

Bring On the Baking Soda

Two Ohio superintendents discovered an innovative solution to moss problems on their greens after other solutions produce mixed results

BY FRANK H. ANDORKA JR., MANAGING EDITOR

The hardest part of controlling moss on greens is that there's no sure-fire way to eradicate it. Some superintendents use iron sulfate. Others swear by ammonium sulfate or copper sulfate. The use of Ultra Dawn (the dishwashing soap) has spread quickly to many parts of the country. Unfortunately, there's no one method that works perfectly for all superintendents.

That's what spurred superintendents Tom Vogel and Rob Miller to try a radical solution as moss populations expanded on their course's greens.

Vogel, certified superintendent at Portage CC in Akron, Ohio, had persistent moss problems on about six greens. His treatments ran the entire gamut of the methods mentioned earlier, and he still couldn't get a consistent kill that would leave the greens undamaged.

"I wasn't getting as much control as I needed, and the members were starting to ask questions," Vogel says. "After having met with limited success with other methods, I decided I needed a new solution."

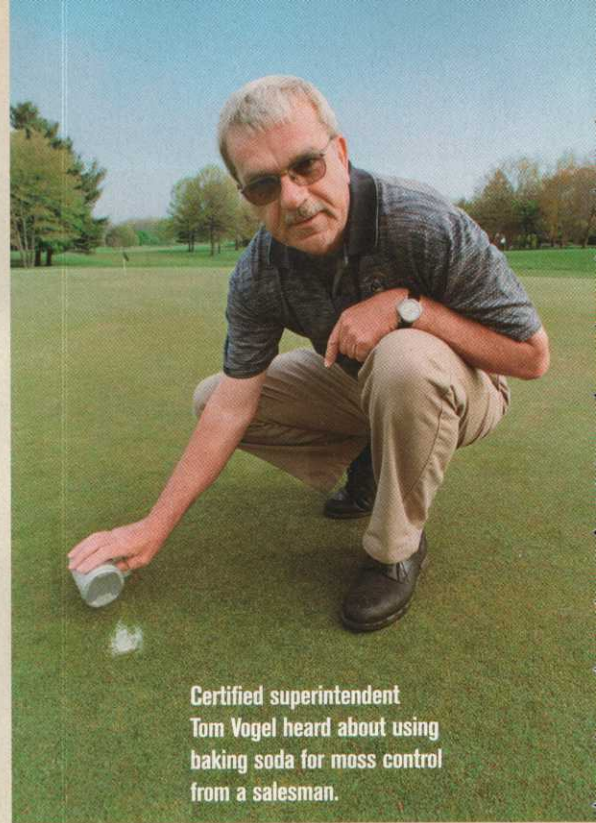
Down the road at Glenmoor CC in Canton, Ohio, superintendent Rob Miller came to the same conclusion about the hard-to-eradicate moss on two of his greens. "We could see the moss starting to expand, and we knew we needed to stop it in its tracks," Miller says.

Problem

Conventional moss-control strategies, such as copper sulfate and iron sulfate, weren't working on two Ohio courses. The popular Ultra Dawn strategy proved difficult to manage in the state's climate. Meanwhile, the moss population at both courses continued to grow.

Solution

The two courses, independent of each other, stumbled on the idea of using baking soda to burn the moss out of their problem greens – with results both superintendents refer to as "remarkable."



Certified superintendent Tom Vogel heard about using baking soda for moss control from a salesman.

The problem

Moss poses a complex problem for superintendents because it can live under duress for long periods of time, according to Tony Koski, an extension turf specialist at Colorado State University in Fort Collins, Colo. Moss is a bryophyte, meaning that unlike turfgrass it has no roots or vascular system, reproduces vegetatively or by spores, and can survive long periods of desiccation. These factors taken together make it hard to design a fungicide to eradicate it.

At the same time, the problem has reached epidemic proportions in recent years because more intense turf management has created perfect conditions for moss survival, Koski says. These practices include low mowing heights, lower nitrogen rates on greens, discontinued use of mercury-based fungicides and use of finer topdressing sand, which inhibits good drainage by creating a perched water table.

Koski says his research shows that the Ultra Dawn was the most effective of the several methods he tested. (Ultra Dawn is most commonly applied in a spray form at a ratio of 4 ounces/gallon of water, and superintendents should drench the moss with the solution.)

