

# GROWERTALKS

## Pest Management

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### Poinsettia Disease Timeline

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There are a veritable pantheon of diseases that might be encountered during the annual propagation and production of poinsettias. The following article lays out the timeline of what usually happens at each stage of the crop and ways to manage losses from these diseases.

*Left: Good water management is the best way to minimize or avoid Erwinia.*

*Right: Sphaceloma poinsettiae appears as scab-like spots on petioles, stems or leaves during mid-season production.*

### Propagation diseases

The first diseases that appear in poinsettia propagation each year are Erwinia blight (caused by *E. carotovora*, which was renamed *Pectobacterium carotovorum*) or soft rot and Rhizoctonia cutting or stem rot (caused by *R. solani*). They sometimes look rather similar. Be sure to keep mist minimal (especially overnight) and turn off as soon as possible. Most growers report that water management alone is the best way to minimize or avoid Erwinia. Using bactericides is usually less effective than water management.

Rhizoctonia cutting rot starts as a brownish lesion where the cutting enters the cube. It's also common for leaves to become infected and under high temperatures and high moisture the mycelia of the pathogen covers the infected cutting. Rhizoctonia mycelia are usually reddish-brown in color and have the consistency of a spider web. Rhizoctonia cutting rot is easily managed by using pathogen-free cuttings and never reusing rooting cubes or trays. Fungicides, especially Medallion and Pageant, can be very effective and should be applied once only right after sticking. Do not apply as a drench but simply as a sprench to cover the base of the cutting where it enters the rooting cube.

### Early-season production

Early season production diseases can include Xanthomonas leaf spot and Alternaria leaf spot.

*Xanthomonas campestris* pv. *poinsettiicola* occurs rarely but was a serious problem for poinsettia production in 2010. The disease started on infected cuttings and continued through the entire production cycle. Symptoms are generally confined to pinpoint yellow to tan lesions scattered across the leaf surface, although they can become large and confined between leaf veins.

Lesions are mostly 1/8 in. wide with irregularly raised edges. Severe infections can cause distortion of new leaves as well as complete yellowing and finally leaf loss. Eliminate all stock plants that have *Xanthomonas* leaf spot. Keeping the leaves as dry as possible will minimize infection and expression of this bacterial leaf spot. Bactericides, such as copper-containing compounds may be somewhat effective if used on a preventative and regular basis. One trial last fall showed good control with KleenGrow and copper, although the KleenGrow caused damage at the rate employed (12.5 oz./100 gal.). Always test your plants for sensitivity to an unfamiliar chemical application before using on a broad scale.

*Alternaria* leaf spot (*Alternaria euphorbiae*) occurs more or less the same time as *Xanthomonas* and it can be quite difficult to tell the two apart by symptoms alone. *Alternaria* leaf spot of poinsettias is characterized by small (less than 1 mm in diameter) lesions, which are initially water-soaked. These lesions turn reddish-brown, may reach 1/8 in. in diameter and are roughly circular. Lesions generally do not have any type of halo. Only a lab ID will tell you exactly which leaf spot is present. *Alternaria* can be effectively controlled with many fungicides, like strobilurins and Medallion and many other fungicides, including those with chlorothalonil and strobilurins.

## Mid-season production

One of the mid-season diseases that may appear is scab caused by *Sphaceloma poinsettiae*. It did appear in a small way in 2010. It usually appears as scab-like spots on petioles, stems or leaves. They are tan, slightly raised and corky. If the lesion encompasses the stem it can result in dieback above the lesion. A bright yellow halo can develop around leaf spots. Infected cuttings often grow very tall and stand out above the uninfected in the pot or table. The fungus actually makes a plant growth regulator stimulate the unusual growth. Never use cuttings from infected plants as the disease is easily carried over to the next crop in this manner. The best fungicides for scab prevention include Terraguard and the strobilurins.

Phytophthora stem rot can occur during the end of summer as the plants begin to fill out during mid-season production. The pathogen is usually *Phytophthora drechsleri*. Plants can collapse very quickly when infected with *Phytophthora*, especially if heat stress occurs. Usually the stems are affected before the roots are lost. Use pathogen-free cuttings and never reuse potting media, trays or pots. Stature, phosphonates (like Aliette), Segway, FenStop and Subdue MAXX are all effective on *Phytophthora* diseases on many other ornamentals.

One of the worst diseases to encounter is Rhizopus blight caused usually when severe heat accompanies high humidity. A soft, mushy brown rot can start anywhere on infected plants, including cutting bases, leaves, flowers and shoot tips. The white mycelium and black sporangia of the pathogen form rapidly on all infected plant parts, giving them a fuzzy or bearded look. This disease can spread by air movement as well as splashing from rainfall or irrigation. It's generally only a problem during conditions with high temperatures and relative humidities. Keep plant stress as low as possible to aid in resisting this disease. Extensive and serious cultural controls have proven effective in controlling this disease on some floricultural crops. Medallion has been shown effective on *Rhizopus* on other crops.

## Mid- to late-season production

Mid- to late-season diseases include powdery mildew and, of course, Botrytis blight. Botrytis can be minimized with irrigation management and venting and heating at dusk to lower overnight condensation on leaves and bracts. Powdery mildew (*Oidium sp.*) appears as a white powdery coating covering the top and sometimes the bottom leaves, as well as bracts of the affected plants. The covering sometimes forms in circular lesions and sometimes covers the entire surface of the leaf. Older spots may appear grayish around their edges. Applications of Terraguard in early production have been shown to effectively control powdery mildew through the entire crop cycle. Both diseases can be minimized by spacing crops and using HAF fans to minimize humidity immediately around the plants.

The last disease you may encounter is Botrytis stem rot, caused by *Botrytis cinerea*. You should control this with irrigation management and avoid white cultivars when possible. They can be sprayed with Chipco 26019, Decree or Medallion right before the canopy closes since penetrating it at the end of production can be impossible.

## What about Pythium?

Pythium root rot (*Pythium aphanidermatum* and sometimes *P. irregulare*) is truly a disease for all seasons. That means we will see it on cuttings during the propagation phase and it can appear at any time—including the day you decide to ship the crop. Root rot starts as brownish root tips that rapidly disintegrate and cause the upper portions of the plant to yellow and wilt. The lower leaves of badly rotted cuttings drop off and the bases of these cuttings are black or brown and mushy. This disease is common in poorly aerated, water-logged soils.

Always use clean or new pots and potting medium to reduce the chances of introducing *Pythium spp.* into production. Growing plants away from the native soil is also a good idea since the pathogens can be transferred readily to your poinsettia crop. The combination product of etridiazole and thiophanate methyl (Banrot), mefenoxam (Subdue MAXX) and other products that work well for Pythium (including Segway) are often employed to prevent or reduce Pythium root rot. Prevention or treatment with RootShield can also be very effective.

Disease prevention and management is in your hands. The combination of cultural, biological and chemical controls called IPM is always the most effective means of disease control. **GT**

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