Poinsettia Disease Management*

Gail Ruhl - Disease Diagnostician, Purdue University

There are several infectious diseases of poinsettias, thus successful production of poinsettias requires knowledge of these diseases. Proper disease management involves knowing what to expect and being prepared with preventive measures, as well as needs for curative actions. Successful integration of disease prevention practices into your total management plan for poinsettia production is absolutely necessary.

The following paragraphs summarize information needed to manage poinsettia problems in the order in which you, as a grower, might encounter them as your crop matures.

1) Propagation diseases:

Bacterial soft rot
Botrytis cutting blight
Non-infectious cutting burn and rot
Sunburn on leaves (non-infectious)

Bacterial soft rot occurs on the lower end of cuttings usually within three days of sticking. The rot is soft and odiferous. The rot usually stops at or near the growing medium line. Infected cuttings sometimes recover, callus, and root above the rotted area. Bacterial soft rot is very difficult to control completely. Begin by attention to sanitation. Discard crop debris. Keep floors clean with a disinfectant. Avoid splashing dirty water around. Allow for good spacing between stock plants and provide good air circulation over the stock plants. Do not apply excessive nitrogen so as to avoid the production of "soft" plants, prime material for later soft rot infections. Use minimum mist during rooting and keep rotted material cleaned out daily. (Note: some growers have experienced control of bacterial soft rot as an added side benefit with the use of Agribrom in the mist for algae control.) Spray disinfest before placing new cuttings down. If temperature control over the rooting beds is possible, try to maintain it at 70 to 80 degrees.

Do not preventively spray poinsettia cuttings for Botrytis blight unless you have a history of this problem during propagation. If you see Botrytis beginning, dry the bed with good air circulation and ventilation coupled with heating at sundown; stop misting cuttings early enough in the evening so they will dry out by nightfall; do not allow as many leaves to remain on the cuttings; space the cuttings further apart and place a barrier of fungicide on the cuttings. Daconil 2787, Cleary's 3336, Zyban, Ornalin, Domain FL, Chipco 26019, and Benlate WP are all registered as sprays on poinsettia for Botrytis diseases. Follow all labeled use directions closely. Spray lightly on cuttings. Begin misting the cuttings as soon as the spray dries. Watch for the need to make a second application.

2) Early-on growing diseases:

Rhizoctonia root and stem rot
Virus
(Pythium root rot-usually comes on later)

Rhizoctonia can quickly spread through your crop soon after newly rooted cuttings are potted. The still green, herbaceous stem tissue is quite susceptible, especially if it is wounded during potting or damaged by an accumulation of fertilizer salts at the growing medium surface. Make sure cuttings are healthy before potting. Do not place cuttings too deeply in the pot. Use sanitized growing media in new or sanitized pots. Control dust and other blowing soil situations. Keep the plants moderately moist at all times. Use a **PREVENTIVE** fungicide drench program (Figure 1).

If the weather is cool, you may see virus caused deformation and an odd greening (mosaic) of the new growth. There is nothing that can be done. Many of these plants seem to recover to a saleable condition.

*Much of the information in this article was adapted from: Poinsettias - Disease Control Update for 1990, Ohio Florists Association Bulletin, July 1990, by Dr. C.C. Powell, Ohio State University.

3)Mid-season diseases:

Pythium root rot
Thielaviopsis root rot
Salts damage to roots (non-infectious)
Trace element deficiencies (non-infectious)

Pythium is a root pruner that can quickly destroy a root system by rotting the tiniest roots completely. The rapidly growing and regenerating roots of younger plants will mask the symptoms of the disease. When root growth slows as plants mature, the disease often worsens as plants yellow, wilt, and die. Control Pythium with good sanitation and avoidance of root stress (over or underwatering, fertilizer burn, etc.). Use a well aerated potted mix and preventively drench with a proper fungicide (Figure 1).

Thielaviopsis shows up as a black stem and root rot. It is infrequently seen because it is a stress induced disease easily controlled by keeping soil acidity (pH) below 6.5. Chemical drenches can be used if needed (Figure 1).

4) Maturation diseases:

Botrytis bract blight
Bacterial wilt
Stem canker
Bract injuries or burn (non-infectious)
Gummosis or "rabbit-tracks" (non-infectious)

Botrytis bract blight can quickly destroy the saleability of poinsettias! Sprays are not suitable because of residue spots. Therefore, control this disease by preventing high humidity and condensation of water on the bracts. You must ventilate while heating to dry the air properly in many greenhouses. Never water the crop late in the day. Smokes and other low-volume fungicide application technologies can be used where properly labelled and available. Exotherm termil may be used up to the time color shows.

