

Stacie Zinn Roberts



A pass with the Air2G2 over stressed areas, such as the greens perimeters, at The Club Pelican Bay in Naples, Fla., relieves compaction without troubling players, according to superintendent Robert Bittner, CGCS. Photos courtesy of Air2G2

(operations)

Unconventional wisdom

Superintendents who've departed from the tried-and-true have discovered improved ways to manage their turf.

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In Marble Falls, Texas, Jamie Kizer has core-aerified the greens on his 18-hole golf course only once in the past seven years. In Madeira Park, British Columbia, Jason Haines uses so little fertilizer that his August weekly application cost just \$10.20 for nine holes. In suburban Philadelphia, former superintendent Scott May tells the story of how he tested a crazy idea on his golf course — that perhaps sunscreen might not just be helpful to people, but to turf, too — and it prompted him to quit his day job and start his own company.

All of these professional turfgrass managers are risk takers, and all of them have seen some level of success because of their willingness to buck conventional wisdom — to try something new. That's not to say the tried-and-true isn't still valid, but as these superintendents have shown, sometimes taking a chance pays off.

A new approach to aerification

When Jamie Kizer, a third-generation golf course superintendent with 22 years in the business, took the job as superintendent at Hidden Falls Golf Club at Meadowlakes in Marble Falls, Texas, he had to rethink everything he knew about golf turfgrass management. The 18-hole course with 40-year-old greens operates on a \$250,000 annual budget, which includes the salaries for Kizer and his four-person crew. Kizer quickly realized he had little to no budget for chemicals or granular fertilizer. So instead, he looked to the past — to the way his grandfa-



Veteran superintendent Jamie Kizer found he could stretch his budget at Hidden Falls GC in Marble Falls, Texas, by fertilizing greens with compost teas and aerifying with subsurface lateral air injection. Photo courtesy of Jamie Kizer

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ther Roy Kizer (for whom the Roy Kizer Golf Course in Austin, Texas, was named) used to do things, focusing mostly on organics.

“I had to change my whole management strategy and went into a biological program through compost teas,” Kizer says. He began brewing his own compost teas to stimulate microbial activity in the soil, and he hasn’t applied any fungicides or insecticides in more than five years. Only once in the past seven years has he core-aerified because the budget wouldn’t allow for contractor services or sand to fill aerification holes, or for the lost revenue from closing the course to play during the process.

About a year ago, Kizer found room in the finances to invest in a new type of aerification machine, called the Air2G2, that inserts tines into the ground and forces air laterally out into the soil profile at 7 inches and 12 inches below the surface. The forced air fractures the soil underneath the turf with little to no disruption of the playing surface.

Before recently leaving Hidden Falls to become the Texas distributor for Trimax Mowing Systems, Kizer used the Air2G2 once a month to inject air into the soil column and aerify without suspending play. “What happens is when the air is injected into the soil, the microorganisms will just explode. They come alive once they get air,” Kizer says. “It’s a unique tool, plus there’s no disturbing golfers and there’s no cleanup. It fits my program of what we are doing at this course. Our soils are very alive.”

“The conventional wisdom is that aeration is accomplished through punching holes in

the turf. We aerify by injecting air into the soil profile up to 12 inches deep,” says Todd Jones, general manager of GT AirInject, manufacturer of the Air2G2 machine. “The Air2G2 is true aerification. In the manner in which we inject the air into the soil profile, compaction is relieved immediately, porosity is increased immediately, and it forces an immediate gas exchange. It releases the bad gases such as carbon dioxide that are created under the soil. The ancillary or long-term benefits are increased root growth, increased microbial activity and healthier turf.”

In Naples, Fla., Robert Bittner, CGCS, director of golf course operations at The Club Pelican Bay, still core-aerifies in spring and fall. However, during the busy winter season, when most of the club’s members have fled snowy weather up north to enjoy winter golf in Florida, he’s had few options to relieve compaction. Aggressive methods such as verticutting or core aerifying drew member complaints about disruption of the putting surface. Before the Air2G2, Bittner’s only real alternative was to send crew members out with pitchforks to manually relieve compaction.

