

## Rhizosphaera Needle Cast

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**What is Rhizosphaera needle cast?** *Rhizosphaera* needle cast is one of the most common fungal diseases of Colorado blue spruce. This disease can also affect other conifers including Engelmann, black, Serbian and Sitka spruce; Austrian, mugo and eastern white pine; Douglas fir; and western hemlock.

**What does Rhizosphaera needle cast look like?** The first noticeable sign of *Rhizosphaera* needle cast is a loss of the innermost needles on the lower branches of spruce trees. Often the youngest needles remain healthy. If your tree has this pattern of needle loss, use a 10X hand lens to observe the shed needles. If *Rhizosphaera* needle cast is the problem, you should be able to see rows of small black dots erupting through the surface of the needle. These black dots are fruiting bodies of the fungus that causes the disease, and are diagnostic.



**Browning of interior spruce needles caused by *Rhizosphaera* needle blight.**

**Where does Rhizosphaera needle cast come from?** *Rhizosphaera* needle cast is caused by the fungus *Rhizosphaera kalkhoffii*. Infected needles, including those that are still attached to branches and those that have fallen to the ground, produce spores that can be blown or splashed to healthy branches or trees.

**How do I save a tree or shrub with Rhizosphaera needle cast?** You can treat infected trees with fungicides containing copper (e.g., Bordeaux mixture) or chlorothalonil. These treatments will not cure existing infections, but can prevent additional infections. Apply treatments every three to four weeks during periods of wet weather. DO NOT use the same active ingredient for all treatments. Instead, alternate the use of copper and chlorothalonil to help minimize problems

with fungicide-resistant strains of *Rhizosphaera kalkhoffii*. For fungicide treatments to be effective, you must thoroughly cover all susceptible needles. This is often difficult in large trees. Be sure to read and follow all label instructions of the fungicide(s) that you select to ensure that you use the fungicide(s) in the safest and most effective manner possible.

**How do I avoid problems with Rhizosphaera needle cast in the future?** Perhaps the easiest way to avoid *Rhizosphaera* needle cast is to avoid planting Colorado blue spruce. If you do plant blue spruce, check existing spruce trees for disease. Remove and destroy any diseased branches. Also, allow adequate spacing between trees in new plantings. This promotes increased airflow and quicker drying of needles, which is less favorable for infection and disease development.

**For more information on Rhizosphaera needle cast:** See UW-Extension Bulletin A2640 (available at <http://learningstore.uwex.edu>) or contact your county Extension agent.