

SOIL AMENDMENTS

BY HEATHER DAVIES

Playing rough at Oakmont

Superintendent leaves nothing to chance, even outside the fairways

I'm sure you've heard plenty about the countless hours John Zimmers and his staff put into preparing Oakmont Country Club for the 2007 U.S. Open. You've probably read about the speedy greens, the daring tree removal program, the fast-and-firm fairways and almost every other aspect of getting the famed course ready for one of the most successful Opens in recent history.

But what was going on right outside the greens and fairways – in the rough? It turns out Zimmers put almost as much thought and effort into the tall grass as he did the manicured turf.

Now that he's put the big event behind him and had a chance to catch up on his sleep, Zimmers is happy with the way things turned out.

"More importantly, the USGA and the membership were pleased with the conditions," he says.

Heading into the Open, Zimmers worried most about the weather forecast for the week.

"Weather is the biggest possible obstacle that is totally out of your control as a superintendent," he says. "It also has the largest impact on the outcome of the championship."

Fortunately, Mother Nature mostly played along, and conditions progressed perfectly throughout the week thanks to a little early moisture followed by sunny and dry conditions during play.

There's little doubt the majority of players', media's and fans' attention was – as always – on the putting surfaces. And Zimmers was prepared for that.

"You always worry the most about the putting greens," he says. "They're basically what you get judged on the most, as far as course conditioning goes, and are the most vulnerable."

In some ways, the demands of Oakmont's low-handicap membership made that part easier. Green speeds and tough pins used for the event aren't unusual in the context of regular member play at what many consider to be one of the most challenging courses in the world week in and week out.

"The Oakmont membership prides itself on playing championship conditions on a daily basis," Zimmers says. "It's also a benefit that the club has been through this several

times before, as this was Oakmont's eighth U.S. Open."

One thing, however, that was different than typical Oakmont play was the newly tree-free area surrounding the greens and fairways: the rough.

"Going into the Open, I thought our rough was the weakest part of the course," Zimmers says. "I was concerned about trying to provide 5-inch-plus uniform rough without it laying over. That's difficult to achieve."

The greens usually receive all the attention and most of the babying, but the USGA historically has viewed the rough, as the part of the course that provides the most protection against unreasonable scoring, as important.

"When you think about the U.S. Open, penal rough comes to mind," Zimmers says.

In the years leading up to the event, Zimmers talked with colleagues and suppliers

Soil testing showed there were subsurface deficiencies in the rough at Oakmont before the U.S. Open, and silica was one of them.
Photo: Oakmont Country Club



to see what, if any, types of products and practices might be able to simultaneously strengthen the rough and create more upright growth. The goal was to be appropriately penal but not have balls that were completely unplayable because of hayfield-type rough.

During his research, Zimmers considered the option of using silicon-based products. Soil testing showed there were subsurface deficiencies in the roughs, and silica was one of them. Research from Penn State and other universities suggested silicon-enhanced products provide better cell rigidity and, therefore, more turgidity and improved upright growth. In short, the higher-mown turf in the rough tends to stand up instead of roll over.

Eventually, Zimmers found a prilled, calcium-silicate product that also contained magnesium and other micronutrients. Most importantly, the custom blend – called Ex-

cellerator from Excell Minerals – contained the soluble silicon that had been shown to bolster the upright growth that Zimmers needed in the tall grass.

“It ended up turning out just fine – it was uniform, upright, turgid and withstood the wear from the equipment wonderfully,” Zimmers says. “I attribute that to the Excellerator product that we had been applying throughout the entire rough.”

Application rates of Excellerator initially should be enough to correct existing silicon deficiencies. Zimmers started the program in April 2006 at an initial rate of 25 pounds per 1,000 square feet and made subsequent applications in November and April 2007 at the same rate.

For most facilities, an initial rate of 25 pounds per 1,000 square feet is standard, according to Excell Minerals. Follow-up applications should be 10 to 12 pounds per 1,000 square feet every three to four weeks,

the company says. The target rate is about 50 pounds per growing season.

