

Cooperative Extension---The Pennsylvania State University

Plant Disease Facts

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POINSETTIA DISEASES

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<u>DISEASE</u>	<u>SYMPTOMS</u>	<u>PATHOGEN/CAUSE</u>	<u>MANAGEMENT</u>
AMMONIUM TOXICITY	Root and top growth is restricted. Lower leaves yellow while leaf margins burn.	Favored by low light and low temperature in late fall, acidic potting mix, and exclusive use of ammonium nitrogen source.	Do not use ammonium nitrogen sources exclusively. Do not over-water during periods of low light and low temperature.
BACTERIAL CANKER	Longitudinal water-soaked streaks on stems and spots on leaves. Defoliation and plant death follow.	<i>Curtobacterium poinsettia</i>	Destroy infected plants. Avoid overhead irrigation.
BACTERIAL STEM ROT	Cuttings develop a soft rot at the base which moves upward quickly and kills the cutting. Wounded stems of older plants develop soft rot and lodge.	<i>Erwinia carotovora</i>	Use sterile propagation media. Discard infected cuttings and infested media. Destroy infected plants and crop debris. Disinfect tools.
BOTRYTIS FLOWER BLIGHT	Brown spots form on flower, leaf, or stem tissue.	<i>Botrytis cinerea</i>	Avoid damaging plants. Remove damaged tissues. Space plants to provide good air circulation. Heat and vent to reduce humidity. If these practices are followed, then fungicides can help in management. Apply chlorothalonil (thermal smoke) to dry foliage not blossoms; or fenhexamid, or iprodione to foliage.

BOTRYTIS STEM CANKER	Large, light brown to tan, slightly sunken cankers form on older stems especially near large branches or crotches. Defoliation and death of branches occur above cankers that girdle stems.	<i>Botrytis cinerea</i>	Avoid damaging established, well-branched plants. Apply fludioxonil, trifloxystrobin, chlorothalonil, or iprodione to stems.
LEAF DROP	Defoliation.	Root rot, over-fertilization, low light intensity, or lack of moisture.	Avoid root rots and over-fertilization. Clean the greenhouse covering and space plants well. Maintain even soil moisture levels.
MAGNESIUM DEFICIENCY	Yellowing develops between the veins of mid and lower leaves.	Insufficient magnesium.	Use of magnesium-containing limestone. Apply a magnesium-containing fertilizer.
MOLYBDENUM DEFICIENCY	Yellowing is followed by burning of lower leaf margins. Lower leaf margins are cupped downward.	Lack of molybdenum or acidic pH potting mixes (pH 4.5; 5.5 on some cultivars)	Lime to adjust the soil pH above 5.5. Use of molybdenum-containing fertilizer or a complete minor element supplement, or add sodium molybdate to soluble fertilizer.
OVER- FERTILIZATION	Plants are stunted. Lower leaves yellow and fall. Leaf margins yellow and burn.	The combined use of slow-release and soluble fertilizer or soluble fertilizer use with no leaching favors this. Conductivity readings at or above 1.0 mS for soil or 2.5 mS for soilless mixes (saturated paste extract) are excessive.	Do not combine the use of slow-release and soluble fertilizers. In continuous feed programs, 10% of the soluble fertilizer applied should leach out the bottom or clear tap water should be applied every second or third watering. If soluble salts become excessive, leach heavily, wait overnight, and leach again.

POWDERY MILDEW	Yellow spots form on the upper surface of leaves. White fungal growth in patches is seen on leaves and bracts.	<i>Oidium</i>	Scout stock plants frequently and inspect cuttings as soon as they arrive. Continue scouting throughout the season, especially as plants are being spaced. Apply thiophanate methyl, piperalin, or kresoxim methyl as soon as any mildew is found. Control must prevent disease before bracts form. Fungicides do not make the white fungus go away after it is dead..
PHYTOPHTHORA ROOT and STEM ROT	The base of infected stems appear soft and wet. Roots are brown and water soaked. Cuttings wilt and die rapidly. Under dry conditions, the pith of the lower stem is brown and the stem has a gray canker.	<i>Phytophthora nicotianae</i>	Immediately discard infected plants. Use pasteurized soil and clean pots and tools. Keep hose ends off the ground. Apply potassium salts of phosphorus acid, mfenoxam, dimethomorph, or etridiazole as a soil drench.
PYTHIUM ROOT ROT	Early in season, the rooted cuttings are stunted, yellow, and wilting. Roots are dark brown and the outer layers of root tissue strip off leaving a bare strand of inner vascular tissue exposed. Later in the season, plants defoliate and flower prematurely.	<i>Pythium</i>	Use only sterile soil and clean pots and tools. Keep hose ends off the ground. Do not over-water or over-fertilize plants. Apply potassium salts of phosphorus acid, etridiazole, dimethomorph, mfenoxam, or etridiazole + thiophanate methyl.
RHIZOCTONIA ROOT ROT	Early in the season, cuttings wilt and yellow. Roots are rotted. Lower stems below ground may have a shredded appearance. Later, stunted plants defoliate, flower prematurely, and die. Sunken dark brown areas on stem may reach slightly above soil line.	<i>Rhizoctonia solani</i>	Use only sterile soil and clean tools, and hang us hose ends. Do not over-fertilize. Apply PCNB, etridiazole + thiophanate methyl, fludioxonil, flutolanil, triflumizole, or iprodione at planting.

