



# TURFGRASS MATTERS

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## HOW TO MANAGE PUTTING GREEN SPEED

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Monitoring golf ball roll has been of interest since the 1930's. Edward Stimpson monitored golf ball roll in 1937 using an inclined plane which he had developed. The United States Golf Association (USGA) modified Mr. Stimpson's device and produced the version that we use to measure golf ball roll today. They honored Mr. Stimpson by calling it the stimpmeter. The USGA also developed standards for golf ball roll. By measuring the length of golf ball roll in feet and inches, we can determine if greens are slow, medium or fast (Table 1). Hence, the term used for measuring golf ball roll is putting green speed.

Table 1

6 feet	6 inches	— Slow
8 feet	6 inches	— Medium
10 feet	6 inches	— Fast

It has been 25 years since the release of the stimpmeter by the USGA and during this time, a lot of research has been conducted to determine how turf management affects putting green speed. Universities across the United States including Rutgers, Penn State, Ohio State, Nebraska, Michigan State, North Carolina State, University of Arizona, Texas A & M, Virginia Tech, University of Wisconsin-Madison and the University of Florida have investigated this issue. Research has also been done overseas in the United Kingdom and Australia. By knowing how to change the speed of greens, we can make greens faster or slower by the way they are managed. In the remainder of this article, I would like to highlight the results of this work.

One of the first things learned using the stimpmeter was a wide variation in putting green speed. Researchers in the late 1970's

and early 1980's went out and determined speed on many golf courses. Three things were proven regarding putting green speed:

1. Speed differences of five to six feet existed between golf courses.
2. Speed varied by as much as two feet within a course.
3. Speed consistency varied weekly by as much as one foot and seasonally by as much as three feet. 6

This initial information created controversy between golf courses. The stimpmeter became a tool used by golf courses to compete with one another. While this was not the intended purpose it is still used that way today by many in the golfing industry. However, its original purpose holds true; it is an invaluable tool to determine putting green speed consistency within a golf course.

I will now discuss some of the maintenance practices used to change putting green speed. These include mowing, rolling, plant growth regulators, irrigation, nitrogen fertility, and topdressing. I will also report the findings of different turfgrass varieties on speed as well as one study that was performed to determine how well the golfer can determine speed differences.

### Mowing

Mowing has the greatest impact on putting green speed. The height of cut and the frequency of cut both play a role in determining speed. For every 0.03 inch reduction in height, a speed increase of six to eight inches will be measured. However, once cutting height has decreased below .125 of an inch, the increase in speed is only four inches for every 0.03 inch reduction in height. Also, these extremely low mowing heights can severely stress the turf leaving

the turf manager to decide if the speed increase is worth risking poor turf quality. Frequency of cut also affects putting green speed. After the first mowing, an eight inch increase in speed has been measured. If double mowing is maintained for at least three days and additional eight inch increase in speed is likely to be found.

### Rolling

Rolling is a practice that has been used on putting greens for a long time. Its effect on speed has been studied for the last 20 years. We know that rolling increases speed. Single rolling will increase speed six to twelve inches while double rolling adds an additional six inches. These increases will last from one to two days.<sup>4</sup> However, the concern exists regarding the negative affects this rolling will have on the turf. Recent information indicates that frequent rolling between four and seven times per week decreases turf quality and increases compaction. The good news is that rolling three times or less per week appears to not have negative affects on the turf quality.

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