

Don't Make Your Greens Unapproachable!

The approaches in front of greens don't have to be as fast as the greens, but they should be firm enough to allow the "bump-and-run" option.

BY LARRY GILHULY

The hole is located at the front of the green, the green is firm, and the wind is at your back. How many times have you faced this type of shot on a golf course? Most golfers would respond by landing the ball in front of the green (if the contour allows) and playing the bump-and-run shot that was prevalent so many years ago. Take the same example and make the approach area considerably softer, without the golf ball releasing to the front hole location. For a regular player without the skill to spin a ball, what are the choices? Approaching this issue from the maintenance perspective is the answer, and the players deserve it.

Over the years of playing the game and watching it at the highest levels, there is no question that the most difficult and frustrating shot faced by the majority of golfers is the shot into a firm green with a soft approach. Previous articles on this subject recommended basic programs of aeration and sand topdressing to address this situation (1,2). However, in the ensuing time other major improvements have been made with equipment, irrigation application, and the ability to truly compare firmness between a green and approach. Let's take a closer look at this critical area that has received more attention, but still can be improved on many golf courses.

HISTORICAL PERSPECTIVE

While putting green construction became largely sand based starting in the 1960s, the approaches were not built in a similar manner. To this day, with the exception of those golf courses built on sand or with a sand cap, the 10- to 15-yard area in front of greens often has insufficient drainage and is typically maintained the same as the



Aeration and sanding can go a long way to firming green approaches, but more management is needed to address organic production.

fairways. Adding to the difficulties is the fact that the typical architecture of greens is slanted toward the player rather than away. This results in a natural flow of water to the front of the green and the approach, with excess moisture being one of the key ingredients in making these areas too soft.

At the same time, the average American golfer has not quite grasped the concept that a golf course is a playing surface and not a sea of green. Over the years, this desire for green has resulted in overwatered greens, with the flagstick considered the bull's-eye in a very receptive target. However, to achieve both the type of smoothness and speed desired by players, these surfaces must be maintained in a firmer condition — hence the dilemma.

The reduction of water for the greens will improve firmness for these playing areas, but oftentimes the approaches receive additional water. The result is firmer greens with considerably softer approaches. While many struggle with this issue, there are three simple ways to improve the approaches on every golf course.

STEP ONE

Step one in this process is the easiest, least expensive, and will actually save money. It involves the careful application of fertilizer and water. There is a distinct difference in the philosophy of fertilizer use between the United States and the British Isles. Across the pond, they understand that the game is played on the ground and overall firm-



Deep vertical mowing will remove far more organic material than aeration.



Regular aeration and sand topdressing helps, but without deep vertical mowing and light sand applications between aerations, layers of organic and sand will form.

ness is a requirement. Less water + less nitrogen = less organic matter production. They also understand that green grass requires far more “green” (i.e., cash) to maintain the surfaces. Color is not a requirement for a good playing surface, thus the reliance on nitrogen is far less. Instead, less expensive micro-nutrients, such as iron sulfate and magnesium sulfate, are used to create some color on their golf courses without excess organic production near the surface. Less organic + less water = firmer and faster playing surfaces. (Note: The lack of power cart usage in the U.K. is another factor that lessens nitrogen requirements.)

In the U.S. the desire for green color results in much higher labor costs to maintain grasses that are often over fertilized. Nitrogen is often used to produce green color, thus more organic material forms near the surface. Much like a sponge, organic material holds a significant amount of water. However, when it dries, it repels water, resulting in localized dry spots and the need for wetting agents. At the same time, water use is another way to keep grass green, and, in many cool-season areas, is the only way to allow *Poa annua* to survive during the summer months. More nitrogen + more water = more organic material production. When this occurs, the byproduct will be much softer playing conditions.

The first step in improving the firmness of approaches is to take a close look at how you are providing color in these areas. Less nitrogen and more control of water will result in less organic material.

STEP TWO

The dual practices of aeration and sand topdressing have been around for decades on greens and tees. This fundamental combination has proven to be very effective in the Pacific Northwest in improving fairway playing surfaces. Research conducted in Connecticut showed that more sand use resulted in less dollar spot, reduced earthworms, and, improved overall firmness (3). The question then becomes, how often should the approaches be aerated and how often

should sand be applied? The answer can be found by looking at your greens.

