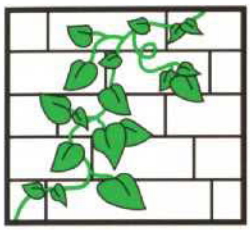

GAINING GREEN SPEED THE EASY WAY

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As many of you are well aware, the only thing golfers use to measure a golf course's quality is the speed of the greens. I have talked with many golf course superintendents who wish the stimpmeter had never been invented because it does not tell us much about the green's quality. This device is very useful for making sure greens are up to playing standards for tournaments, but it is used too often. Consequently, many superintendents have lost their reputations and their jobs trying to get faster green speeds by lowering mowing heights, starving the turf for nitrogen and drying out the surface. Well, there is a much safer way of achieving the same goal: rolling.

Recently, at the annual conference of the American Society of Agronomy, turfgrass researchers from all over the United States presented their research results. Thanks to G.W. Hamilton at the Pennsylvania State University and C.E. Hartwiger at North Carolina State University, we have data to report on greens rolling. Greens rolling has been practiced for 80 years on some courses so it is not a new concept, but commercially available rolling equipment is still revolutionary.

Some of the most obvious questions asked regarding rolling are: 1) What effect does rolling have on surface compaction? 2) Will there be a decrease in infiltration rates? 3) Do sand-based greens behave differently than native soils? and 4) Are there any decreases in turf quality?

Rolling has been scrutinized by many scientists since the rollers look quite heavy but they actually apply only 9-10 pounds per square inch. Still, studies indicate rolling a putting green more than once a week will lead to poor stand quality, increased bulk density and decreased infiltration. When I say rolled once a week this actually means two passes over the same turf (once in one direction and then once in the opposite direction as the roller moves back and forth over the green). When greens are rolled once a week there is a gain of 10-15 inches in stimpmeter readings for 48 hours. This increase in speed will last one day longer on well drained high-sand root zones in comparison to native loamy soils, even though there is no difference in compaction. While rolling once a week will not decrease water infiltration rate, soil compaction will not increase and there will be no change in root mass.

Precautions and Considerations

1) There is always some wear that occurs on the edge of the green due to skidding of the roller when it changes directions, but this can be minimized as operator skills improve.
2) Rolling more than once a week will lead to turf damage and increased green speed, but the increase in speed will still only last 48 hours.
3) If rolling is used when the soil is wet, compaction will occur.
4) Since we do not mow greens when they are under stress, you should not roll a green at such times either.
5) Rolling may decrease the number of topdressings you need to apply.
6) Green speed can be maintained while maintaining adequate N fertility.
7) Greens may be more consistent throughout the course.
8) Ball mark damage may be reduced as the surface is made more firm.
9) Double cutting before important events may not be necessary.

There may be added labor costs with the use of rollers unless rolling allows you to skip a few mowings in which case it may be beneficial agronomically. Obviously higher mowing heights improve turf quality by increasing the leaf surface area. Consequently, more surface area equals more photosynthesis which equals more sugar production and more growth. Many of us have lost sight of the importance of good, strong growth of the turfgrass plant.

Remember turfgrasses evolved in areas where there was a lot of heavy grazing, and, in order to survive, the plants had to recover quickly. We are doing the same thing when we mow but we have taken this to the extreme by mowing at very low heights and nearly everyday. So anytime you are given the opportunity to raise mowing heights, do it.

In conclusion, we have very few long-term studies investigating the effects of rolling, but rolling should not be looked at as a long-term strategy for improving a putting surface. Remember the 10% increase in speed will only last about 48 hours so this method should only be used when speed is an issue in the short-term. If this is everyday on your course, you will have to use rolling with caution. The largest problem other courses are going to face is convincing greens committees that the benefits of a roller is worth the cost. Good Luck!