

TURFGRASS TRENDS

DOLLAR SPOT CONTROL

Rock and Rolling

This well-studied practice can help reduce dollar spot on greens, among other things *By Thomas A. Nikolai*

In the 1970s, several rock bands gained fame with the release of live albums. Kiss gained the national spotlight when Gene Simmons yelled to the crowd, "I want to rock and roll all night and party every day," prior to initiating the song on the 1975 "Alive" album. Cheap Trick gained stardom with the release of "At Budokan" in 1978 primarily based upon the distinctive manner in which singer Robin Zander states, "I want you to want me."

But my favorite catch phrase from a live concert album can be heard on the regionally successful concert album, "Live Bullet," which was recorded in Detroit's Cobo Arena in 1976. Bob Seger and the Silver Bullet Band weren't well known but they knew how to excite the hometown crowd. Seger tells his audience, "I was reading in Rolling Stone where they said Detroit audiences are the greatest rock-n-roll audiences in the world." The crowd erupts and Bob bellows, "I thought to myself, I've known that for 10 years!"

That line came to my mind when *TurfGrass Trends* asked me if I knew enough about lightweight rolling and dollar spot to write an article on the subject. Personally, I've performed more lightweight rolling research than everyone else combined. I'm not bragging; heck, maybe I'm even conceding my limitations. But in any event, it's a fact. I initiated lightweight rolling research at Michigan State University in 1993 and haven't missed a year performing research on the mechanical practice ever since.

Early on

In the 1990s, the initial objective of lightweight roller research was to gather data to determine if the mechanical practice was safe. Concerns included the limitation of rolling frequency due to the increased possibility of compaction and the more prevalent movement of diseases that are spread by mechanical means.

In 1995, I began to make a peculiar observation that, when research greens had been rolled three times a week (every Monday, Wednesday and Friday following mowing), they had less dollar spot compared to plots that were not rolled. I believed this observation to be an oddity, and I was relatively certain I'd never make similar observations in the future. However, in 1996 I made four dollar spot counts, and on every outbreak the rolled plots had less dollar spot than non-rolled plots.

This probably would've been the end of the story but, because of generous funding by the United States Golf Association, the study continued through the summer of 2000. Every time a dollar spot outbreak occurred over the six-year period, rolled research greens had less dollar spot compared to nonrolled plots. It's certainly noteworthy the study took place on three different root zones (two primarily sand

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greens meeting USGA specifications and the third on a native sandy clay loam).

Conclusions from rolling three times per week (or every other day) after mowing include:

- **Noticeably increased green speeds every day.** From studies performed after 2000, we learned that if the thatch/mat layer on a putting surface is greater than 0.5 inches there is a noticeable drop-off in green speed the following day.

- **No increases in compaction** given the plots were on a sand topdressing program. If the plots were not on a sand topdressing program, I don't know what the results would be, but it's certainly worthy of consideration.

John Fulling, certified golf course superintendent of Kalamazoo Country Club, rocks with his band the Bronk Brothers every night. Fulling also rolls his course's greens every day.

- **No decreases in water infiltration** — again, given the plots were on a sand topdressing program.

- **Significant decreases in dollar spot.** This takes several months to a year to become incredibly noticeable on research plots.

- Additionally, the more sand in the root zone, the greater the reduction in the amount of dollar spot.

I originally published the results in a scientific journal in 2001 and, understandably, many of my peers seemed skeptical. In 2002, I gave a presentation on the subject at the Golf Course Superintendents Association of America's annual convention in Orlando, and several roller companies were so delighted that they have continued to fund lightweight rolling research to date. Support from those companies (and the Michigan Turfgrass Foundation) has allowed us to study the effects of various rolling/mowing frequency programs over the years, including:



Bayer Environmental Science

QUICK TIP

Flexible pre-emergence weed control is a bonus for golf course superintendents. Ronstar herbicide is about as flexible as a product gets. It controls a variety of annual broadleaf and annual grass weeds and can be used for long residual pre-emergent weed control, even in areas where turfgrass roots are already weakened due to pest, mechanical or other damage. In addition, Ronstar is available as a liquid formulation, as a wettable powder, as a granular formulation and as numerous fertilizer/herbicide formulated products. It also can be used on a variety of established perennial turf, such as bluegrass, bentgrass, bermudagrass, buffalograss, buffalograss, perennial ryegrass, St. Augustine, sea-shore paspalum, tall fescue and zoysiagrass.



