



LOST GRASS?

What to do about it.

BY STANLEY J. ZONTEK

A well-turfed golf course in good condition. Not every golf course has a good stand of grass every year and under every weather condition. Eventually, turf will be lost somewhere. The challenge is to effectively manage that turf loss curatively as well as preventatively.

Every golf course superintendent will lose grass at some point in his or her career. For that matter, no golf course superintendent is perfect; no budget is so complete as to allow everything to be in stock and available when a problem arises; no golf course has perfect soil; there is no perfect irrigation system or pure water for golf course irrigation; no perfect surface and subsurface drainage; and few have beneficial growing environments for turf, such as full sunlight and complete air circulation for every green, tee, and fairway. Not every golf course has the correct grass growing in the right places. Golf course superintendents are pretty good at what they do in this industry, but turf loss still occurs, sometimes in spite of the best efforts.

A certain amount of turfgrass management relies on luck, some good and some bad. For example, did your course receive that torrential downpour that dumped two inches of water in 30 minutes on the course, or did you miss that storm and don't have to worry about washed-out sand bunkers, wet wilt, scald and *Pythium*? There is an element of luck in everything associated with growing grass outdoors. Sometimes you are lucky and sometimes you are not. The skill of the superintendent or the strength of a budget (or even the best grasses) cannot overcome bad luck with weather.

Golfer expectations! They are high, and, on average, golf courses are being maintained *daily* to what championship/tournament golf courses were "peaked" to achieve even 20 years

ago. With such high standards, it is no wonder a golf course is so expensive to maintain. In reality, these high expectations only magnify turf loss when it occurs. It is amazing how even a few square feet of dead grass on a golf course can raise questions about the golf course superintendent's skills. The golf course should be looked at on the whole, and having 99.5% of good grass should be acceptable. Consider these comparisons: The best pro basketball players who shoot 50% from the field would have nine dead greens and several dozen acres of dead fairway grass each year. A bowler averaging 200 out of 300 pins would lose six greens each year. Do lawyers win every case? Do doctors heal every patient? Do links courses have perfect grass? Indeed, a few

areas of brown turf should be a sign of good turf management, not bad management. With the idea that golf course superintendents must never fail, it makes for a tough job, no matter where you maintain golf turf.

Ironically, those golf courses most affected by weather extremes are championship courses with high profiles and budgets, because they push the envelope in terms of playing conditions, when other golf courses are backing off. Sometimes it works, but when it doesn't, grass is lost.

The question should be asked, "What happens when grass is lost on your golf course, and in some cases, a lot of grass?"

The last two summers in the Mid-Atlantic Region have been difficult, at best. We broke the record for the hottest July in Philadelphia, Baltimore, and Washington, D.C., in the summer of 2011. The middle of the United States was sweltering with record-breaking heat accompanied by either too much rain or extreme drought. As a result, many golf courses have



Turf loss can be relatively minor and easy to diagnose. New greens always seem to have problems with maintaining collars due to immature turf and the wear and tear the edges of greens receive. It is important to communicate the reasons why this occurred and how the problem will be managed in the future.



Unusual patterns of turfgrass wilt are difficult to diagnose visually. Using a plant disease diagnostic lab is the only real way to diagnose a problem, especially if it is related to something in the soil; in this case, soil-borne Pythium. Developing curative and preventative programs are the next steps. Working with a consultant like your regional USGA agronomist can help confirm the soundness of that program.

suffered, some more than others. Under these circumstances, it is a challenge just to keep grass alive, let alone be worried about green speed.

Following are three factors that can contribute to turf loss: biotic (living) factors, abiotic (non-living) factors, and combinations of the two.

1. *Biotic* — Things that are living that kill grass, i.e., insects and diseases. Basically, something that lives by eating, sucking juices, or generally destroying grass, is a biotic factor.

2. *Abiotic* — Non-living factors. It is more difficult to diagnose abiotic, physical, non-living factors. These include poor-quality water (sodium, bicarbonates, high or low pH values); grass cut too low, too often; chemical overlaps or unintentional high rate issues; interactions between plant growth regulators, fungicides, and biostimulants, accompanied by the stresses of heat, drought, and wet wilt.

3. *Combination of factors* — Turf loss usually involves a combination of factors. For example, predominately *Poa annua* greens, especially those that are under-fertilized and cut too



Turf loss can be spectacular when it occurs — in this case, a burst hydraulic hose from a triplex putting green mower. Some types of turf loss simply cannot be predicted. A good equipment maintenance program helps, but every golf course superintendent knows that, eventually, somewhere on the golf course a hydraulic leak will happen.



Visual signs of heat and wilt stress are “footprinting.” Soil moisture sensors are great tools, but you still need to look at the grass. When turf reaches this point, the next stage could be permanent wilt and death to the plant. Managing soil moisture and mechanical traffic become vital.

low when it's hot, are predisposed to outbreaks of anthracnose/summer patch/bacteria and general turf loss issues. Bentgrass, when cut under hot and dry wilt stress, also can develop anthracnose. Factors we cannot control, as in the case of too much rainfall, are out of our charge. This occurs when a thunderstorm or down-pour saturates the soil, followed by the sun coming out and causing air temperatures to rise into the 90s and soil temperatures to rise rapidly and cause grass to wilt and die from any combination of scald and/or wet wilt. If the grass and soil remain saturated, water molds like *Pythium* and brown patch can develop overnight in spite of the grass type, spray program, soil conditions or the hard work of the staff. The list of turf loss scenarios is endless.

WHEN GRASS IS LOST, WHAT SHOULD YOU DO?

