

ship share the cost, but that is quickly changing. If the money isn't coming in, cuts have to be made and superintendents must be willing and able to do that.

"And we're seeing more management companies come into the mix. I think they're there for business reasons, not for the game of golf," David continues. "This change is not always for the better. It's important that employers keep a balance of, 'golf is a great game' and 'golf is a business.' If you no longer have a game that's fun to play, you're going to lose business. You're going to see participation go downhill as customers get frustrated."

And what does David believe are the greatest challenges affecting golf course superintendents? "I really see more restrictions on water and chemical usage," he answers, adding that this is not necessarily a bad thing, but a reality. "It's so expensive for the chemical companies to get products on the market for such a small industry like ours. So we're going to see fewer new products coming out."

"And right now a lot of existing products are undergoing review at the EPA," he adds. "A lot of them aren't going to be available to us after the review because it's just too expensive to do the testing that's required to keep those products on the market for golf courses. What's most helpful to us is when we can piggyback with a product that's good for the agricultural industry

which is working with huge amounts of acreage."

Restrictions on water haven't really hit Wisconsin yet; they're more of a reality it states like Arizona where there just isn't enough water. "Water's becoming more of a commodity, and fresh water for irrigating courses is going to be hard to come by in some states," David points out. "Some courses in the south are recycling water from waste water treatment plants and are irrigating with effluent water. This adds to new challenges for the superintendents because this water tends to have a higher concentration of salt and other deposits."

Although Wisconsin has not seen major water restrictions, David applauds ways to reduce water usage. "Many courses are adding areas of native plants that they're not watering or mowing. They're just letting it grow long if it's out of play," he points out. "There's no reason to have perfectly manicured turf from one edge of the course to another, especially in these out-of-play areas."

Courses are also putting in new irrigation systems, and David believes there's a need for golf courses to communicate to the public how these new systems will cut back on the amount of water used. "I think there's a misconception with the public that, if you put in a new irrigation system, you're going to use more water," he says. "But, really, with new systems that are correctly designed, you're going to put down less water. You can put down water where you need it the most and at lighter rates."

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**A county-owned course...**

David has been superintendent at Rolling Meadows – a 27-hole, county-owned course – since April of 1996. In 1997 he was also named general manager. “I do the budgeting. I do the advertising,” he explains. “Our golf professional operates the club house; he hires and manages the employees there. But his services are contracted out – he’s not a direct employee of the county. So I oversee his contract.”

For course maintenance, David has three full-time employees – a mechanic and two course assistants. In the spring and fall he hires six retired men. And in the summer he hires an additional five or six college or high school students, with the retired men cutting back their hours a bit.

“One of the things I try to do here is to hire one more guy than we need,” David explains. “That allows everyone to take off some time when they want to. For the students, it’s their summer vacation. They can work hard the days they’re here. But if they want to take a day off, it’s nice to be able to let them do that without facing any hardships in getting the work done.”

The course is owned by Fond du Lac County – the only golf course the county owns. “One of the challenges of my job is keeping the politics of county government from entering the golf arena,” he says. “Rolling Meadows is an enterprise fund, so we’re not tax supported. We have some leeway which other county departments don’t have. Our budget isn’t changed that often by the county board because the money we generate stays with the golf course. We also pay the county \$71,000 each year in lieu of property taxes. And any time a county department does some work for us, like the highway department paving a parking lot, we pay a pretty good price for that service.”

**Providing a public service...**

David knows that some people believe local governments shouldn’t be in the golf business. “All our competitors in the area probably wish we weren’t here,” he says. “But I believe one of the jobs of a county is to offer recreation to its residents. When Rolling Meadows was built in 1972, there was no other 18-hole public golf course in the area. The same was true when they expanded to 27 holes in 1996. So there’s a good reason the county did it. It’s a quality of life issue for a county to offer a golf course to its residents, just like it offers parks or recreation trails.

