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Poinsettia Propagation: Erwinia and Rhizoctonia

The warm, moist environment during poinsettia propagation is perfect for the development of Bacterial Soft Rot and Rhizoctonia. This e-GRO Alert helps you identify these two diseases.



The moist, warm conditions used during the rooting of poinsettia cuttings is also the perfect environment for unwanted guests. The first sign of a problem is yellowing and collapse of cuttings (Fig. 1). Within a few days, cuttings will then turn brown and die. There are two common diseases that occur during poinsettia propagation, bacterial soft rot (*Erwinia carotovora*) and Rhizoctonia (*R. solani*). Each disease has unique features that can be used to help identify if they are the cause of the problem.

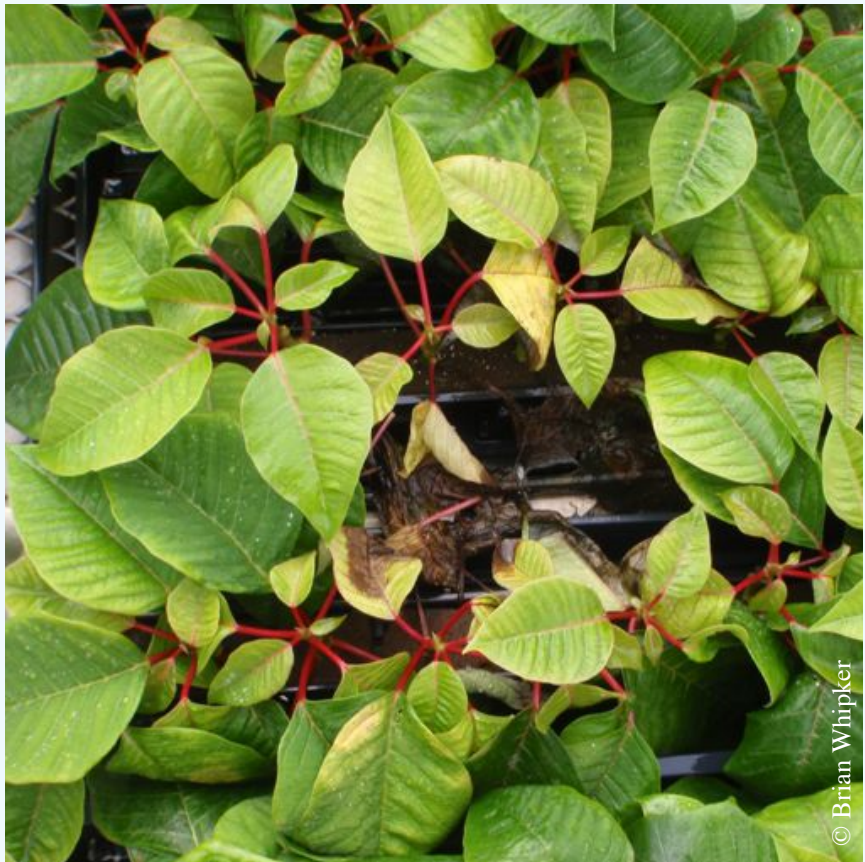


Figure 1. The first sign of disease problems is yellowing, collapsing, and dead plants. Closer inspection the cuttings will help identify the problem.

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e-GRO Alert

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Erwinia

Wounded tissue is the perfect entry point for the disease. During propagation, infected plants will quickly collapse (Figs. 2 & 3). The cuttings will have a fishy smell (old gym socks) that helps in indentifying the disease. The stems will be mushy and fall over. There will not be any signs of fungal strands (mycelium) present.

Rhizoctonia

Cuttings infected with Rhizoctonia will have white fungal strands (mycelium) present around the base of the cutting (Figs. 4 &

5). Fungal strands can extend from one propagation cell to the next. Fungal strands may not always been seen on the surrounding plants, but they are often already infected.

Some 15 year old advise from a retired plant pathologist at NC State University, Dr. Ron Jones: “the rest of the cuttings in the strip are dead, you just do not know it yet” (Figure 6). He observed over the years that it was better to throw out the strip than to transplant the cuttings. Most if not all of the cuttings would most likely die later

Additional Information

e-GRO Disease Advisor
Online disease control recommendations
www.egro.mobi/

Poinsettia: Some Common Diseases of the Christmas Flower

<http://ncsupdicblog.blogspot.com/2011/12/poinsettia-some-common-diseases-of.html>

Poinsettia Disease Primer

<http://hortipm.tamu.edu/publications/Poinsettia.html>

Disease of Poinsettia - UMass

<https://extension.umass.edu/floriculture/factsheets/diseases-poinsettias>

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Figure 2. Collapsing stem associated with Erwinia. Check the cutting for a fishy smell to help confirm bacterial soft rot.



Figure 3. Within a few days, the cutting dies from an Erwinia infection.



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Figure 4. Fungal strands (mycelium) can be seen spreading from cell to cell with Rhizoctonia.



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Figure 5. Close up of fungal strands (mycelium) which help to identify Rhizoctonia. Note at the back, left portion of the photo where mycelium can be seen growing on the root cube and attaching to the black plastic.

in the season, but after you had invested considerably more time and money into them. Cutting your losses early is sage advise.

Management

Erwinia

During propagation, chemical controls have limited effect on Erwinia. Dr. Larry Barnes of Texas A&M states, *“Control- sanitation is the most important factor in minimizing bacterial soft rot problems. Strict attention to clean tools and aggressive removal of infected cuttings*

at the first indication of soft rot is mandatory. Chemicals are generally ineffective in controlling bacterial soft rot.”

(Source: <http://hortipm.tamu.edu/publications/Poinsettia.html>)

Rhizoctonia

Sanitation is also a key factor in preventing Rhizoctonia. Once the plants have signs of the disease during propagation, fungicides are not very effective. Later in production though, fungicide treatments can be used.

For control options, view the new e-GRO Disease Advisor at www.egro.mobi/

Summary

The key with both diseases is to start clean to stay clean. Disinfecting the propagation benches, proper substrate handling, washing hands between sticking cultivars, and discarding any cutting that are dropped onto the ground will aid in preventing propagation based disease issues.



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Figure 6. Once Erwinia or Rhizoctonia infect a propagation strip, it is best to discard it. Although signs may not be visible, often times all the cuttings have already been infected by the disease.