SCAB

Small, light-colored, round spots with yellow halos form on the leaf, particularly along the main vein. Infected stems stretch several inches above the normal crop.

Sphaceloma poinsettiae

Maintain low relative humidity in the crop canopy. Do not wet the foliage when irrigating. Apply azoxystrobin, trifloxystrobin, triflumizole, or triadimefon to protect plants.

THIELAVIOPSIS
ROOT ROT

Late in the season, roots turn black. Plant wilt. Longitudinal splits form at the stem base at and below soil line. Leaves yellow and fall.

Thielaviopsis basicola

Use only sterile soil and clean tools, and hang up hose ends. Apply thiophanate methyl or etridiazole + thiophanate methyl.



Scab



Thielaviopsis root rot.



Rhizoctonia webbing from rotting stem to wet paper towel.



Powdery mildew.



Botrytis stem canker.

*Botrytis* on bract.

FRAC Group No.	Risk Level	Class	Active ingredient	REI Interval	Trade names (EPA Reg. no.)
1	3	Benzimidazole	thiophanate methyl	12	3336 (1001-69), OHP 6672 (51036-329-59807), Fungo Flo (51036-329-59807), Systec 1998 (48234-12)
2	3	Dicarboximide	iprodione	12	Chipco 26GT (100-1138), Chipco 26019 (264-481), Iprodione (51036-361), Sextant (51036-361-59807)
3	2	Imidazole	triflumizole	12	Terraguard (400-433)
4	3	Acylanine	mefenoxam	0	Subdue MAXX (100-796)
5		Piperidine	piperalin	24	Pipron (67690-1)
7		Anilide	flutolanil	12	Contrast (45639-208-58185)
			oxycarboxin	12	Plantvax (400-144)
11	3	Strobilurin	azoxystrobin	4	Heritage (10182-408)
			kresoxim-methyl	12	Cygnus (7969-124)
12	2	Phenylpyrol	fludioxonil	12	Medallion (100-769)
14	1	Aromatic hydrocarbon	PCNB	12	Revere (400-407-10404), Blocker (5481-211), Terraclor (400-399), Defend (5481-444-1001)
		Thiadiazole	etridiazole	12	Truban (58185-7), Terrazole (400-416)
17	2	Hydroxylanilide	fenhexamid	4	Decree (66330-35-67690)
40		Cinnamic acid derivative	dimethomorph	12	Stature (241-419-67690)
M	1	Chloronitrile	chlorothalonil	48	Daconil (50534-9), Exotherm Termil (70-223)
				12	Echo (60063-7), PathGuard (60063-7-499), Concorde (72167-24-1812), Pegasus (72167-24-1812)

Fungicides and Fungicide Resistance Management - Certain fungicides, usually systemic fungicides, are said to be 'at risk' to the development of resistance if they are used repeatedly. See the Risk Level in the above table (1 = low risk; 3 = high risk). The Fungicide Resistance Action Committee has developed a numbering system in which chemicals with the same FRAC Group number have the same mode of action (See <http://www.frac.info/frac/index.htm>). It is recommended that chemicals at high risk be used sparingly and in rotation or mixed with chemicals with different modes of actions (different FRAC number).

NOTICE: THE USER OF THIS INFORMATION ASSUMES ALL RISKS FOR PERSONAL INJURY OR PROPERTY DAMAGE.

WARNING! PESTICIDES ARE POISONOUS. READ AND FOLLOW ALL DIRECTIONS AND SAFETY PRECAUTIONS ON LABELS. HANDLE CAREFULLY AND STORE IN ORIGINAL LABELED CONTAINERS OUT OF THE REACH OF CHILDREN, PETS, AND LIVESTOCK. DISPOSE OF EMPTY CONTAINERS RIGHT AWAY, IN A SAFE MANNER AND PLACE. DO NOT CONTAMINATE FORAGE, STREAMS OR PONDS.

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