

Turfgrass

New Turfgrass Disease Culprits

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This article comes to us from David Maubach, Senior Sales Specialist, BASF Professional Turf & Ornamentals.

The presence of several new turfgrass diseases has increased on U.S. golf courses in recent years. Three new diseases in particular – Pythium root dysfunction, brown ring patch and rapid blight – are a challenge for course superintendents. Fortunately, researchers have made headway regarding how to detect and treat these destructive new diseases.

Tackling New Diseases

New turfgrass diseases can evolve for a number of reasons and several factors contribute to the prevalence of disease such as geography, moisture and temperature.

Stress caused by heat, drought and excess moisture can weaken turf and make it more prone to disease. Put simply, healthy turf is less susceptible to disease. The challenge with golf courses, particularly on the greens, is that turfgrass is kept short by plant growth regulators and/or frequent mowing, which causes stress.

Players expect superintendents to provide the best of both worlds – short grass and healthy turf. It is a difficult balance, especially when new diseases emerge and superintendents do not know how to treat it.

University and industry researchers are addressing these three emerging problem diseases. To avoid being caught off-guard, superintendents should take time to learn more about these diseases. Doing so will help identify and treat the diseases, and in some cases, avoid them altogether.

Pythium Root Dysfunction

Discovered in North Carolina in 1994, Pythium root dysfunction attacks putting greens and is limited to newly constructed greens less than eight years old. It is most commonly found in the Southeast, but also occurs in Midwestern areas with harsh summers. Bentgrass is most susceptible to the disease, which occurs on turf stressed from one or more of the following factors: high heat, repeated close mowing, low fertility schedules and drought.

Pythium root dysfunction causes the roots and crown of turfgrass to turn brown or black. The symptoms are most visible during the summer, but the disease actually spreads during spring and fall, when it is cool and wet.

Because symptoms are less prevalent on plants with a strong root system, there are several cultural practices superintendents can undertake to minimize damage caused by Pythium root dysfunction. Root enhancement techniques – specifically aerification, nutrition supplements, verticutting and reduced irrigation – are helpful in counteracting symptoms of the disease.

Irrigation management is also extremely important. Clay and compacted soils are more likely to harbor Pythium root dysfunction because of reduced drainage.

It is less difficult and less expensive to prevent Pythium root dysfunction than it is to try to cure it. Fungicides such as pyraclostrobin and triticonazole are two of the most effective at preventing the disease.

Dr. Lane Tredway, turfgrass pathologist at North Carolina State University, is one of the foremost experts on Pythium root dysfunction. To learn more about his research and information on NC State's Center for Turfgrass Environmental Research & Education, visit www.turffiles.ncsu.edu. 

Brown Ring Patch

Formerly known as waitea patch, brown ring patch has been reported sporadically throughout the Midwest and is a mounting problem in Southern California. Occurring primarily on greens with high annual bluegrass (*Poa annua*) populations, the disease is prevalent in warm and moist conditions.

Initial symptoms of brown ring patch are thin, yellow, concentric rings several inches in diameter that turn brown under hot or wet conditions. Once established, brown ring patch can quickly damage turfgrass. Temperature plays a significant role in regards to whether or not brown ring patch occurs. The disease does not spread in hot or cold conditions, but rather during times of mild (mid-60s to low-80s F) temperature.

Cultural control options of aerification and higher mowing heights are sometimes used to combat brown ring patch. Alternating among several fungicides – pyraclostrobin, propiconazole and triticonazole – has been an effective treatment.

Dr. Frank Wong, assistant plant pathologist at the University of California-Riverside, is considered one of the top brown ring patch researchers. For more

information, visit UC Riverside's Department of Plant Pathology and Microbiology at www.plantpathology.ucr.edu. ↗

Rapid Blight

Rapid blight occurs in the fall and winter, affecting several annual winter grasses used to overseed Bermudagrass. Affected species include ryegrass, annual bluegrass and poa trivialis. It is primarily seen in the Southwest, including Nevada, Arizona and Southern California, as well as on coastal areas in the Southeast and Northeast. Perennial grasses are not affected by rapid blight.

The disease is associated with a marine organism and cases of rapid blight rise significantly in areas where superintendents use reclaimed water or water with high salinity for irrigation. The disease can occur on any area that has been overseeded, but is usually treated only on putting greens.

Dr. Mary Olsen, plant pathology specialist for the University of Arizona-Tucson, has confirmed that rapid blight is caused by an obscure microorganism that prior to its discovery in turf was known to infect in marine plants such as seagrass, diatoms and algae.

Rapid blight shows itself as water-soaked, slightly sunken and darker looking turf. It turns yellow and dies in patches.

The primary cultural control option is to use better quality irrigation water, avoiding reclaimed water, if possible. Pyraclostrobin provides the most effective preventative control, with mancozeb as a less effective alternative.

Olsen is a leading rapid blight researcher. The University of Arizona's Division of Plant Pathology and Microbiology is available on the Web at

Prevention, Education Key

To avoid being caught off guard by new diseases, it is important to stay educated on new diseases, be consistent with preventative tactics and devote time to detection efforts.

Part of being proactive is keeping up with the latest research and information about turfgrass disease. Superintendents who collect and absorb background information are better prepared when they encounter a problem – they know what they are dealing with and who can help them.

Some superintendents are quick to write off an undiagnosed problem as being untreatable by a particular fungicide they have already applied, so they simply retreat with a different product. Instead, they should take a turf sample and send it in to a diagnostics lab.

Fungicide manufacturer representatives, university extension personnel and other course superintendents are also good sources of information. It is wise to seek the help of others if they encounter an abnormality they do not recognize.

It may seem like common sense, but it is important for superintendents to walk their courses every day to keep an eye out for abnormalities. New diseases such as pythium root dysfunction, brown ring patch and rapid blight can cause problems quickly if undetected.

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