Bacterial wilting and the formation of a bacterial-fungal stem canker are occasionally seen in poinsettia crops. Not much is known about these diseases. Remove and destroy affected plants immediately. Avoid splashing water and clean your hands well after any handling of diseased plants.

The results of knowledge and planning concerning poinsettia pathology is the secret to disease-free crops. Do not worry about poinsettia diseases! Worry and work at poinsettia health!

Figure 1. Management Procedures for Stem and Root Rot Diseases on Poinsettias:

Cultural Procedures

1) Make certain cuttings are healthy before potting. Inspect roots carefully to observe that they are free of brown spots or lesions and that root tips are sound and white. Avoid injuries when planting, especially to stem, root, or callus tissue areas. Do not plant cuttings too deeply (no deeper than they were in propagation).

2) Plant cuttings only into a well-aerated growing mix, sanitized to ensure freedom from pathogens.

3) Practice good greenhouse cleanliness and sanitation. Use disinfestants routinely in the greenhouse.

4) Be mindful to avoid even short episodes of excess soluble salts and pH in the growing medium. Keep the growing medium moderately moist at all times. One short but excessively dry growing medium episode can lead to a serious infection period. At each irrigation, moisten the medium thoroughly so that some water runs through and out the bottom of the pots.

5) Treat the potting medium regularly with appropriate fungicides.

Chemical Procedures

Six different chemical application programs can be used. They are as follows:

1) Pretreatment of the planting medium with Banrot 8% granular. After eight weeks, begin one of the programs listed below.

2) Drench at planting and monthly thereafter with Benlate 50 WP at 1 pound per 100 gallons, plus one of the following:

•Truban 25WP at eight ounces per 100 gallons, or

•Truban 25EC at eight ounces per 100 gallons, or
•Terrazole 25EC at eight ounces per 100 gals., or
•Terrazole 35WP at six ounces per 100 gallons, or
•Banol 66.5EC at 20 ounces per 100 gallons, or
•Subdue 2E at one ounce per 100 gallons.

(You may also use Truban (5%) granular, Terrazole (5%) granular, or Subdue (2%) granular as a growing medium pretreatment in place of the initial Truban, Terrazole, Banol, or Subdue drench.)

3) Drench at planting and monthly thereafter with Domain FL at 20 ounces per 100 gallons, Cleary's 3336, 4F at 1.5 pints per 100 gallons or Cleary's 3336, 50WP at 12 ounces per 100 gallons plus one of the following:

•Truban 25WP at eight ounces per 100 gallons, or
•Truban 25 EC at eight ounces per 100 gallons, or
•Terrazole 25EC at eight ounces per 100 gals., or
•Terrazole 35WP at six ounces per 100 gallons, or
•Banol 66.5EC at 20 ounces per 100 gallons, or
•Subdue 2E at one ounce per 100 gallons.

4) Drench at planting with Terrachlor 75WP at 4 ounces per 100 gallons of water plus one of the following:

•Truban 25WP at eight ounces per 100 gallons, or
•Truban 25 EC at eight ounces per 100 gallons, or
•Terrazole 25EC at eight ounces per 100 gals., or
•Terrazole 35WP at six ounces per 100 gallons, or
•Banol 66.5EC at 20 ounces per 100 gallons, or
•Subdue 2E at one ounce per 100 gallons.

For the second and subsequent months use programs 2 or 3 above.

5) Drench at planting with Banrot 40WP at 12 ounces per 100 gallons and monthly thereafter.

6) Drench at planting with Benlate WP, Domain FL, Terrachor 75WP, Cleary's 3336, 50WP or 4F; or Banrot 4F; or Banrot 40WP as outlined above. Treat at potting and every eight weeks thereafter with Subdue 2G as a top-dressed fungicide at 30 to 60 ounces per 1,000 square feet or Truban 5G at 6 to 8 pounds per 1,000 square feet. (Note that this program does **not** provide for continued Rhizoctonia crown rot protection. However, many grow-

ers do not experience Rhizoctonia problems after plants become established in the pot.)

Always follow labeled use instructions when using any fungicide. When drenching fungicides into the growing medium, it is most important to wet the mix thoroughly with the drench suspension. Apply when the growing medium is moderately dry.