

# Controlling Rhizoctonia on Some Ornamentals

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*Rhizoctonia* spp. cause root, stem and foliar diseases of many of our most important container produced ornamentals. The fungal pathogen is soil-borne which means it lives in the soil or potting medium and causes both pre- and post-emergence damping-off of many crops (celosia, vinca, impatiens, Gomphrena and snapdragon). Rhizoctonia root rot can be common in some plants including: Aglaonema, azalea, begonia, ferns, holly, impatiens, juniper, philodendron and spathiphyllum. In addition, Rhizoctonia can cause stem rots on impatiens, poinsettia, and pothos and aerial blights (also called web-blight) occur on azalea, holly, juniper, and pittosporum. On the West Coast we see Rhizoctonia stem rot on many cut flower crops like aster, delphinium, larkspur and sunflower.

In the southern US, Rhizoctonia can attack leaves especially when plants are grown close together and kept moist, decimating entire stock beds or flats in a few days when conditions are hot and wet. In other areas of the country, the nurseryman creates ideal conditions for Rhizoctonia diseases by growing plants in covered structures which are heated and irrigated overhead. Severe disease development can occur in less than a week so plants should be scouted and monitored for symptoms at once a week. Brown, irregularly shaped spots form anywhere on foliage or stems. When humidities are high the web-like brown mycelium of the pathogen covers infected portions of the plant. This can be seen many times in aerial blight and sometimes when flats of seedling crops are attacked.

Rhizoctonia stem rot is typified by brown cankers forming at the soil line. The cankers are sunken and dry appearing and can cause the plant tops to collapse. Root rot may occur in some cases of stem rot, but not always. Root rot caused by Rhizoctonia appears much like root rots caused by other fungi with roots becoming brown, somewhat mushy and finally disintegrating. An accurate laboratory diagnosis is therefore crucial since fungicides that control Pythium do not control Rhizoctonia and visa versa. You must also keep in mind that mixed infections, cases where two pathogens are active, are also common. Only an accurate diagnosis will allow you to choose the best and most complete control strategies. Be sure to watch plants for above ground signs of root rot: yellow or pale green leaves, small leaves, wilting and stunting.

Soil-borne pathogens such as *Rhizoctonia* spp. can escape notice and therefore cause serious losses before they are identified. Prevention is therefore the key to controlling *Rhizoctonia* diseases. Use healthy plants, new or sterilized pots and potting media and avoid placing plants directly on the ground whenever possible. If you follow these steps the fungicides you apply will have the greatest chance to work.

Fungicides continue to be an important part of ornamental plant production. As mentioned earlier, *Rhizoctonia* spp. occur in the potting medium and can cause stem and leaf diseases, making the application site for a fungicide critical. Table 1 lists some of the

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fungicides labeled for use on ornamentals to control *Rhizoctonia* diseases. Since *Rhizoctonia* spp. can cause disease by infecting cuttings, bulbs (and other types of storage organs), leaves, stems and roots nearly all parts of the plant may have to be treated under some conditions.

Table 1. Results of some efficacy trials on *Rhizoctonia* diseases on ornamentals. These trials were conducted over the past 10 years throughout the US.

Fungicide	Impatiens damping-off and stem rot	Poinsettia stem rot and root rot	Vinca damping-off and stem rot
Banrot 40WP	Poor at times, usually good to excellent		Some to good
Chipco 26019 50WP	Good to excellent	Very good	Excellent
Chipco 26GT		Very good	Excellent
Companion			Some
Compass O		Poor	
Contrast 70WSP	Excellent	Excellent	Very good
Daconil Ultrex	Very good	Some	
Fungo Flo	Excellent	Some	Some to very good
Heritage	Excellent	Excellent	
Hurricane	Excellent		
Insignia	Excellent		Very good
Medallion 50WP	Excellent	Excellent	Good to excellent
Phyton 27	None		
RootShield	Poor	Very good	Poor
Spectro	Excellent		Excellent
Terraneb	Excellent		
Terraclor 75WP	Some to excellent	Good	Excellent
Terraguard 50W	Excellent		Excellent
3336	Some to excellent	Very good to excellent	Good to excellent