

Relative Effectiveness of Various Chemicals for Disease Control in Woody Ornamentals in NC (contact: Kelly_Ivors@ncsu.edu)
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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 ¹	Sites ²	Black root rot	Cedar rusts	Downy mildew	Fire blight	Fungal cankers	Fungal leaf spots	Passalora needle blight	Phytophthora root rot	Pythium root rot	Powdery mildew	Notes
Cleary 3336 / OHP 6672 / Allban	Thiophanate methyl	1	G, N, L	G ^{Dr, Dr}				F ^S			P ^{Dr}	G ^{Dr}	F ^S	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	G ^{Dr}										
Spectro	Thiophanate methyl + Chlorothalonil	1 + M5	G, N, L					G ^S					G ^S	Do not apply to green or variegated pittosporium or shefflera more than once.
Chipco 26019/26 GT	Iprodione	2	G, N, L											Do not apply as a soil drench on Impatiens and Pathos. Do not apply on Spathiphyllum.
Banner Maxx ³	Propiconazole	3	N, L		F ^S			F ^S					G ^S	May cause some growth regulator effects or phytotoxicity, in particular on rose.
Eagle / Hoist / Systhane	Myclobutanil	3	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)
Fungafior ¹	Imazalil	3	G					G ^S					G ^S	
Rubigan	Fenarimol	3	N, L										G ^S	
Strike	Triadimefon	3	G, N, L		F ^S			P ^S	G ^S				G ^S	May cause leaf puckering and growth effects on some rose cultivars during cool and overcast conditions.
Strike Plus	Triadimefon + Trifloxystrobin	3 + 11	G, N		?			G ^S					G ^S	Do not apply on petunia, violets, or New Guinea impatiens. Do not apply on bearing fruit trees.
Terraguard ¹	Triflumizole	3	G, N, L	G ^{Dr}				G ^S					G ^S	Do not apply on impatiens plugs; phytotoxic to some cultivars of impatiens.
Torque	Tebuconazole	3	N, L		F ^S			G ^S					G ^S	Not for homeowner use. Do not apply to bearing fruit trees or vegetables.
Tourney	Metconazole	3	N, L					G ^S					G ^S	May cause growth regulation on some ornamentals.
Trinity	Triticonazole	3	NOT ON MARKET YET		F ^S			F ^S					G ^S	
Clevis	Myclobutanil + Mancozeb	3 + M3	G, N, L		F ^S			G ^S					G ^S	
Concert ¹	Propiconazole + Chlorothalonil	3 + M5	N, L ³					G ^S					G ^S	Do not apply on African violet, begonia, Boston fern, geranium, variegated and green pittosporium, and shefflera; may cause injury to buds, blooms, or tender new growth.
Subdue Maxx	Mefenoxam	4	G, N, L			G ^{Dr, R}				G ^{Dr, R}	P- G ^{Dr, R}		G ^S	Some species of <i>Pythium</i> are insensitive to this product. A granular formulation of Subdue can also be mixed into the substrate.
Pipron	Piperalin	5	G										G ^S	For use only in greenhouses and similar enclosed structures. May be phytotoxic on flower buds of some plants, check label.
Pageant	Boscalid + Pyraclostrobin	7 + 11	G, N, L			F ^S		G ^S					G ^S	Do not mix with organosilicone adjuvants. Impatiens and petunia flowers may become discolored after application. Do not apply on Ninebark or wintercreeper.
Compass O	Trifloxystrobin	11	G, N, L		F ^S			G ^S					G ^S	Do not mix with organosilicone adjuvants. May cause phytotoxicity on pansy.
Cygnus	Kresoxim methyl	11	G, N, L					G ^S					G ^S	Do not mix with organosilicone adjuvants; May be phytotoxic to some Prunus spp.
Disarm	Fluoxastrobin	11	G, N, L			F ^S							G ^S	
Disarm C	Fluoxastrobin + Chlorothalonil	11 + M5	NOT ON MARKET YET		F ^S			G ^S	G ^S				G ^S	
FenStop	Fenamidone	11	G			F ^S		G ^S		F ^{Dr}	F ^{Dr}		G ^S	Do not apply to Oxalis.
