



Summer 2010: Bad To Worse For Creeping Bentgrass

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Special note to golfers: Sometimes conditions can become so oppressive on a given site that it overwhelms creeping bentgrass and causes rapid decline, despite the heroic efforts of the superintendent and staff. This information is designed to focus on what can be done amidst this difficult summer.

Judging from the number of calls to our office, this has been the most difficult summer for bentgrass putting greens in the past decade. Summer heat was intense throughout June, with the average temperatures in most cities six to seven degrees greater than normal. July started gently, but upper 90's or low



Fans are a proven method to reduce stress on creeping bentgrass and increase the chances for summer survival.

100's soon followed, accompanied by sporadic and locally frequent, heavy afternoon thunderstorms. Some cities are closing in on a record for the most days above 90 degrees, and reports of declining bentgrass putting greens and collars are widespread. What will August weather bring?

Below is information with recommendations for the summer 2010. Links to applicable turf research are included.

Proper Use of Fans

Fans have become a staple on golf courses that have bentgrass putting greens. A decade ago, many courses with bentgrass putting greens had a handful of fans on the course, but today it is not uncommon to find fans on all eighteen

greens. Why? Fans have proven in research trials and in the field to be a valuable bentgrass life support tool.

Fan use is a question that tends to come up over time. Some common questions we receive are:

What time of year should we begin using the fans?

Research by Dr. Fred Yelverton, North Carolina State University, shows that bentgrass root systems can begin to decline when soil temperatures increase above 75 degrees for a few hours each day. This appears to be a prudent time to begin fan use. Our experience has been that fans will be run on a limited basis beginning in mid- to late-May, on average, with daily use beginning sometime in June.

How long should the fans run – during the day or for 24 hours?

Data from Auburn University suggests that running fans for 24 hours is more helpful to the bentgrass than running them during the daytime only. Of course, the turf manager must weigh the added benefit versus the extra expense to run the fans for 24 hours. Practically speaking, we have found that many superintendents run their fans during the day in the early part of the summer, and switch to 24 hour use when conditions become extreme.

Summer 2010 Recommendation:

Fans should be running 24 hours a day right now. If portable fans are available, use them and rotate them throughout the property as needs dictate.

For more information, visit these links.

[Timing of Irrigation for Cooling Bentgrass Greens With and Without Fans](#)

Venting the Putting Greens

Venting is a term that applies to the practice of creating small, non-disruptive holes in a putting green for the purpose of improving gas exchange, increasing water infiltration, and stimulating new root initiation. The term *venting* is used

instead of aeration because of the negative connotations golfers associate with the term aeration. Venting is a golfer-friendly practice.

Dr. Bob Carrow, of the University of Georgia, found that the ideal venting frequency in his research plots was every 21 days throughout the summer months. For more information, visit these links.

[Organic Matter Dynamics in the Surface Zone of a USGA Green: Practices to Alleviate Problems](#)

Summer 2010 Recommendation:

Keep the putting greens vented every two to three weeks until fall core aeration.

Raise the Mowing Height

In an age of rising expectations for putting green performance, the recommendation to raise the mowing height on bentgrass putting greens to promote better summer survival is not a popular one for golfers. Of course, failed putting greens in late August are not popular to golfers, either. However, science is on your side on this one.

The benefit of raising the mowing height in the summer can be explained by looking at the relationship between energy production (photosynthesis) and energy consumption (respiration) in the summer. As temperatures increase, the rate of photosynthesis in cool-season grasses (bentgrass) decreases, but the rate of respiration increases. Explained another way, energy production is slowing while energy consumption is increasing. This is not sustainable over the long term because, eventually, the plant is going to run out of fuel. Raising the mowing height increases the amount of leaf surface area, which increases the amount of potential photosynthesis. In essence, the higher mowing height is creating a bigger tank of fuel for the plant, and, hopefully, the fuel will not run out until cooler temperatures return in the fall. This concept is explained in much more detail in the article found at:

[Burning the Candle At Both Ends](#)

Summer 2010 Recommendation:

Raise the mowing height and install solid rollers if this has not been done already.

Rolling Instead of Mowing

Mowing is a stressful practice to bentgrass putting greens in the summer months. Researchers at the University of Arkansas found that, by mowing three days per week and rolling three times per week, green speeds would remain consistent throughout the week. In the field, we have observed this practice used in the summer months, and superintendents report favorable results with respect to turf quality. Therefore, if stress is high, reducing mowing frequency and substituting rolling is an option to consider for decreasing stress.

[Mowing Height, Mowing Frequency, and Rolling Frequency Affect Putting Green Speed](#)

Summer 2010 Recommendation:

To help reduce turf stress, replace rolling with mowing on weak bentgrass greens. Research suggests this can be done up to three times per week.

Water Management

There is a good chance the root system has died back substantially. A superintendent recently told me that he recorded a soil temperature of 100 degrees at a 2.5 inch depth. When roots are shallow or almost nonexistent, so is the reservoir for water and nutrients. When these conditions occur, it is



Weak bentgrass putting greens have been common this summer. High temperatures and excessive rainfall have increased the stress level on creeping bentgrass, superintendents and golfers.

difficult for the grass to make it through the day without supplemental water. To compound matters, I have observed that soil moisture is lost faster in areas where the turf has thinned or wilted.

Summer 2010 Recommendation

Watch the putting greens carefully and add supplemental water as often as needed to prevent shallow-rooted bentgrass from wilting.

Disease Pressures

As the physiological mechanisms at work in a bentgrass plant begin to break down under high temperature stress, diseases begin to act as vultures and opportunistically attack weak tissue. No standard recommendation is offered here because issues vary from course to course, but it is a good idea to bring out the heavy hitter fungicides if this has not been done already.

Traffic Management

Traffic is stress on the grass, and stress is not good on weak bentgrass under high temperatures. Obviously, almost every golf course wants as much play as possible given these difficult economic times, but traffic patterns need to be carefully managed. Traffic management options range from reducing outings and rounds of golf, using ropes and stakes to manage the flow of traffic on and off a green, to completely closing weak putting greens. Again, a specific recommendation is difficult because conditions are so variable from course to course.

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