PHOTO COURTESY: JOHN FULLING

■ **Alternating mowing and rolling on a daily basis.** This mowing/rolling frequency results in daily green-speed measurements equivalent to just mowing every day and improved turfgrass wear tolerance. Obviously, this program can also save money. However, there's no reduction in the amount of dollar spot observed with this program compared to mowing alone. This can be a very nice economic option, especially during times of the year with the greatest heat stress.

■ **Mow and roll every day.** We certainly aren't considering saving money with this option. However, results indicate consistent green speeds from day to day, the possibility to raise mowing heights for better turfgrass health and wear tolerance, and significantly more dollar spot control than mowing every day and rolling every other day.

■ **Roll every day and mow every other day.** That's right, rolling every day and mowing every other day. Of all the mowing/rolling frequencies I've researched, this one results in the most consistent green speeds from day to day — very good wear tolerance compared to mowing alone, and better dollar spot control than mowing every day and rolling every other day. Obviously, there could also be some economic saving with this program as well.

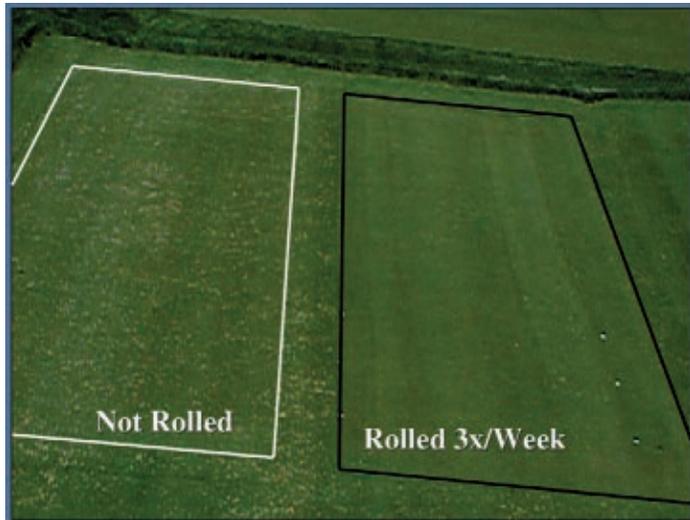
With all the programs listed above, I've never observed an increase in compaction. However, all my research plots have been on frequent sand topdressing programs (every two to three weeks).

An additional caution: When I rolled plots every day during the week, I always used the lightest rollers available on the market (Tru-Turf, DMI Speed Roller and True Surface vibratory rollers) mainly because they have been continuous supporters of my research.

I don't mean to imply that rolling seven days per week with a roller heavier than 550 pounds would result in compaction and therefore weaker turf; I'm just cautioning that we don't know if heavier rollers used daily would result in compaction or not. This would include all electric rollers.

Why does this work?

The obvious question is, "Why the reduction in dollar spot?"



In 1995, Thomas Nikolai noticed that when research greens were rolled three times a week and were followed by mowing, they had less dollar spot than greens that weren't rolled.

To be honest, the answer still eludes us. Michigan State University graduate student Paul Giordano, under the guidance of Joe Vargas, Ph.D., a MSU turf professor, is trying to determine the cause of the decrease.

During the late '90s I had several superintendents in my state of Michigan tell me, "I don't care what your data says, there's no way I'm ever going to let one of those machines on my greens." Every one of those individuals has now been rolling his greens for at least three years and all them swear by the practice — and dollar-spot reduction, too.

The question is, as asked by Peter Frampton on "Frampton Comes Alive" in 1976: "Do you feel ... like we do?"

Thomas A. Nikolai, Ph.D., a former superintendent, is a turfgrass specialist at Michigan State University. To discuss rolling greens or the history of rock and roll, contact him at nikolait@msu.edu.

ACKNOWLEDGEMENTS

I would like to thank the Michigan Turfgrass Foundation for its continued and generous support as well as the USGA and the PGA Tour for helping out with lightweight rolling research.