



## Bentgrass Management In July: The Battle Begins

By Chris Hartwiger, director, Course Consulting Service

**June 26, 2013**

It took longer than usual in the southeast for temperatures to reach the mid-90s, but hot weather has arrived and is here to stay for the next several months. To help golf course superintendents keep their stress level low, we offer a few bentgrass stress management tips for creeping bentgrass putting greens. Course officials might find this information helpful to better understand why certain things are done on the golf course during the summer. Where applicable, research related articles have been included for more information. Please note that this list is not intended to be comprehensive and local conditions ultimately dictate day to day decisions.



*Utilizing science based bentgrass stress management tips will help minimize turf thinning and prevent the need for a fall grow-in period.*

### Fan Use

Fans are a staple on golf courses with bentgrass putting greens. Research trials and observations have confirmed their value as an important bentgrass life support tool.

How to best use fans is a question that comes up each year. 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 if conditions become extreme.

For more information, visit these links.

[Auburn Fan Study](#)

[Selection Installation and Operation of 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 infiltration of water, 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.

[Practices to Alleviate Organic Matter Related Problems](#)

[Surface Organic Matter in Bentgrass Putting Greens](#)

*Summer 2013 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 potential amount of 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 below:

### [High Temperatures and Low Mowing Heights](#)

*Summer 2013 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 times 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.

### [Impact of Mowing Height Mowing Frequency and Rolling Frequency on Green Speed](#)

*Summer 2013 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 Using a Soil Moisture Meter**

There is a good chance a bentgrass root system will die back substantially in high soil temperatures. When roots are shallow they simply cannot reach moisture that may be deeper in the rootzone. When this occurs, it is difficult for the grass to make it through the day without supplemental water. To compound matters, I have observed (by using a soil moisture meter) that soil moisture is lost faster in areas where the turf has thinned or wilted previously.

For information on how to integrate a soil moisture meter into your water management program, read this article: [Soil Moisture Meter Use on Bentgrass Putting Greens](#).

*Summer 2013 Recommendation*

Use a soil moisture meter. Watch the putting greens carefully and add supplemental water proactively to prevent shallow rooted bentgrass from wilting.

### **Fungicides**

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 can 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 and stress is not good on weak bentgrass under high temperatures. Obviously, most golf courses desire as much play as possible given these difficult economic times. Traffic management options range from reducing outings and rounds of golf to completely closing weak putting greens to using ropes and stakes to manage the flow of traffic on and off a green are options. A

specific recommendation is difficult because conditions vary from course to course.

## **Conclusion**

Applying as many science based stress management practices as possible will help to maintain good bentgrass health during the summer. In the southeast, the name of the game is getting through the summer with full coverage so that when temperatures become favorable, the focus can shift back more towards daily playing quality.

Source: Chris Hartwiger ([chartwiger@usga.org](mailto:chartwiger@usga.org)) and Patrick O'Brien ([patobrien@usga.org](mailto:patobrien@usga.org))

## **Southeast Region Agronomists:**

John H. Foy, regional director – [jfoy@usga.org](mailto:jfoy@usga.org)

Patrick M O'Brien, agronomist – [patobrien@usga.org](mailto:patobrien@usga.org)

Todd Lowe, agronomist – [tlowe@usga.org](mailto:tlowe@usga.org)

[Information on the USGA's Course Consulting Service](#)

[Contact the Green Section Staff](#)