Save Money This Year With the TDL

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It's no secret that money in the golf course industry is tight these days. Even before the nationwide economic meltdown, revenues at most golf facilities had leveled off or declined. A small but growing number of courses, including some right here in Wisconsin, have been put up for sale or turned into housing developments (which doesn't seem to make sense now either). Flat or declining golf course revenues seem to hit maintenance budgets disproportionately hard, and at a time like this allotting scarce dollars for non-essential items like outside diagnostics such as those provided by the Turfgrass Diagnostic Lab (TDL) can seem foolish. But when used properly, services provided by the TDL can save golf course superintendents thousands of dollars over the course of a year.

For those unfamiliar with the TDL, it is a non-profit lab affiliated with the University of Wisconsin that solely diagnoses turfgrass problems for both professional and non-professional turfgrass managers alike. No state or university support is designated for the lab, and the funds rose from sample submissions, contract memberships, and fungicide testing provides all the funding required to run the lab. For each sample submission, a fee of $100 is charged to help support lab operations. On the surface, this seems like a significant amount of money. Money that can go towards fertilizer or fungicides or PGR's. But when the costs of a pesticide application to a misdiagnosed ailment are taken into account, the cost of a sample submission in comparison looks similar to that of Halloween candy on November 1st. Rather than illustrate this to you through vague comments about how hard it is to diagnose something without the aid of a microscope, we have included three actual examples from the past couple of years that include either the amount of money saved by not spraying or the amount of money lost due to a misapplication.

Example 1: To be anthracnose, or to not be anthracnose?

Nationwide, two of the most difficult diseases to diagnose without a microscope are Pythium blight and brown patch. Most people assume that when they see white, fluffy mycelium during hot, humid conditions that it's Pythium, but oftentimes its actually brown patch. In Wisconsin though, a more common misdiagnosis is the assumption that any thinning turfgrass on putting greens and tees is anthracnose (Figure 1). Sometimes anthracnose is the primary cause of turfgrass decline, but most of the suspected anthracnose infections submitted to the lab are simply cultural or abiotic stresses. Cultural or abiotic stresses may include traffic, low mowing height, and low nitrogen fertility; all conditions where fungicide applications would provide little to no benefit.

Figure 1. Both of these samples were submitted to the TDL within the past two years. Can you tell which one is anthracnose and which one is abiotic? The one on the left is abiotic, while the one on the right is anthracnose.

A common and effective fungicide combination in Wisconsin for controlling anthracnose in recent years has been a tank mix of Banner MAXX (propiconazole) at 1 oz/M and Daconil WeatherStik (chlorothalonil) at 3.2 oz/M. Using current early order prices provided by a Madison-area superintendent, applying Daconil WeatherStik and Banner MAXX at the rates listed above costs $80.30 per acre and $98.35 per acre, respectively. If a superintendent assumes anthracnose is present on greens and decides to spray the approximately five acres of greens on their course, $893.25 would have been spent. Since tees are often sprayed on a similar program as greens, spraying an additional five acres of tees would bring the total cost of the "anthracnose control" to $1786.50. If a sample were to be submitted to the TDL for diagnosis, and no anthracnose found, that spray would essentially be a waste of over $1,500. Contrast that with submitting a sample to the lab before fungicide application, and the diagnosis coming back as abiotic stress with a recommendation to apply one half pound of nitrogen in the form of fast release UMAXX fertilizer to stimulate turf recovery. Using early-order prices, the cost of applying UMAXX at 0.5 lbs N/M would cost approximately $25 per acre, or about $250 to spray the greens and tees at this course. Throw in the $100 TDL sample submission fee, and the total cost of $350 is about $1,500 cheaper than the fungicide application...not to mention more effective.

Example 2: When the kitchen sink doesn't work.

Pythium root dysfunction has become an important problem of newly established creeping bentgrass putting greens throughout the United States. However prior to the work conducted by Dr. Kerns and Dr. Lane Tredway at North Carolina State University (Kerns and Tredway, 2008), this disease was frequently diagnosed as take-all patch. Initially Pythium root dysfunction was even diagnosed as take-all patch by Dr. Tredway! However, with the knowledge available at the time take-all patch made the most sense. To combat the problem it was recommended that fungicides effective against take-all patch be applied. These applications were not effective. Then an extremely hot, dry summer pushed the affected areas past the point of no return. During these extremely stressful times, three or four golf courses reported spending $15,000 - $20,000 **per month** for several months on end to combat the turf loss. The symptoms reappeared during the fall and were at that time accurately diagnosed as Pythium root dysfunction. Though initially this example may seem to suggest that diagnostics failed and tens of thousands of dollars were wasted, since the superintendents continued to inform us when symptoms developed we were able to finally come to an accurate diagnosis. As a result, these three golf courses went from spending $15,000 to $20,000 a month down to $1,000 to $2,000 a month, a savings of up to $19,000 a month! Admittedly, this was an extreme case, but it provides an excellent example about the savings that result from accurate problem diagnosis.

Example 3: Not everyone is your friend.

