



# Pest e-alerts



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## **Cool-season Turfgrass Disease Update**

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The number of turfgrass samples coming in to the OSU Plant Disease and Insect Diagnostic Laboratory (PDIDL) has increased rather dramatically in the last several weeks. Obviously, the spring and summer growing seasons are typical periods when diseases of various turfgrass species are of most concern. Currently, most of the samples arriving in the laboratory are cool-season turfgrass species, fescue and creeping bentgrass, primarily. Most of the submitted samples are suffering from summer-heat related stress and are in general decline. Cool-season grasses, especially fescue and creeping bentgrass grow best during the cooler seasons. When ambient air temperatures become hot (90 F+), growth of these grasses will dramatically slow or stop and can go into rapid decline. Root growth of cool-season grasses will cease when soil temperatures are above 80 F. Currently, the 4-inch, under-sod soil temperatures for much of the state are in the low-to-mid 80s. Thus, root growth on cool-season grasses is probably not occurring. Research has also shown that as air and soil temperatures rise above 90 F roots will start to die. The sustained weather conditions over the last several weeks have been extremely detrimental to cool-season grass health. Expect that cool-season grasses may be experiencing periods of no root growth, root decline, or death. For some areas the situation has been made worse due to poor root growth that occurred during the spring and was in part due to the over-cast conditions and excessive rains. Plants that entered summer without a sufficient root system are more likely to not sustain growth, turn yellow or brown and go into general decline (Figure 1). Symptoms of decline can resemble diseases caused by pathogens. Patch symptoms due to summer stress may look much like take-all patch or *Microdochium* patch. Turf can appear off color or golden brown and in areas where the plant stand is thin algae formation is common (Figure 2). When roots are examined no evidence of the pathogens that cause these patch diseases are typically present. While evidence of root inhabiting fungi will often be noted, many of these fungi are simply naturally occurring root-inhabiting organisms that are not pathogenic. Also beware that while it may appear to the naked eye that the grass plant has deep or healthy roots this may not be the case. The vascular portion of the root is resistant to decay and may appear to be healthy when in fact it is dead.

If it is suspected that a cool-season grass is experiencing summer decline, water and fertility management are going to be critical. Where appropriate, water very deeply and infrequently and try to avoid early evening irrigation. Nitrogen fertilizer applications should be minimal and “spoon feeding” may be necessary to sustain the turf until temperatures are more favorable for cool-season grasses. Avoid damaging activities such as dethatching, aerifying, and any other management technique that can cause injury to the turfgrass until it is again actively growing.



Fig 1. Patch symptom of summer-heat related stress and decline on a creeping bentgrass putting green. Note the strategically placed holes in the turf to encourage water infiltration.



Fig 2. Summer-heat related stress and decline on a creeping bentgrass putting green. Note the black algal “film” in areas where the plants are in low density.



Weather conditions in general have been too hot and dry for most turf pathogens. Remember, fungal pathogens require lots of moisture or very high humidity and moderate temperatures to infect and cause disease. With that said folks should be on the lookout for brown patch and Pythium foliar blight on cool-season grasses should the weather turn humid and wet. Lately, prevailing conditions have been too dry in most of the state for widespread epidemics of these diseases. However, if supplemental irrigation is available or you are in an area that has been fortunate enough to receive rain in the last few days, these diseases may be of concern.

The pathogen (*Rhizoctonia solani*) that causes brown patch prefers relatively warm temperatures, requires excessive moisture, and is aggravated by high nitrogen fertility. The disease is likely to first appear in areas that are wet or are abnormally humid. On fescue turfgrass, symptoms will manifest as bronze to brown patches that will vary in size (Figure 3). Plants in the patch may die or appear water-soaked. Leaf tissue may have lesions that are brown in color and have a distinct bronze margin. On closely mown creeping bentgrass, brown patch will appear as a brown patch with a grayish-purple outer margin (Figure 4). A “smoke ring”, or white halo, may or may not be present. To manage brown patch, irrigation should be applied as infrequently as possible. Improving drainage in areas where water pools or poor drainage exists will also be helpful in managing the disease. Do not apply excessive nitrogen fertilizer. If a fungicide is required to manage the disease, the fungicides should be applied preventatively or prior to disease development. Strobilurin fungicides typically provide the best control in University trials, however, other fungicides are also effective. Some common names of commercial fungicide available for brown patch control on bentgrass and/or fescue include Armada or Tartan (trifloxystrobin + triadimefon), Heritage (azoxystrobin), Insignia (pyraclostrobin), Medallion (fludioxinil), and Prostar (flutolanil) just to name a few. Fungicides available to the homeowner include Fertilome systemic fungicide (propiconazole), Scotts Lawn Fungus Control (thiophanate methyl), and Spectracide Immunox (myclobutanil). Others are also available. Be sure to consult the label carefully for site use restrictions and use recommendations.



Fig 3. Patch symptoms of brown patch on a mixed sward of tall fescue and Kentucky bluegrass.



Fig 4. Patch symptoms of brown patch on a creeping bentgrass putting green.

Currently weather conditions are too hot and dry for Pythium foliar blight, caused by various species of Pythium. However, if sufficient moisture becomes available, average temperatures recede back into the high 80s – low 90s, and cloudy conditions prevail, then Pythium foliar blight could be of concern. Foliar blight will include water-soaked leaf lesions and plants will begin to die and form large patches of sunken brown areas. Leaf lesions will not have a surrounding border unlike brown patch leaf symptoms. If humid conditions persist, thick tufts of white, cottony mycelium (body of the fungus) will erupt from leaf tissue. Management recommendations for Pythium foliar blight are similar to those for brown patch. Improving drainage, reducing foliar wetness, and encouraging air movement will reduce severity of Pythium foliar blight. Fungicides should be used preventatively and sparingly for this disease, as the pathogen can readily develop resistance to repeated use of the same fungicide. Commercial fungicide for Pythium foliar blight control include Heritage (azoxystrobin), Segway (cyazofamid), Subdue (mefonoxam), Banol (propamocarb), and others. Again, be sure to consult the label for all restrictions and use recommendations.

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