The process of adding sand, removing organic material, and improving firmness has been conducted on putting greens for decades. Push-up greens without drainage have been transformed over the years to putting surfaces with good firmness and smoothness due to regular aeration and topdressing programs, with drainage added where needed. Since this has been so successful, it makes sense to simply expand this same program 10-15 yards in front of the greens. The best results are found when aeration is completed at least twice annually (spring and fall) with large tines ($\frac{5}{8}$ " minimum) spaced as close as possible to remove more organic material. Sand is then applied to completely fill the aeration holes. But is this enough to truly firm the approaches?

In reality, the above program will help firm the approaches, however it will result in layers of sand and organic matter that develop in the time between aeration treatments. To eliminate this problem, many have simply expanded their light sand topdressing program for the greens to the approaches, with some including an additional pass with the topdressing machine on this higher mowed area. Regardless of how much sand is applied (remember, the more the better), this will help offset excess organic material production.



No aeration, no sand topdressing, and no deep vertical mowing — the results will produce soft approaches with no ball release.

STEP THREE

The final step of achieving approaches at or near the same firmness as the greens is vertical mowing. This is not your everyday "tickling" process completed on the greens. This process requires up to $\frac{1}{2}$ - $\frac{5}{8}$ "-deep vertical mowing to effectively remove far more organic material than open aeration tines. However, the mowing heights found in front of the greens will allow for faster recovery of both warm- and cool-season grasses. Researchers at the University of Arkansas found that the use of deep vertical mowers with various blade widths removes significantly more organic material than hollow-tine aeration (4). The next question with deep vertical mowing is how often should it be completed? This answer generally is at least one to two times annually, based on location and type of grass found on the site.

The next question is, should deep vertical mowing be completed separately or at the time of aeration? Based on the amount of organic material that will be removed, it is best to deep vertical mow immediately prior to aeration of approaches. Remove the organic material created by the vertical mowing and then aerate the approach. Once the cores are removed, apply enough sand to fill the holes and slice marks created by the vertical mower. If this combination does not prove successful on your approaches due to shallow roots, then consider one deep vertical mowing and one aeration annually, rather than the two-aeration program. The addition of deep vertical mowing truly provides significant firmness to a playing surface.

TESTING RESULTS WITH NEW EQUIPMENT

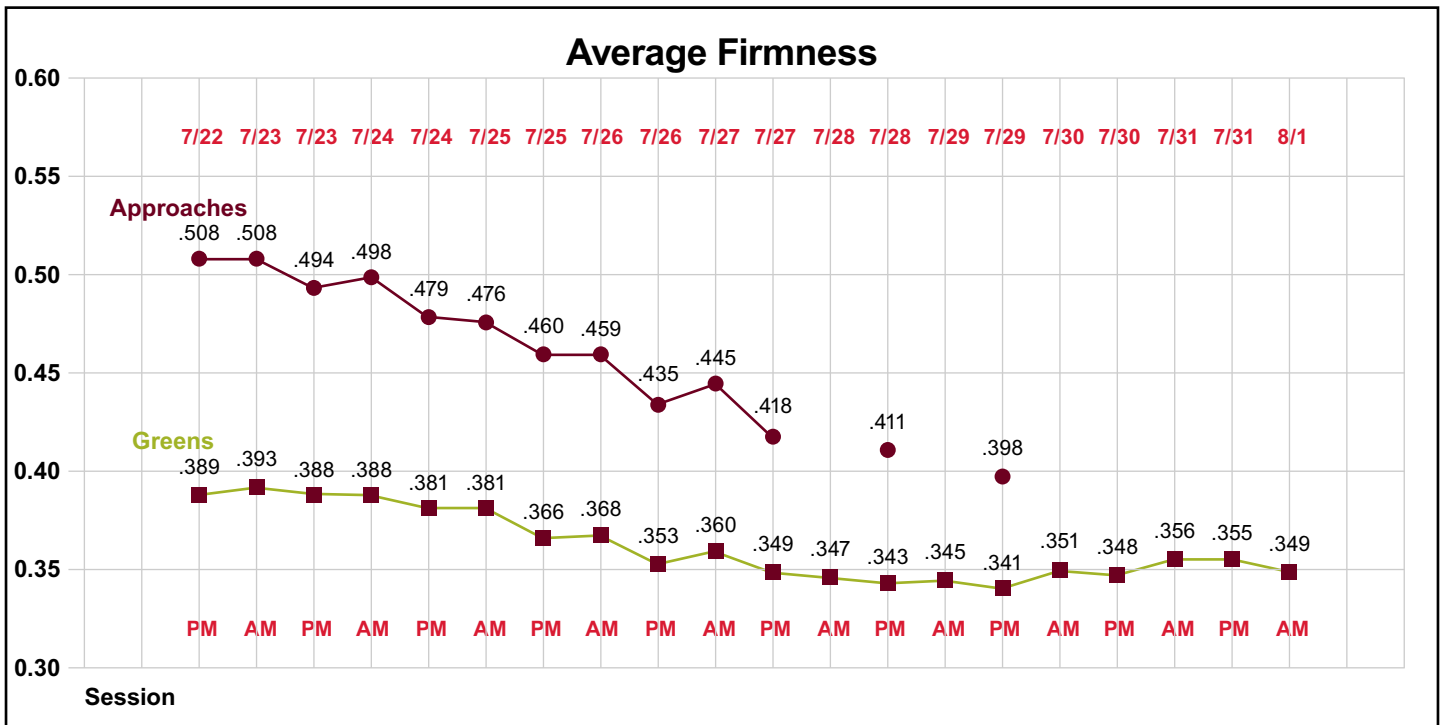
The USGA TruFirm is used for our national championships to monitor firmness that is appropriate for the high skill level of the players in each championship. On regular USGA Turf Advisory Service visits, it is used to compare greens and approaches to help players and the maintenance staff understand the differences and the impact of organic material production on playing conditions.



