [Aluminum tris (O-ethyl phosphonate)]	12	G, N, L	P-F ^S					G ^S							G ^{S,Dr}	G ^{Dr}	P ^S		Not compatible with flowable formulations of chlorothalonil, mancozeb, triadimefon, fenamirol, formulations containing thiophanate-methyl and chlorothalonil, or copper fungicides as tank mixtures.
33	Alude, Fosphite, K-Phite, Magellan, Resyst	Mono- and di- potassium salts of phosphorous acid	4	G, N, L	P-F ^S					G ^S							G ^{S,Dr}		F ^S		Do not apply to plants under severe water stress or during very HIGH or very LOW temperatures.
33	Vital	Potassium phosphite	4	G, N, L						G ^S							G ^{S,Dr}		F ^S		Do not apply to plants under severe water stress or during very HIGH or very LOW temperatures.
40	Micora	Mandipropamid	4	G, N						G ^{S,Dr}							F ^{Dr}				This product can also be used on vegetables sold to the retail market in GH with permanent flooring.
40	Stature SC	Dimethomorph	12	G, N						G ^{S,Dr}							F ^{Dr}	F ^{Dr}			Active may settle out of solution; requires agitation if left to sit.
40 + 45	Orvego	Dimethomorph + Ametoctradin	12	G, N						G ^{S,Dr}							G ^{Dr}				
43	Adorn	Fluopicolide	12	G, N, L						G ^{S,Dr}							G ^{Dr}	P ^{Dr}			Adorn MUST be tank mixed for resistance management with another product that is registered for use against the target disease. Do not make more than one application of Adorn per crop on poinsettia-phytotoxicity has been observed with repeat applications.
44	Cease	<i>Bacillus subtilis</i> QST 713 strain	4	G, N, L	P-F ^S						P ^S								F ^S		
M1	Camelot O	Copper octanoate	4	G, N, L	F ^S		F ^S				P ^{S,R}		F ^S						G ^S		Do not tank mix with Aliette. Avoid contact with metal surfaces. Discoloration of blooms may occur on certain plant varieties: check label. Do not apply to hibiscus plants in flower.
M1	Cuproxat	Tribasic copper sulfate	48	G, N	F ^S			F-G ^S	F ^S				F ^S			F-G ^S			F-G ^S		
M1	CuPRO, Nu-COP, Champ	Copper hydroxide	24-48	G, N, L	F ^S						P ^{S,R}		F ^S			G ^S			G ^S		Do not tank mix with Aliette. Avoid contact with metal surfaces.

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M1	Kocide ^d	Copper hydroxide	24	N												G ^s					Do not tank mix with Aliette. Avoid contact with metal surfaces.
M1	Phyton 27	Copper sulphate pentahydrate	24	G, N, L	F ^s		F ^s			P ^{s,R}		F ^s						G ^s			May damage tender open blooms. Do not tank mix with B-NINE or use within 7 days of a B-NINE application.
M1	Phyton 35	Copper sulphate pentahydrate	48	G, N, L	F ^s		F ^s		P ^{s,R}	P ^{s,R}		F ^s						G ^s			Do not apply within 7 days of B-NINE or within 14 days of acidic compounds or Aliette/phosphite applications.
M1 + M3	Junction	Copper hydroxide + Mancozeb	48	G, N, L	F ^s					F ^{s,R}		G ^s						G ^s			Injury may occur from late season application; no post-bloom applications on some plants, check label.
M3	Protect T/O, Fore, Dithane, Pentathlon	Mancozeb	24	G, N, L	F-G ^s	P-F ^{Dr}	F ^s	F ^s		F ^s		F-G ^s	G ^s			G ^s		P ^s	P-F ^{Dr}		Not for use on marigold.
M5	Daconil Ultrex / Weatherstik / Zn, Mainsail	Chlorothalonil	12	G ^e , N, L ^a			G ^s	F ^s					G ^s			G ^s			G ^s		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.
M5	Exotherm Termil	Chlorothalonil	12	G			G ^v														Do NOT apply when greenhouse temperature is above 75F
NC	Milstop	Potassium bicarbonate	1	G, N, L								P-F ^s								F-G ^s	Do not mix with other pesticides or fertilizers not compatible with mild alkaline solutions. Do NOT apply with Dipel, Latron B-1956, Latron AG-98, or horticultural oil. Does not require the addition of a surfactant. Do not apply within 25-ft of boy of water. Do not use on young pansies.
P	Regalia	Extract of Giant Knotweed (<i>Reynoutria sachalinensis</i>)	4	G, N, L						F-P ^s											Concentrations at 1% or higher applied on young tissue may cause phytotoxicity.
U15	Segovis	Oxathiapiprolin	4	G, N, L						G ^{s,Dr}						G ^{s,Dr}					

¹ 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: hydroxylanilides; 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.

² 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.

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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.