“Plus, as a golf course that supports itself, we are paying our own way. We’re not supported by tax payers. And our rates must reflect that,” he adds.

“One of the hardest things I do as general manager is setting golf rates,” David admits. “Municipal golfers want the lowest possible rate. But yet they also want

a good product. We have to balance those two. A lot of people feel like an increase in rates is a personal thing – they think we’re trying to discourage them from playing. But, as an enterprise fund, we need to match our revenue with our expenses. The way I come up with rates is pretty cut and dried. But increases are still hard to sell to our general customers. There’s a great need to talk to the people to get our ideas across.”

**His job history...**

Rolling Meadows is the fourth course at which David has worked. Born in 1966, he spent most of his childhood in Beaver Dam where his father sold building materials to the construction industry. His senior year in high school he got a job at Sunset Hills Golf Club in Beaver Dam. “I was the best dish washer in the club house, so they asked me to go outside for the summer and do maintenance work,” he remembers. “It was a pretty small operation. They had one greens mower and mowed greens every other day. They didn’t have a tee mower; they just mowed them with the fairway mower. We push-mowed around trees because they didn’t have a rotary mower. This was in the mid 1980’s, so it wasn’t that long ago.”



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After graduating from high school in 1984, David went to UW-Whitewater for two years where he majored in accounting. "But I decided I liked my summer job better," he recalls. "And I got an opportunity to be a superintendent – probably before I was ready – at Camelot Country Club in Lomira. So I dropped out of college.

"I like being outside," he says of his reasons for switching careers and taking the job at Camelot in 1988. "I like the independence of being out on my own on the course. I like the variety. Every day the weather is handing you something different."

In his first full-time golf job, the novice learned quite a bit from the club's owner, Don "Red" Roskopf. "He was a pretty involved owner," David points out. "At one time he did the superintendent job himself. It was just getting too much for him to do, so he hired me. I definitely wasn't ready to be a superintendent. I had only been a course employee in Beaver Dam. But he wanted somebody younger who would do the job his way. So I learned quite a bit from him."

He also attended the University of Massachusetts Winter Turf School from which he graduated in 1990.

**A difficult lesson...**

In May of 1992, David became the superintendent of Lake Windsor Country Club, a 27-hole course in Windsor. "That was a total disaster," David sadly recalls. "The owners at the time were in bankruptcy reorganization. They hired me with the idea of getting out of bankruptcy. But within a month I began to think they really wanted to be in bankruptcy. The way I saw it, they were just taking as much money out of the property as they could. Obviously, I didn't do a real good job of investigating the job before I took it. Otherwise I probably never would have gone there."

He left Windsor in November of 1993 and returned to Camelot where he stayed until the spring of 1996. "Camelot was for sale at the time," he explains. "With an ownership change, you never know what's going to happen, and I wasn't comfortable with that. Fond du Lac County was looking for a new superintendent for



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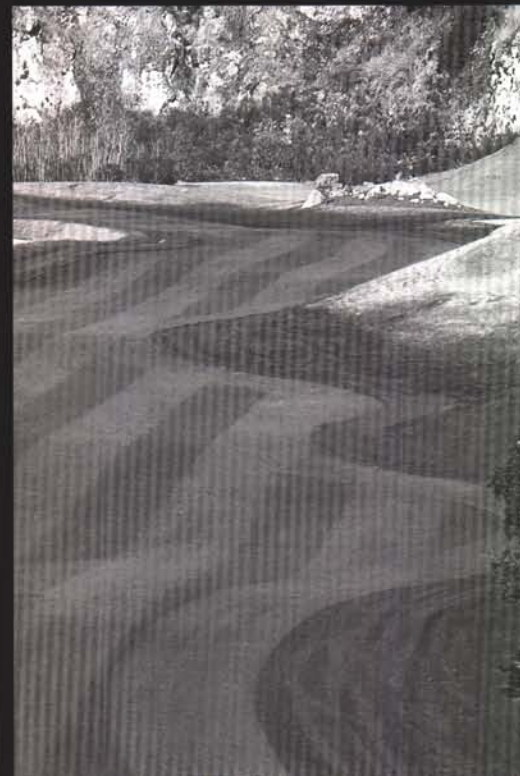
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Rolling Meadows. They had just finished adding nine holes. I knew there was a lot more job security with a municipal course. I had an opportunity to become the general manager, not just the superintendent, within a year, so that was a step up. And this time I did a good job of investigating! I knew everything about the job before I took it."