But Vogel, who tried the Ultra Dawn treatment on his problem greens, says it's tricky to apply.

"You have to get the timing exactly

right, and the weather conditions have to be ideal for it to work properly," Vogel says. "It has to be a completely sunny day, but it can't be too hot [*Editor's note: Koski says that Ultra Dawn should be applied between 55 degrees F and 80 degrees F in full sunlight.*] For some of us, that makes it tricky to do in the summer."

Miller hoped to burn his moss out of his greens and tried the Ultra Dawn and hydrogen peroxide treatments, but neither gave him the control he wanted.

"You'd make the application, and it looked like it worked," Miller says. "It would turn the moss brown, and it would appear to be dead. But two weeks later, it would be back, and it was stronger than it was before you tried to kill it."

Vogel was nearing his wits' end when a salesman from J.R. Simplot came to visit. As they sat in his office discussing the salesman's products, Vogel mentioned his moss problem. The salesman paused for a moment, and then told Vogel he'd heard that some superintendents were having success with an entirely new method of moss control: baking soda. Though he wasn't sure how he was going to get it out on his greens, Vogel

thought to himself, "This idea is so crazy, it just might work."

Less than 25 miles away, Miller was also coming to the same conclusion.

"It kind of came to me happenstance when I was talking it over with my assistant, Jerry Cox," Miller says. "He had heard about the baking soda idea, and suggested we try it. It couldn't work any worse than anything else we'd tried."

The solution

Vogel says he played around with the right amount of baking soda to apply during last summer's brutal heat. Since he didn't have any details about an appropriate rate, he experimented with it.

"I was excited, but I was scared at the same time," Vogel says. "The biggest question I had to answer was how to get the baking soda from the box to my greens."

First, Vogel tried to use a saltshaker, but the holes were too small. Then one day while Vogel watched the cook in the course's restaurant shake powdered sugar on to each delectable order, an inspiration came to him.

Vogel took one of the myriad powdered-

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TOM VOGEL
CERTIFIED SUPERINTENDENT
PORTAGE CC
AKRON, OHIO

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Real-Life Solutions
on page 88.**

Vogel (center) discusses his moss control strategy with two fellow staff members at Portage CC in Akron, Ohio.

Real Life Solutions: Moss Control

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sugar shakers from the kitchen, filled it with baking soda and covered 90 percent of the holes. Then he took it out to his greens and shook it twice. The baking soda landed on the moss, but also landed on the turf surrounding it, causing some phytotoxicity. "Two shakes was far too much," Vogel says.

After more trial and error, Vogel learned the best way to apply the baking soda is to put the powdered-sugar shaker on its side next to the moss patch and gently tap the shaker, allowing a puff of baking soda to land gently on its surface.

"It sucks the moisture right out of the moss," Vogel says. "We had what we considered a severe problem, and we got

100-percent control with a little bit of product."

Miller, on the other hand, applies his baking soda two ways. First, he uses a saltshaker for smaller moss spots the size of a quarter or less. For larger moss patches that are inextricably intertwined in the turf, Miller concocts a less "hot" application by mixing 6 ounces of baking soda per gallon of water and applies it with a backpack sprayer.

"It took us a while to figure out what rate worked best for us, but more than 6 ounces was too hot," Miller says. "On the other hand, if you go any lower than that, you won't have the desired effect."

Miller says he also does spot applications with spray bottles, but he warns that the mixture must be shaken periodically to keep the baking soda in suspension. He also raves about the length of control, which can be anywhere from two to four months. "Compared to some of the other products I've used, the control is amazing," he adds.

Outcome

Vogel says he was so pleased with his experiment last summer that he's planning on doing it again this year, possibly suspending it in water like his colleague Miller did. The two downsides — that baking soda is not labeled for turf and the mild phytotoxicity it causes — are outweighed by the positives, which include no weather restrictions on its application and the long-term moss control it provides.

"Once I told my members not to worry about the slight yellowing of the turf in the patches where the moss had been, they were delighted we were controlling the problem," Vogel says. "You're not handcuffed by the calendar anymore."

Miller adds that he plans to apply baking soda to problem greens in the spring and fall this year.

"You always see complete control when you put it out," Miller says. "It's the consistency of the process that I like. My comfort level with baking soda is high." ■

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