

QA **ASK THE EXPERTS**



Q: What is a good management program for root and crown rots?

A: Root and crown rots as a group include many pathogens, from bacterial to fungal. Some things to consider first before reaching for the fungicides are environmental conditions and sanitation.

Crown and root rots often are caused by fungi waiting opportunistically for a stressed or damaged plant. Crown damage can occur as a result of mechanical or insect injury. Use seed and cutting source materials that are clean and disease free. Root and crown rot pathogens can be introduced with some plant materials, and if plant materials look suspect, you should test. Look for root discoloration and/or unusual coloring of root tissue. Do not irrigate on a schedule, but only if plants are ready for more water. Over watering is another factor which leads to crown and root rot and should be the easiest to control. The pathogens are favored by conditions that maintain high moisture in growing mix or soil.

Crown and root rots in outdoor plantings can often be linked to poor soil condition or poor location. When you have a choice, use growing media with good drainage. And as always, sanitation is the key to controlling root rot pathogens. Do not store clean potting mix in areas where contamination with soil or plant debris may occur. Keep commercial potting mixes off the ground if possible. Keep large quantities of treated soil or mix in clean storage bins. Steamed and/or fumigated soil is very susceptible to rapid colonization by plant pathogens. Keep hoses hung off the ground.

Root and crown rots are sometimes just expected on certain crops; i.e damping off disease on young seedlings. The cause could be from *Rhizoctonia* or possibly *Pythium*. Many growers will use a preventative fungicide treatment. The big problem here is that the materials that control *Rhizoctonia* would not control the *Pythium*. So if you have not identified the pathogen a broad spectrum treatment would be used, something like OHP 6672 plus Terrazole. Other potential combination partners are Terraclor, 26019, Terraguard (for thielaviopsis or cylindrocladium diseases) or one of the newer fungicides Fenstop. Along with the appropriate cultural controls, Aliette may be used on a number of ornamental plant species to help prevent *Phytophthora* infections. Rotating these and ALL fungicides is important to maintain long term effectiveness and control.

Most if not all of these treatments are best applied as drenches, getting good coverage at the site of the disease. Foliar applied fungicides (e.g. Aliette) are available and will work, but may not be the best approach for the most common of root and crown rot diseases. Another approach to consider is using entomopathic fungi such as the product Root Shield to pre-

Q: We propagate some of our nursery plants in the ground. Recently, we found symphylans feeding in the roots. Is there anything that can be done to control them in the propagation beds?

A: Symphylans are not insects and are not centipedes, even though they are sometimes called garden centipedes. Symphylans are in an animal class all by themselves – Class Symphyla. According to the Pacific Northwest Insect Management Handbook, they are small, nearly white and about ¼-inch long when mature, and have 6 to 12 pairs of legs depending on age. The most common species is the garden symphylan

Symphylans live in the soil, doing best in irrigated, heavier soil areas. They do not make their own tunnels in the soil, but use those made by other animals, such as earthworms. Symphylans can be found 3 or more feet below the surface. They seem to occur in so-called “hotspots” which do not change much from year to year.

As you might expect, controlling symphylans is not easy. Chemicals sometimes suggested include pre-plant applications of Diazinon and Chlorpyrifos, although a search of product labels did not locate any formulation that listed symphylans. Soil fumigation is also suggested as a control method. The soil fumigant Telone does list symphylans on the label, but this product cannot be used in greenhouses and does not include ornamental nurseries on the label. Fumigation is not a sure thing either because symphylans can move below the treated soil zone.

Because symphylans occur in hotspots, moving the propagation areas periodically will help. Also, raising the propagation beds above the ground will eliminate the problem. Sometimes there just are no chemical – or maybe even biological – answers to a problem.



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