While turf loss may be puzzling, it is up to the golf course superintendent to put the pieces together and figure it out. Here are some helpful tips to consider:

If you suspect your problems are biotic (caused by something living):

- *Use diagnostic laboratories — soil, water and disease diagnostic labs.* Ask for a complete analysis; diseases, nematodes, or anything living that could damage the grass. These tests help determine if your turf loss is living or not. This information will help narrow your focus on what the problem is or was.

- *Send out water samples.* This is especially important in a drought when groundwater is drawn down. Unfortunately, you cannot see water problems until the grass begins to turn yellow. When this happens, a water test is needed to identify a problem.

- *Send out soil tests.* Are there salt and bicarbonate accumulations in the soil? What is the pH? Are there severe nutrient deficiencies or imbalances? These are problems you usually cannot see and will require testing to identify. Always remember that the grass plant uses only pure water that evaporates. This can leave a salt residue in the thatch, especially in a drought year when natural rainfall will

not be enough to leach these salts out of the soil. This can happen in regions of the country where water quality is good and salt problems are normally rare.

● *Is there a pattern to the turf loss?*

Look at your turf loss areas to determine if there is a pattern. Could anything have been overlapped or overdosed? Remember, grass does not die naturally in lines. Are the same damaged greens being cut with the same mower? A few thousandths of an inch difference in mowing height can make a huge difference at today's low mowing heights.

● *Look at your program. Are*

you cutting the grass too low for the conditions? Are you putting too much "stuff" in a spray tank? Could you be having a PGR/DMI fungicide interaction? Are you fertilizing too little? Healthy grass has fewer problems than weak, under-fertilized turf. Are you fertilizing too much? When in doubt, spray more often, but reduce what is in the tank. Raise mowing heights, mow less, roll greens to replace mowing,



A simple soil thermometer is one of the best tools to understand heat stress.

The roots of cool-season grasses become non-functional when soil temperatures rise above 90 degrees F. Extended periods of high soil temperatures should also trigger communications effort to explain why and how the management of the course will change as long as the weather persists.

use solid rollers and do not cut the cleanup pass every day. These are common-sense items we all know, but are worth revisiting nonetheless.

● *Get help.* Sometimes you need outside advice — a second opinion. It is good to have other people agree on the factors that cause a problem and, equally, what to do about encouraging recovery and preventing it from happening again. There is a support system out there to use.

● *Use the USGA agronomists.* We see a lot in our travels throughout the country. USGA reports add credibility as you communicate with the golfers and course officials on what the problem is and what to do about it in the short and long term.

● *Use your state university.* They are there to help, and their reports can be useful as they take a deeper scientific approach to your problems.

● *Use other golf course superintendents in your area.* This is especially helpful in comparing notes on common problems, helping to sort out spray/chemical interaction problems, and try-



Every golf course superintendent knows how important it is to manage water when turf is under heat and drought stress. Light syringing to mist, cool, and rehydrate the grass plant are key features of keeping turf alive on a daily basis through a hot summer. It is an important job that must be done correctly.

Turfgrass winterkill is another problem over which the superintendent has little control. In some cases, resodding may be the best option to restore playing conditions. Here at the Country Club of Virginia they are replacing the dead bermudagrass with a more shade-tolerant variety. It is all part of their game plan to prevent a similar problem from recurring in the future.



ing to understand why one golf course lost more grass than another. Even though every golf course is different, golfers always compare local courses. It is beneficial to have a working knowledge of your neighboring courses and their problems.

- *Use company technical representatives.* They can help with better understanding of how their products work and what their products' limitations are.

- *Communicate, communicate, communicate.* While it is easy to assign blame, it is the facts and how those facts are communicated that are important. Keep the explanation simple and stay away from technical terms to best convey why turf loss occurred.

For example, "We haven't had rain for a month, and the pond was getting low, so I reduced irrigation to the fairways to save water for the greens. This is why I've asked everyone to keep carts on the paths, since cart traffic on wilting turf can hurt the grass." This explanation is simple, understandable, and thorough. In addition, it may be good to add, "When we get some rain, carts may go back on the fairways."

It is not your golf course, but rather everyone's golf course. It takes a team

to manage the golf courses I've seen. At times of adversity, bring everyone together.

- Tell the pro and the golf shop staff what the problem is, how they and the golfers can help, and when it will end. "The greens may be a little slow today. Due to the hot weather we rolled only the greens; however, they should putt smooth and true. When the weather cools, we will bring back our old green speeds."

- Let the general manager know the problem, what you are doing to fix it, how you will manage your way through it, and determine the impact it will have on the budget. "It has been hot and wet — perfect conditions for fungi to grow. I've had to compress my spray interval and use additional and higher-priced products. We cannot afford to let the grass die from a problem we can control."

- Communicate information to your bosses and to the golfers. Almost every golf course has a website. Post pictures when problems occur. Golfers have short memories. "Remember that thunderstorm two days ago? Well, it saturated our golf course and it will take our crew two more days to restore

the bunkers and pick up debris. The rough is a little long, but it is being cut as this course update is being posted." You may be surprised how effective this communication can be. Often golfers are interested in the problems out on their golf course. By knowing the problems and the remedies, you have done everything a superintendent can do to manage the golf course through a period of turf loss.

Everyone who has tried to grow grass has lost some. Grass dies from factors that are living (biotic) or non-living (abiotic) and frequently through a combination of the two. If you are unsure of what is happening, seek help. Develop a plan to restore the golf course and an equally important plan to keep it from happening again.

It is easy to be a golf course superintendent when conditions are good, but your fortitude will be tested when conditions are bad. Hopefully, some of the points contained in this article will help you deal with turf loss when it happens to you.

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