



Extension

UNIVERSITY OF WISCONSIN-MADISON

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Rhizosphaera Needle Cast

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What is Rhizosphaera needle cast? Rhizosphaera needle cast is the most common disease of Colorado blue spruce in Wisconsin, making Colorado blue spruce unsightly and unusable in many landscape settings. The disease also affects other conifers including black, Engelmann, Serbian, Sitka, and white (e.g., Black Hills) spruce; Austrian, mugo and eastern white pine; Douglas-fir, balsam fir and western hemlock.



Browning of interior spruce needles caused by Rhizosphaera needle blight.

What does Rhizosphaera needle cast look like?

The first noticeable symptom of Rhizosphaera needle cast is purpling or browning and loss of the innermost needles on lower branches of spruce trees. Often, the youngest needles at the tips of branches remain healthy. Rows of small, black spheres form along the length of infected needles and are visible with a 10X hand lens. These black spheres are fruiting bodies (i.e., reproductive structures) of the fungus that causes the disease and are diagnostic.

Where does Rhizosphaera needle cast come from?

Rhizosphaera needle cast is typically caused by the fungus *Rhizosphaera kalkhoffii*, although other species of *Rhizosphaera* can be involved depending on the host. 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 needles.

How do I save a tree or shrub with Rhizosphaera needle cast?

Consider treating affected trees with fungicides labeled for use on evergreens and containing copper or chlorothalonil. Treatments will not cure existing infections, but can

prevent additional infections. Apply treatments every three to four weeks starting as new needles emerge each spring. Continue applications through periods of wet weather. For fungicide treatments to be effective, thoroughly cover all needles. This may be difficult on large trees. Be sure to read and follow all label instructions of the fungicide that you select to ensure that you use the product in the safest and most effective manner possible.

How do I avoid problems with Rhizosphaera needle cast in the future? The easiest way to avoid Rhizosphaera needle cast is to avoid planting Colorado blue spruce. If you do plant this tree, consider using dwarf varieties, and allow adequate spacing between trees so that branches will not overlap when they are full size. Dwarf varieties and properly spaced larger spruce varieties will have better air penetration and needles will dry more quickly. Dry needles are less likely to be infected. Check existing spruce trees for the disease, and remove and destroy any diseased branches and needles by burning (where allowed by local ordinance), burying or hot composting.

For more information on Rhizosphaera needle cast: Contact the University of Wisconsin Plant Disease Diagnostics Clinic (PDDC) at (608) 262-2863 or pddc@wisc.edu.

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A complete inventory of UW Plant Disease Facts is available at the University of Wisconsin-Madison Plant Disease Diagnostics Clinic website: <https://pddc.wisc.edu>.

Submit additional lawn, landscape, and gardening questions at <https://hort.extension.wisc.edu/ask-a-gardening-question/>.