Looking back on his golf career, David realizes that he probably learned the most at Lake Windsor. "It was education by fire," he says. "Because of the money problems, we had a very small staff and were trying to turn things around. It was cash and carry for everything, and we never knew when somebody might come and take back some equipment.

"And my second year there, in July of 1993, we had a flood which closed the course for 21 days," he continues. "We had some areas that were under water for 15 days. We had to recover quickly from that. We used busboys, dish washers and bar staff from the club house just to get back to order, to resod, and to prepare for fall play."

**Enjoys a job well done...**

For David, the biggest reward of being a golf course

superintendent is the satisfaction of knowing that you've done a job well. "We work independently a lot. Most superintendents are responsible for their property, however big or challenging it is," he explains. "At the end of the year, we can look back and know that we had many successes and made the improvements we wanted to make. I think that's the biggest reward."

When he's not working on the course, David spends most of his time with his family. His wife, Noelle, is an Early Childhood teacher for the Mayville school system. They have two children: Kayla, 10; and Andy, 8. "Our kids attend the Catholic School in Theresa, and I'm on the school board for that school," David points out. "That takes up more time than I thought it would.

"I enjoy reading," he adds. "A lot of times I'm just reading trade publications, but it's nice just to be able to sit down and read. I don't do a whole lot else besides work and following the kids around to their activities. There isn't a whole lot of spare time right now."

With his new role as president of the WGCSA, there will be even less spare time for David. But he'll be doing something he loves – working with and communicating with people who face the same challenges and rewards that he faces every day. ♣

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By David Brandenburg, Golf Course Superintendent, Rolling Meadows Golf Course

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# Putting Green Speed: Variables and Consequences

By Dr. Wayne R. Kussow, Department of Soil Science, University of Wisconsin-Madison



Seven years of observations made in a long-term study entitled "Performance Driven Putting Green Management Systems" provide the basis for this article. The variables in the study are three creeping bentgrass cultivars, 'Penncross', 'Providence', and 'Crenshaw', each mowed at three heights and growing on sand and native soil putting greens. The study required frequent measurements of speed with the Stimpmeter and subsequent adjustment of mowing heights to maintain speeds of around 8 feet, around 9 feet, and consistently greater than 10 feet.

To set the stage for the discussion that follows, I want to quote from the second edition of Dr. James B. Beard's book "Turf Management for Golf Courses." The quote, taken from pages 112 and 113, is as follows:

"A green speed of 8 to 9 feet represents a typical norm now used on golf courses for regular play, while slower speeds of 6.5 to 8.5 feet are enjoyed on golf courses played primarily by less skilled players. Speeds for USGA Championships usually are from 9.0 to 11.5 feet. The green speed selected is affected by the degree of slope on the greens, the wind velocity and direction, and the capability of golfers in the event.

Excessively fast greens cause putting to become more like a game of chance, and the turf of certain cultivars may be significantly thinned by extraordinarily close mowing with the resultant invasion of moss, algae, and annual bluegrass. Excessively fast greens also require more skill to play, which can lead to slower play. Attempts to maintain championship quality greens for more than a 2- to 4-week period can lead to serious deterioration, as few golf courses

have the climate, soil conditions and resources needed to sustain championship quality greens on a daily seasonal basis."

Data from the present study have clearly and consistently shown that the dominant factor controlling putting green speed is mowing height. Occasionally there were bentgrass cultivar differences. Whenever this happened, the plots populated by the more horizontally growing 'Penncross' were faster than those with the more erect growing 'Providence' and 'Crenshaw'. The sand green tended to be slightly faster than the native soil green, primarily because the sand green was not capable of maintaining as high a grass density as the soil green.

