

## How To Prevent And Solve Root Diseases in Poinsettias

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Poinsettias have a longer production cycle than most greenhouse crops, and also one of the smallest sales windows. Therefore, anything that delays or stunts the crop can lead to potential crop failure.

One of the most common causes of poinsettia production delay are root diseases in the crop. Disease management in poinsettia crops should be focused on prevention as opposed to control. Once a disease has infected a plant and symptoms become visible, control is difficult and often ineffective. Understanding the pathogen sources and environmental conditions that promote infestations helps to minimize those situations before a disease takes hold.

### **Poor Greenhouse Sanitation**

The most common sources of root rot pathogens in poinsettias are poor greenhouse sanitation, infected stock plants or cuttings, and contaminated water or growing media.

By far, the most common source is poor greenhouse sanitation. Growers should remove any weeds and trash under benches and treat both benches and floors with a sanitizing agent between crops.

## Contaminated Cuttings

Purchasing cuttings from a reliable source reduces the potential of receiving contaminated stock or cuttings. Close monitoring of plants for the first few days after receiving them and treating with a fungicide if diseases are present should limit the impact of contaminated stock or cuttings.

If the water source is from a pond or is recycled, a sterilization system should be used. Never reuse old growing media. For the suppression of Fusarium, Pythium and Rhizoctonia root diseases, use a PRO-MIX BIOFUNGICIDE or PRO-MIX BIOFUNGICIDE\* + MYCORRHIZAE product.

## Poor Drainage

One environmental condition common to almost all root diseases is poor drainage or water-logged conditions in the growing medium (Figure 1). To minimize these conditions, a grower should only water when the medium is dry, supply adequate air movement, and above all keep things clean.



Figure 1: Root diseases commonly occur in poinsettias late in the season when it is easier to overwater due to colder temperatures, shorter day length and slow water uptake by the plant. Source: Premier Tech

## How to Monitor Root Diseases

All root rot diseases will ultimately result in root death and wilting of the poinsettia crop. Once wilting occurs, the disease has advanced to the point it is no longer possible to save the plant.

To monitor for root diseases, a grower should regularly gently remove a poinsettia from its container and examine the roots. Healthy roots are white and firm while diseased roots are dark in color and soft or “slimy” to the touch.

If diseased plants are found, they should be removed from the growing bench and discarded to limit the spread of the disease to other plants on the bench. A fungicide drench should also be applied.

## Most Common Root Rot Diseases of Poinsettias and Their Symptoms

### ***Pythium***

*Pythium* affects the roots (more than the stems) and turns them brown with the outer portion of the root easily sliding off, leaving bare inner layers (stele) exposed. *Pythium* can result in premature flowering. Plants that are fertilized at high rates and overwatered are often more susceptible to *Pythium*.

### ***Rhizoctonia***

With a *Rhizoctonia* infestation, the stems will appear wet and soft at the soil line, the roots will be brown, and the lower leaves will turn yellow and fall off (Figure 2). This disease most often strikes early in the production cycle when the temperatures are high.



Figure 2: *Rhizoctonia* in poinsettias. Source: Premier Tech Horticulture

### ***Fusarium***

*Fusarium* causes roots and stems to soften and can develop a cream to orange color at the infection site.

### ***Thielaviopsis***

*Thielaviopsis* most often attacks the plants late in the season, with the roots becoming black and the plant wilting. It thrives in growing media with a pH above 5.6 and prefers wet growing media.

### ***Phytophthora***

A *Phytophthora* infestation looks very similar to *Rhizoctonia* and is also most likely to strike when temperatures are high, and the plants are water-logged.

While there are other root rot diseases that can strike poinsettias, these are the five major disorders. Remember that the most important tools needed to help produce a high-quality, disease-free poinsettia crop are greenhouse sanitation and a systematic monitoring program to catch any diseases before they spread.

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