Heritage	Azoxystrobin	11	G, N, L		F ^S	F ^S		G ^S		P ^{Lx}	P ^{Lx}		G ^S	Do not mix with organosilicone adjuvants
Insignia	Pyraclostrobin	11	G, N, L		F ^S	F ^S		G ^S		P ^{Dr}	P ^{Dr}		G ^S	Do not mix with organosilicone adjuvants; Impatiens and Petunia flowers may become discolored after application; Do not apply on Ninebark or Wintercreeper
Palladium	Cyprodinil + Fludioxonil	9 + 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.
Medallion	Fludioxonil	12	G, N, L	F ^{Dr}				F ^S					G ^S	Do not apply on leather leaf fern; may cause stunting or chlorosis on impatiens and some varieties of geranium.
Terraclor	PCNB	14	G, N, L										G ^S	
Terrazole / Truban	Etridiazole	14	G, N, L ³		G ^{Dr}					G ^{Dr}	G ^{Dr}		G ^S	
Decree	Fenhexamid	17	G, N										G ^S	Only labeled for Botrytis.
Endorse / Affrim / Veranda O	Polyoxin D	19	G, N, L			F ^S							G ^S	
Segway	Cyazofamid	21	G, N, L		G ^{S, Dr}					G ^{Dr}	F - G ^{Dr}		G ^S	
Agri-Mycin 17	Streptomycin	25	N, L			F ^{S, R}							G ^S	Apply in foliar and bud sprays; Do not apply after fruit is visible.
Aliette	Fosetyl AL	33	G, N, L		G ^S				G ^{S, Dr, Dr}	G ^{Dr}	P ^S		G ^S	Aliette is not compatible with flowable formulations of Daconil, Fore, or copper fungicides as tank mixtures.
Alude / Fosphite / K-Phite / Magellan	Mono- and di- potassium salts of phosphorous acid	33	G, N, L		G ^S				G ^{S, Dr, Dr}		F ^S		G ^S	Do not apply to plants under severe water stress or during very HIGH or very LOW temperatures.
Biophos	Dipotassium salts of phosphorous acid	33	G, N, L								F ^S		G ^S	Do not tank mix with copper or surfactants.
Vital	Potassium phosphite	33	G, N, L		G ^S				G ^{S, Dr}		F ^S		G ^S	Do not apply to plants under severe water stress or during very HIGH or very LOW temperatures.
Micora	Mandipropamid	40	G, N		G ^{S, Dr}					F ^{Dr}			G ^S	This product can also be used on vegetables sold to the retail market in GH with permanent flooring
Orvego	Dimethomorph + Ametoctradin	40 + 45	G, N ²		G ^{S, Dr}					G ^{Dr}			G ^S	
Stature	Dimethomorph	40	G, N		G ^{S, Dr}					F ^{Dr}	F ^{Dr}		G ^S	Active may settle out of solution; requires agitation if left to sit.
Adorn	Fluopicolide	43	G, N, L		G ^{S, Dr}					G ^{Dr}	P ^{Dr}		G ^S	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.
Camelot O	Copper octanoate	M1	G, N, L			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.
CuPRO	Copper hydroxide	M1	G, N, L			P ^{S, R}		F ^S	G ^S				G ^S	Do not tank mix with Aliette. Avoid contact with metal surfaces.
Kocide ⁴	Copper hydroxide	M1	G, N, L						G ^S				G ^S	Do not tank mix with Aliette. Avoid contact with metal surfaces.
Phyton 27	Copper sulphate pentahydrate	M1	G, N, L			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.
Junction	Copper hydroxide + Mancozeb	M1 + M3	G, N, L			F ^{S, R}		G ^S					G ^S	Injury may occur from late season application; no post-bloom applications on some plants, check label.
Protect / Fore	Mancozeb	M3	G, N, L					G ^S					G ^S	Not for use on marigold.
Daconil Ultrex	Chlorothalonil	M5	G ³ , N, L ³		F ^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.
Milstop	Potassium bicarbonate	NC	G, N, L										F-G ^S	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 sachalinensis</i>)	P	G, N, L			F to P ^S							G ^S	Concentrations at 1% or higher applied on young tissue may cause phytotoxicity.
Rhapsody / Cease	<i>Bacillus subtilis</i>	44	G, N, L										F ^S	

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: hydroxanilides; 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; Terraclor is for commercial use ONLY; label restricts the use of Terraclor in residential greenhouses or indoor plant sites.
^c = Orvego can be used in GH, lathouses, 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.