“We use the Air2G2 surprisingly a lot in fairways, along cart paths — anyplace showing compaction or drainage issues, we use it and it seems to help,” says Bittner, a 34-year GCSAA member. “The Air2G2 does a better job than any other aerating unit we’d use.”

Bittner has trained three crew members to use the machine whenever they have time to take the Air2G2 out to relieve compaction on the green perimeters and other stressed areas.

What really sold the Air2G2 for The Club Pelican Bay, though, was the reaction of the club’s general manager after a demo of the machine three years ago. Bittner says there had been a problem every summer with a 15,000-square-foot swampy area in front of a green where “you could sink up to your ankles.” Because the expanse stayed too wet to run traditional aerifiers through it, again crew members with pitchforks did their best to manually punch holes in the soil. After one aerification treatment with the Air2G2, the area was dry enough to walk on three days after the test. Bittner says his GM asked, “What did you do there?” Shortly thereafter, the club owned the machine.

Rethinking fertilizer application

Superintendents who adhere to standard practices apply fertilizer in spring and fall. But



Left: Jason Haines, superintendent at Pender Harbour Golf Club in Madeira Park, British Columbia, experimented with timing and quantity of fertilizer applications to come up with a formula for his course that resulted in improved turf and environmental practices. Photo courtesy of Pender Harbour GC

Right: Scott May took a self-described “silly idea” and turned it into Turf Screen, essentially a sun screen for turfgrass plants. Photo courtesy of EPIC Creative



Jason Haines, superintendent at the nine-hole Pender Harbour Golf Club in Madeira Park, British Columbia, employs a different methodology, applying fertilizer only when the weather is warm enough for the plant to be actively growing.

Haines adopted this new program after reading a paper published in 2013 by Micah Woods, Ph.D., of the Asian Turfgrass Center, about using temperature to predict turfgrass growth potential and estimating turfgrass nitrogen use. When Haines encountered the paper, he said it was as if a light bulb flashed on above his head.

“It’s all based on timing,” says the one-year GCSAA member. “If the grass isn’t growing because it’s too cold to grow, I don’t force it to grow. I’m not really guessing. There’s a math formula that is helping me decide what rates I go out with. From October through May, I apply virtually no fertilizer. I’m still applying it, but in super-small quantities. I apply everything in liquid form, granular in four years. I use soluble fertilizers that are inexpensive, and I apply small amounts of fertilizer.”

Haines applies 90 percent of his fertilizer from June through September. He’s dramatically reduced his nitrogen applications from about 4 pounds of nitrogen per 1,000 square feet to about 2½ to 3 pounds, or about 15 pounds of fertilizer per acre, total. In August, his weekly fertilizer application cost \$10.20 for his 1 acre of greens.

“I’ve seen no real drawbacks — zero negative consequence — for me fertilizing the new way,” Haines says. Less disease has been among the benefits, and in 2015 Haines was able to make a 30 percent reduction in the

cost of his environmental pesticides, and was on track to do it again for 2016. The course had previously never gone more than two months without a fungicide treatment. “We are matching the growth rate and the environment,” Haines says. “I don’t know if it’s common sense. Well, it is — but it’s not common, really, yet. But it will be.”

Sunblock for turf

One day back in 2006, while he was working as the superintendent at Manufacturers Golf & Country Club in suburban Philadelphia, Scott May, who’d spent 12 years maintaining golf course turf, hit upon what he calls a “silly idea.” The thought was that if people benefited from sunscreen, why wouldn’t plants? Or, more specifically, why wouldn’t turfgrass plants?

May tested the ingredients of sunscreen (zinc oxide and titanium dioxide) on his golf course and saw significant results — less afternoon wilt, less localized dry spot and healthier turf. When he combined the ingredients with other turf products, those products seemed to work better, too.