Consistent aeration/topdressing, light sand topdressing, and vertical mowing can greatly reduce the negatives associated with too much organic material.

The accompanying chart shows the firmness values for one of the USGA national championships. The values are obtained by dropping a specialized "hammer" onto the surface and measuring the depth of the indentation it creates. The lower the value (measured in thousandths of an inch), the firmer the surface. Samples were taken in the morning and afternoon hours. While the values are only pertinent to this golf course and championship, the more important observation should be the wide difference in values between the greens and the approaches at the start of championship preparation week and how they changed over time. Once the overhead irrigation system was shut off on July 24, the firmness values began to drop noticeably as a hand-watering program was initiated. While the approaches were not tested through the end of this championship, the differences between the greens and approaches became smaller as less water was applied.

There is no question that the amount of water, combined with the amount of organic material found near the surface, has a significant impact on how firm the approaches will become. Remove more organic material and the potential of getting the approaches at



One example of average firmness values, taken twice per day, at a USGA championship site as measured by the USGA TruFirm. The lower the value on the vertical axis, the firmer the surface.

or near the same firmness of the greens increases dramatically. This is especially true if you do not have the manpower to hand water or live in an area where normal rainfall and growth combine to give soft conditions during the wetter portions of the year. While the following example shows the impact on firmness with the removal of automatic irrigation on approaches, the same type of positive impact can be achieved when more organic material is removed by deep vertical mowing.

Excess organic material also impacts warm-season grasses. The positive impact of deep vertical mowing on bermudagrass was observed during a visit in Hawaii. In this case, the 16 approaches that were tested with the USGA TruFirm had firmness values similar to the greens due to identical programs for aeration, sand topdressing, and deep vertical mowing on both the greens and approaches. However, two of the approaches were significantly softer than their corresponding greens. The only difference — they were comprised of hybrid bermudagrass with more organic production. Once again, more organic production = softer surfaces.

SUMMARY

Regardless of the type of grass, controlling organic matter production in front of the greens will significantly improve playing conditions on this critical area of the course. Whether it is less nitrogen and water or programs focused on the physical removal of organic matter, the days of “land-and-splat” can be over at your golf course, regardless of budget. After all, wouldn’t it be nice to make both your greens and players more “approachable”?

RESOURCES

[Gilhuly, Larry. 1995. Surround Your Greens with Quality. USGA Green Section Record. March/April. 33\(2\): p. 10-12.](#)

[Gilhuly, Larry. 2000. Temporary Sanity. USGA Green Section Record. November/December. 38\(6\): p. 10-12.](#)

[Skorulski, Jim; Henderson, Jason; Miller, Nathaniel A. 2010. Topdressing Fairways: More Is Better. USGA Green Section Record. March/April. 48\(2\): p. 15-17.](#)

[Landreth, Josh; Karcher, Doug; Richardson, Mike. 2008. Cultivating to Manage Organic Material in Sand-Based Putting Greens. USGA Green Section Record. January/February. 46\(1\): p. 16-19.](#)

LARRY GILHULY has been very “approachable” on a variety of topics with the USGA Green Section for the past 28 years and can be reached at lgilhuly@usga.org.



Deep vertical mowing on approaches and fairways will remove a massive amount of organic material. Just make sure the wind is not blowing behind you!