

Controlling ROOT ROTS Cost-Effectively

By Dr. Roger C. Styer
Styer's Horticultural Consulting, Inc.
Batavia, IL 60510

Root rots can affect a wide range of ornamental crops, and can encompass a number of disease organisms, including Pythium, Phytophthora, Fusarium, Rhizoctonia, and Thielaviopsis. Crop susceptibility to these diseases is increased due to weather conditions, moisture management, sanitation, fertility, temperature, media pH, growing media, and type of greenhouse, among other cultural and environmental factors.

Certain crops have a tendency to be attacked by one or more of the above fungal diseases. For example, Pythium can infect a wide range of crops, but growers need to monitor snapdragons, geraniums, pansies, petunia, poinsettias, Easter lilies, and vinca especially.

Thielaviopsis is not as aggressive as Pythium, but can cause problems with pansies, petunia, and vinca when these crops are grown under stressful conditions.

Rhizoctonia can show up easily on impatiens, poinsettias during propagation, celosia, and vinca. Knowing what disease is causing your root rot is the first key to control. Have a sample sent to the nearest plant disease diagnostic lab for confirmation.

Many growers routinely drench all of their crops with fungicides to prevent root rots. But they still get root rots showing up by not paying attention to some of the above factors. Thielaviopsis will attack plants when the media pH is 6.5 or higher; whereas Fusarium prefers low media pH. All of these diseases want moist conditions. Typically, wet growers have more problems with root rots than dry growers.

Reusing trays and pots without properly cleaning and disinfecting is asking for more disease problems with each crop you grow. Keeping your greenhouse clean, keeping algae, fungus gnats, and shoreflies under control, disinfecting growing surfaces between crops, and providing more optimum conditions for growing your crops will all help control root rots.

Having said all this, I still recommend to my clients that they use some type of preventive fungicide, including biocontrols, for susceptible crops. Most commonly used biocontrol products include RootShield Granules/PlantShield HC and Companion. Common fungicides used for root rots include Subdue MAXX, Truban, Terrazole, Aliette, Medallion, Cleary's 3336, Chipco 26019, and Banrot.

Now, the main problem with using fungicide drench-



Doug Brenner (left), JJJ Nursery, and JC Diem, Southern Ag

es is you need to repeat them every 3-4 weeks to maintain control. Companion also needs to be repeated every 2-3 weeks. Only RootShield Granules or PlantShield HC provides 3 months control with one application.

Growers need to evaluate their root rot control not just on the cost of the chemical itself, but on how long it will last. Labor to apply a drench is a big cost in itself. Too often, growers will look at just the cost per ounce or cost per 100 gallons of water. I think you should also look at the cost per month in growing the crop.

If you look at the costs this way, RootShield Granules and PlantShield HC would be the most economical. A number of my clients like to treat all of their plugs or rooted liners with RootShield Granules or PlantShield HC, and then reapply at half the recommended rate after potting them up. This gives them protection against Pythium, Rhizoctonia, Thielaviopsis, and Fusarium for the whole crop.

Another important consideration is resistance of Pythium to Subdue MAXX. If you are having problems controlling this disease with Subdue, you need to look at alternatives. This is where many growers are starting to use RootShield Granules or PlantShield HC, as there is no known resistance. So, realize that root rots can be controlled by how you grow your plants, and by economical use of the right chemicals.

Dr. Roger C. Styer can be reached at (630) 208-0542 or e-mail: carleton@voyager.net.



Martin Stockton
First Step Greenhouses



Jerry, Hank and Harlan Richardson
Dixie Green



Harry and Bill Wilfong
Wilfong Greenhouses (since 1957)

TESTIMONIALS:

"I decided to test the use of PlantShield HC as a spreng in liner production and on stock plants. The benefits of this were so apparent that I immediately made the application of PlantShield HC part of my production practice. I am having greater success on Mandevilla and Bougainvillea with more vigorous roots, better color and strength of the stems and leaves."

— Doug Brenner, JJJ Nursery, FL

"We grow over 80 million plugs and a million liners per year. We use PlantShield HC on all of our bedding plant plugs. PSHC helps eliminate a preventative fungicide program. Our PSHC-treated seedlings have better root development and more root mass. We inject PSHC through our water tunnel at the time of seeding. It decreases labor requirements for application and insures that all our trays get treated. PlantShield is so easy to apply. It's a 'no brainer!'"

— Martin Stockton, Production Manager, First Step Greenhouses, CA

"At Greenheart Farms we have 600,000 square feet under plastic and 15 acres outdoors. We've used RootShield/PlantShield HC on everything we've grown for 5 years, including almost 1 billion vegetable transplants, 3 million Greenheart Roses and Nor-East Miniature Roses, and 400,000 poinsettias per year. RootShield/PlantShield provides disease prevention, eliminating the need for any fungicide drenches on our vegetable transplants. We haven't seen any Pythium, Fusarium, Rhizoctonia, or Phytophthora in years."

— Michael Atkins, Greenheart Farms, CA

"Last year we treated our poinsettias with PlantShield HC; it gave us a great root system with a single application."

— Jerry, Hank & Harlin Richardson, Dixie Green, AL

"The use of RootShield directly into my potting soil mix works very well for protection of the roots on my plants. Since I started using RootShield my fungicide drench applications have dropped to half or even more for certain crops. It is a very cost-effective product to have in your soil mix."

— Joe Bell, Grower Direct Farms, CT

"We started using PlantShield HC about 6 months ago; we grow cut flowers, snapdragons. We have fewer losses and more uniform stands."

— Harry Wilfong, Wilfong Greenhouses, Newton, NC

"We have had RootShield Granules incorporated into our growing mix for over six years. I forgot how well it was working until we got in some miniature roses that were not treated with RootShield. They were infected so we had to drench; it had been so long since we had to drench that we had to read the fungicide label."

— John Nelson, Greenway Plants, AL