It took four years of research and testing for May to bring his product, Turf Screen, to market in 2010, and at first, he was met with skepticism from his fellow superintendents. “I started talking about UVB damage to turf and got blank stares. People thought I was off my rocker,” May says.

These days, however, May’s business is thriving, with orders coming in from superintendents all over the country. May says Turf Screen scatters and absorbs harmful UVB radiation, letting in beneficial sunlight wavelengths critical for photosynthesis. The product is sprayed foliarly and costs about \$30 to \$40 per acre. For the investment, May says golf course superintendents save on water costs and employee time spent syringing dur-



Bob Becker, CGCS at Scioto CC in Columbus, Ohio, took a unique approach to creating firmer, faster greens at his facility, building new greens with a mix of 80 percent sand, 10 percent soil and 10 percent porous clay from Profile Products. Photo courtesy of Bob Becker

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ing the heat of the day. May, a graduate of the Rutgers University turfgrass program, says he was never taught about UVB turf damage in school. "But when you do the research, it makes sense," he says.

A new topdress mix

When the greens were rebuilt at Scioto Country Club in Columbus, Ohio, seven years ago, superintendent Bob Becker, CGCS, says his goal was to give the membership what they really wanted: fast, firm greens. He asked the members to name other clubs they'd played that had the firm greens they desired, and what he found was that the firmest greens were on a course with what Becker calls a "dirty mix" of sand and soil in the USGA profile. The 19-year GCSAA member thought that if he mixed straight sand with soil, he'd get "concrete," and that would certainly produce firm, fast greens, but his fear was that neither water nor fertilizer — nor turfgrass roots, for that matter — could penetrate a greens profile like that. So, instead, he recommended the greens be built with a mix of 80 percent sand, 10 percent soil and 10 percent porous clay from Profile Products (Profile Porous Ceramic [PPC]).

The PPC particles create porosity and capillary space while holding moisture in the root zone, says Randy Hamilton, western marketing development manager for golf, sports turf and landscape for Profile Products. Hamilton says adding PPC into a USGA greens mix improves the balance of capillary and non-capillary porosity in the root zone, improves infiltration rates compared with 100 percent sand, and improves ability to flush the root zone.

Other benefits, he says, are reduced buildup of organic material for firmer greens, and reduced compaction, water usage (up to 20 percent), fertilizer applications (up to 25 percent) and localized dry spot.

It worked. The greens at Scioto were fast and firm enough to host the 2016 U.S. Senior Open last August, and to satisfy Becker's membership. "They performed exactly as a USGA golf green is supposed to," Becker says.

Conventional wisdom in the golf industry preaches that the mix used in the USGA-recommended greens mix should also be used for topdressing. In Becker's case, a mix of sand, soil and PPC as a topdress medium was impractical — at least, the soil component — and using straight sand (the most common form of topdress material) was objectionable. "I didn't want to build a new green on top of the old one," he says, which is what he thought would happen if he topdressed with sand alone. Instead, Becker uses a light topdress mix of 80 percent sand and 20 percent PPC.

Hamilton says his company is further challenging the status quo by encouraging the use of PPC mixed with sand as a topdress medium, even for greens built only with straight-sand USGA recommendations. The idea, Hamilton says, is to remediate the USGA greens mix by infusing it with the PPC particles. He recommends backfilling aerification holes with the sand/PPC mix, or using dry injection to move the mix down into the root zone. Hamilton says these methods are actually more beneficial to the green profile than light topdressings on the surface of the putting green.

Fresh perspectives

Examples such as these aren't to suggest that all conventional wisdom is incorrect or that superintendents must change the way they think about every golf course management practice. Rather, these stories illustrate how some creative minds in the industry have taken a look at what superintendents do from a slightly tilted angle, and how that can be a good thing. Change does come slowly in golf, however. "Golf course superintendents are pretty skeptical people," May says. "We want to be shown."

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