The relationship between mowing height and putting green speed that evolved over the 7 years of this study is shown in Figure 1. The line depicts the long-term average relationship. According to this line, consistently mowing at 0.240, 0.174, or 0.145 inch can result in speeds of 8, 9, and 10 feet, respectively for pure bentgrass putting greens. But note the spread in the data points around each mowing height. Depending on factors such as time of year, weather, time of fertilizer application and topdress-

ing, etc., the speed can vary by as much as 11 inches from the long-term average value. This fact needs to be pointed out to anyone insisting that you maintain a constant putting green speed day after day throughout the season. Maintaining a reasonably constant putting green speed requires much more than just mowing at the same height from opening to closing for the year.

Depending on type of putting green construction and mowing height, week-to-week putting green speeds can vary by as much as 12 inches (Table 1). These data also point out the fact that weekly variation in putting green speed increas-

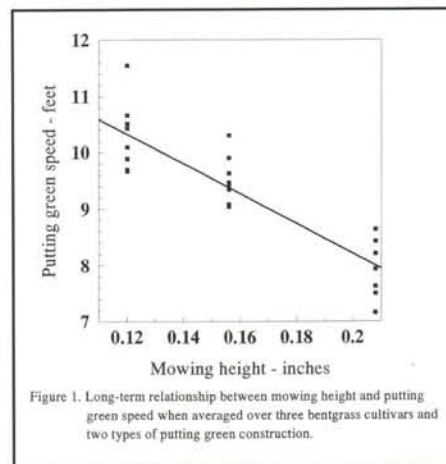


Figure 1. Long-term relationship between mowing height and putting green speed when averaged over three bentgrass cultivars and two types of putting green construction.

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es as mowing height decreases and sand greens exhibit more variation in speed over time than do native soil greens. In other words, the effort required to maintain constant putting greens over time is greatest for the modern sand greens mowed at 0.120 inch or so. The task is much easier on native soil greens where speeds of 8 to 9 feet are acceptable.

Putting green speed varies with time of season as well over periods of days. This is illustrated by the data in Table 2. As a general rule, putting greens get faster when progressing from spring to mid- to late-August, but slow down as more favorable growing conditions return in the fall. This is an inherent trend in putting green speed in

climates such as ours.

Another variable in putting green speed is time of day. In the present study, we were able to see how much daytime changes in speed were influenced by mowing height, bentgrass cultivar, and type of putting green construction. We found that the changes in daytime speed were greater on native soil than sand greens, were greater for 'Penncross' and 'Providence' than 'Crenshaw', and were greatest when speeds were near their seasonal peaks in late summer. Measurements taken at 11:00 am, 2:00 to 3:00 pm and again at 6:00 pm resulted in the time-of-day influences on green speed shown in figure 2. Note that essentially no change in speed occurred between 11:00 am and 2:00 pm. After 2:00 pm, putting green speed declined sharply. The average decline was 8.6 inches, but ranged from 7.5 inches for sand greens to 9.6 inches for native soil greens.

Plant growth regulators are viewed as a means for increasing putting green speed and maintaining more consistent speed throughout the day. In this study, Primo was applied monthly at the rate of 0.24 oz/M to one-half each plot. Use of the product did increase green speed somewhat, but varied with bentgrass cultivar, mowing height, and type of putting green construction. Greens populated with 'Penncross' and 'Crenshaw' gained 3 to 4 inches in speed, while speed of the 'Providence' greens were not affected by application of Primo. Primo increased green speed at the two lowest heights of cut, but not where the greens were mowed to maintain a speed of about 8 feet. The speed of the native soil greens benefitted more than that of the sand greens, but the difference was not statistically significant. Application of Primo under any conditions did not significantly reduce daytime reductions in putting green speed.

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