The bottom line for Zimmers is presenting the best-conditioned, most challenging golf course possible for Oakmont’s members, guests and the pros. The rough was and will continue to be a big part of that, so Zimmers recognizes the importance of the calcium-silicate program long term. There’s more to the program than just getting rough to stand up, he says.

“We use less fertilizer, and we’ve seen stronger, healthier turf that withstands traffic much better,” he says. “It really greens up, and we think we’ve had some suppression of disease as well. The only thing I would’ve done differently was to start on the program earlier. The results speak for themselves.” **GCI**

Heather Davies is a freelance writer based in Columbus, Ohio.

Research suggested silicon-enhanced products provide better cell wall rigidity and more turgidity, improving upright turfgrass growth. Photo: Oakmont Country Club



SOIL AMENDMENTS

BY KATIE MORRIS

Making amends

Illinois superintendent uses natural resources as soil amendments.

Golfers prefer playing on surfaces that are green, smooth and consistent. Soil amendments helps give turf the strength and absorbance it needs to withstand daily mowing, watering and foot traffic. To keep the course looking healthy and green, Steve Diel, golf course superintendent at Quail Creek Country Club in Robinson, Ill., uses natural resources around him to amend the course's soil.

Diel has been with Quail Creek for 31 years and previously was the superintendent of Charleston (Ill.) Country Club. He has learned from being in the industry for more than 40 years what type of soil amendments work best on the course. He uses two types of amendments: pure sand and compost that consists of grass clippings and leaves.

Topdressing the greens with sand builds the soil system, allows for better drainage and restrains compaction, Diel says. His crew applies a light application six to seven times a year and a heavy application when they aerify the greens twice a year.

The second type of amendment involves his lawn division gathering grass clippings and leaves during the year and composting them to mix in the soil. Compost is mainly used for building or renovating areas such

as tees or bunker surrounds, Diel says. He thought of the idea to use compost after realizing he and his staff needed to do something with the material generated from maintaining the course. He thought this would be a good way to make use of the materials.

"Adding this organic matter helps drainage, and because compost isn't as tight as clay, it helps keep soil looser," he says.

Diel's composting of grass clippings and leaves comes at a minimal cost for a course that has a \$275,000 annual maintenance budget, of which about \$5,000 is spent on soil amendments. The composting happens

onsite, so the only expense comes from rolling the pile over during the process to keep the microbes active, he says.

Diel purchases the topdressing sand from a sand and gravel supplier located 35 miles away from the club. He purchases a blend the supplier makes specifically for golf course construction. The supplier typically hauls a couple loads to Quail Creek during spring and fall.

"We probably purchase 50 to 75 tons a year, and spend about \$11 to \$12 a ton," he says.

Topdressing greens lightly with sand takes



Topdressing greens with sand builds the soil system, allows for better drainage and restrains compaction. Photo: Redexim Charterhouse

two crew members five to six hours. It takes them three hours to lightly dust the greens with sand, then they brush it in. When applying heavy topdressing the process takes all day because they're putting down much more material.

The composting application is only applied to new construction or areas that need to be renovated. The process involves working an area down to a grade they want with yellow clay, applying a 2-inch layer of compost, applying 4 to 6 inches of soil and then seeding the area.

"We've been doing a lot of small projects pretty frequently, but no major overhauls," Diel says.

Another part of Diel's soil amendment process includes conducting soil tests every three years. He's in a routine where he tests a third of his greens, tees and fairways every year so every third year they're all getting checked.

"It's a way for us to monitor trends of various nutrients and adjust our fertility to keep us moving where we want to go," Diel says.

Superintendents looking into soil amendments should ask themselves what kind of problem they have and what a particular product is going to do for them – not just in the short run but in the long run, Diel says.

"They should think about how this process is going to affect things in the long run because once you get in and start changing the soil, that effect is going to stay with you," he says. **GCI**

At Quail Creek Country Club, compost is mainly used for building or renovating areas such as tees or bunker surrounds. Photo: PICSUNV | istock.com

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- STEVE DIEL