This past summer, a nationally renowned home builder with developments in northern Illinois contacted the TDL with some very expensive problems. Each of their three most recent developments in the Chicago area consisted of approximately 150 to 200 homes, and all of them were sodded at nearly the exact same time three or four years ago. This past summer, widespread problems started occurring with the sodded lawns. Symptoms included small, roughly circular patches of tan grass that would appear in June and spread as summer progressed (Figure 2). When they contacted the landscaper who had installed the sod their recommendation was to scrape off all the sod and the top foot of soil, then backfill with new soil and re-sod. The cost for each lot was approximately $12,000. When considering that nearly a quarter of the homes in these three developments were being affected to some degree by these symptoms, renovation of all the affected lots by this particular company's method would approach an unbelievable $1.8 million. Aside from this ridiculous cost estimate, the builder noticed that as new home developments were slowing with the economy (and hence new accounts for this landscape company were slowing) that the landscaper was increasingly diagnosing insect and disease problems that required costly pesticide applications. Finally

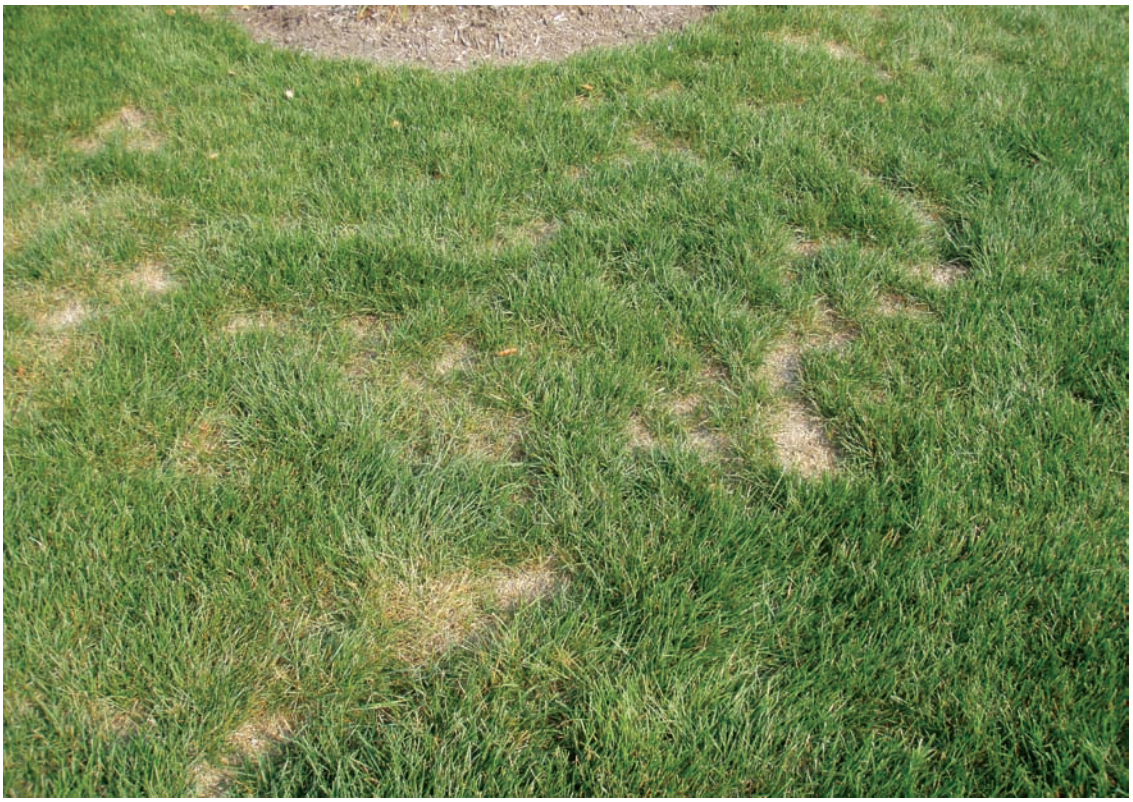

Figure 2: These roughly circular patterns of turf death, later diagnosed by the TDL as necrotic ring spot, were widely observed at all three home developments in the Chicago area.

fed up with the company and unsure of how to proceed, they called us.

We made a site visit down to Illinois in August and immediately made the same diagnosis that many of you might already have made. Necrotic ring spot (*Ophiosphaerella korrae*), a common root-rotting disease of recently sodded Kentucky bluegrass, was causing the great majority of the damage to the turf. We informed them that this is a common event on sod, that fungicide applications are rarely the most effective form of control, and that proper cultural practices along with proper communication with the homeowners is the best method to combat the disease. We also noted that removing the top foot of soil and backfilling would do nothing to prevent necrotic ring spot from reforming on the next batch of installed sod. Contacting the TDL rather than listening to the landscape company in northern Illinois, saved them tens if not hundreds of thousands of dollars.

While this is primarily an example for homeowners or landscapers, it provides an example to golf course superintendents as well that while the great majority of people you do business with are intelligent and have your best intention in mind, you might come across one in the future that has only dollar signs in his or her eyes. As a lab created and supported primarily by turfgrass managers, the TDL has only your interests in mind all the time.

These are just three specific examples of how the TDL can save you money in difficult economic times. Contract members with the lab get even more in the way of money-saving benefits, from the latest turfgrass research out of the University of Wisconsin to biweekly email updates throughout the growing season on what we're seeing and what to watch for. For more information on the Turfgrass Diagnostic Lab, or to download a contract membership form, visit our newly redesigned website at www.plantpath.wisc.edu/tdl.

New Website! As I just mentioned above, the Turfgrass Diagnostic Lab has a new website for the first time in many years. While the design is new and will likely remain in place for several years, it is our hope that this site continues to evolve to meet the needs of its users. Likely improvements in the near future include updated disease keys and the ability to pay for samples and contracts right on the website. If you have ideas on how to improve the site for both professional and amateur turfgrass managers, please feel free to contact Paul Koch at 608-845-2535 or plk@plantpath.wisc.edu.

References:

Kerns, J. P., Tredway, L. P. 2008. Pathogenicity of *Pythium* species associated with
Pythium root dysfunction of creeping bentgrass and their impact on root growth and survival. Plant Disease. 92(6). 862-869.