



Pest e-alerts



Entomology and Plant Pathology, Oklahoma State University
127 Noble Research Center, Stillwater, OK 74078
405.744.5527

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Turfgrass Disease in the Winter?

Damon L. Smith, Turfgrass and Horticulture Crops Extension Pathologist
Nathan R. Walker, Turfgrass IPM Specialist/Turfgrass Research Pathologist

It has been a fairly tough winter for turfgrass in Oklahoma. With the extended cold weather that we experienced in early January, water cooler-discussions have been consumed by predictions about the severity of cold damage to bermudagrass. Now that we are experiencing our second substantial snow cover event for the year, and the forecast for the next few days appears to be overcast and chock full of rain and cool temperatures, our attention should turn to other types of damage. While these conditions won't injure bermudagrass turf, they are conducive for *Microdochium* patch (a.k.a. pink snow mold), which can occur sporadically in Oklahoma on all cool-season grasses.

Microdochium patch is caused by the fungus *Microdochium nivale*. The traditional name of the disease, pink snow mold, is really a misnomer. While the disease can occur after extended periods of snow cover, this is not a requirement for disease. *Microdochium* patch can occur when conditions are overcast, cool, and wet in the absence of snow cover. Furthermore, the "diagnostic" pink tufts of active mycelium are rare. Often the symptoms can appear as sunken non-descript patches (Fig. 1). *Microdochium nivale* causes disease only on living cool-season grasses. It should not be confused with a fungal saprophyte (lives on dead plant material) that can occur on dead leaves of bermudagrass and make a bermudagrass stand appear to be pink in color. This fungus is called *Limnomyces roseipellis* and no action is required if identified on dead leaves of bermudagrass.

Microdochium nivale survives unfavorable periods as mycelium (fungal body) in grass plants. As conditions become favorable, infections can occur via spores that are produced on infested debris or as mycelial growth from infected plants. Wet periods and temperatures ranging from freezing to 60°F can result in rapid growth of the fungus. Fog, drizzling rain, repeated freezing and thawing, and frosts can all facilitate spread of the fungus from plant to plant. If conditions become warm and dry, the disease will become inactive.

When snow is not present, patches will manifest as small water-soaked spots (< 2 in. in diameter) and change from orange brown to dark reddish brown, then to gray or tan (Fig. 2). Microdochium patch can be severe when snow cover occurs on unfrozen ground. If symptoms develop under snow cover, patches will be bleached in color and may have a pink hue at the perimeter of the patch (Fig. 3). White fluffy fungal material (mycelium) with spores may also be present. The mycelium and spores can sometimes be artificially induced if a mist of water is applied to the surface of an extracted sample, bagged using a plastic bag, and incubated overnight at room temperature (Fig. 4). Narrow crescent moon-shaped spores must be identified to definitively verify the presence of *Microdochium nivale*.

Managing Microdochium patch in Oklahoma can be difficult due to infrequency of occurrence. In areas that are prone to Microdochium patch, several strategies can be used to reduce the severity. Improving surface drainage, reducing traffic, limiting thatch accumulation, and aerifying regularly can be used to manage the disease. Periodic removal of leaves and debris that cover susceptible areas is advised. Several fungicides have been identified that are effective for controlling Microdochium patch. However, fungicide should be used preventatively (prior to snow cover or conducive conditions for disease) or immediately after symptoms are correctly identified (when snow is absent). In areas that are prone to Microdochium patch, mapping can be used to identify where preventative spot treatments of fungicides should be used in the future.



Fig. 1. Symptoms of Microdochium patch on a creeping bentgrass putting green (Photo Credit: Jim Kerns, University of Wisconsin)



Fig. 2. Mature symptoms of *Microdochium* patch (Photo Credit: Jim Kerns, University of Wisconsin)



Fig. 3. *Microdochium* patch symptoms. Note the pink hue at the margin of the patches (Photo Credit: Jim Kerns, University of Wisconsin)



Fig. 4. Mycelium of the fungus *Microdochium nivale* erupting from shoots of creeping bentgrass plants after being misted with water and incubated in a plastic bag overnight at room temperature (60°F – 65°F).

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Dr. Richard Grantham
Director, Plant Disease and Insect Diagnostic Laboratory

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