

Washout Weapon

Superintendents nationwide increasingly are beginning to run their irrigation systems remotely through new technologies available on the market. But Dan Meersman, Director of Grounds at The Philadelphia Cricket Club, isn't stopping there.

Four years ago, Meersman developed and patented the Matrix Bunker System. The method of constructing and lining golf course bunkers uses a two-and-a-half-inch layer of porous asphalt between the bunker sand and the drainage stone, allowing unlimited drainage while preventing washouts.

"I was at an arboretum and I was looking at their parking lot, talking to their director on how it functioned," Meersman says of how he got the idea. "And I started to work on the material and change the spec until it worked out perfectly for a golf course."

Meersman sought a permanent solution to problems he was having with his bunker liners. "I was tired of bunkers in general," he says. "I wanted to be able to fix it one time and be done with it. I knew this would be a great fix. I can't foresee a time when I will have to change up my liner ever again."

At The Philadelphia Cricket Club, a 45-hole facility, both 18-hole courses have the Matrix Bunker System, while the nine-hole course will have it in place by October 2013. The system's selling well in Australia, and Meersman says he's getting positive feedback from the few U.S. courses using it.

"It's fun to get the comments," he says. "Guys shoot me an email after a two-inch rain and say, 'I can't believe it didn't wash out.'" —BG



Dan Meersman patented a system he says prevents bunker washouts and flooding.

irrigation head. It eliminates the satellite box as an intermediary communication."

Shaffer, too, says he is impressed by that aspect of it. "And the ease of adding additional sprinklers is just crazy good," he says. "It'll take an adjustment for some people to get used to, but it'll be worthwhile in the long run."

Meersman marvels that he'll be able to operate irrigation on two separate campuses through one central computer and mobile apps.

"We're looking at products as far as what's going to set us up for the next 50 years," Meersman explains. "The club's been around since 1854, and doing this significant amount of work, you're going to be using that technology for the next 15 to 20 years."

Ultimately, say superintendents who use the newest irrigation technology, the investment is worth the risk and worth the money.

"I'm no longer worried," Kachmarek says. "It used to be I knew the property well enough that I could drive around every morning and say, 'OK, something's not working over here.' And the reason I knew that was the turf was dead. And then people were like, 'Why is Joel letting turf die?' And the reason was there was only so much I could do every day."

But with the new technology of today, Kachmarek says, "the end result is just good quality, uniform golf conditions." ■



THE TURFCO CR-10 MAKES IT HAPPEN!

Whether you're topdressing your fairway, renovating bunkers or relocating material, the Turfco® CR-10, with a four cubic-yard hopper, is the workhorse you've been looking for. Its patented three-position switch, cross-conveyor flow control and self-cleaning hopper make it the most effective material handler available. And now the CR-10 is available with WideSpin™ technology—allowing you to deliver light or heavy topdressing applications at unprecedented widths and depths. All this—plus a three-year warranty. The CR-10. Don't start a project without it.

Call 1-800-679-8201 for a FREE on-site demonstration or video.

WWW.TURFCO.COM

TURFCO

THE LEADER. SINCE 1961.



FERTILIZING

It's the middle of the night at Rustic Canyon GC in Moorpark, Calif. The members of the Rustic Canyon maintenance crew are at home, asleep in their beds. The air is still. In the distance, a coyote calls. But on the fairways, the swish-swish of the irrigation system can be heard. The course is being fertilized in the moonlight.

BY THE LIGHT OF THE MOON

For the past six years, Rustic Canyon superintendent Jeff Hicks has used fertigation to spoon feed his golf course. He mixes a liquid fertilizer on site and injects it using a specially designed pump system that hooks into the irrigation system. As the irrigation system runs overnight to irrigate the course, each droplet of water delivers nutrients onto it.

"I blend my own fertilizers, turning granulars into soluble. It's very cost effective," Hicks says. "We may put in 500 pounds of ammonium sulfate, 500 pounds of ferrous sulfate, mixed into 500 gallons of water, and that will get injected out on the course over the course of a couple of weeks. That's one blend we'll do. It's going every day, watering fairways, greens, tees, roughs. It goes all of the time."

Types of systems

Michael Chaplinsky is the owner and president of Turf Feeding Systems, a fer-

FERTIGATION IS A VALUABLE IRRIGATION TOOL FOR SUPERINTENDENTS, BUT IT'S NOT FOR EVERY COURSE. BY STACIE ZINN ROBERTS

tigation equipment manufacturer based in Houston, Texas. The company's fertigation systems range from \$5,000 to \$15,000. Over the past 25 years, Chaplinsky says, he's installed more than 2,000 systems at golf courses around the world.

Fertigation is a sustainable practice, he says, one that "is nothing more than a very precise, automatic way to feed the golf course through the irrigation system."

John King spent 12 years as a superintendent in New Mexico. For 10 of those years, he used fertigation at five courses he managed in Sante Fe and Albuquerque, as well as two courses at the University of New Mexico. Now, as turf products sales-

person for Ewing Irrigation, King often works with superintendents to help them determine whether or not fertigation is right for their courses.

Ewing sells fertigation systems from Turf Feeding Systems, Inject-O-Meter and EZ-FLO. King says that the best systems will have a proportional monitor that matches the flow of the fertilizer, or other chemical injection, with the flow of the water to ensure a proper mix. King says that those systems, including the tank, monitor and injection pumps, start at about \$7,500.

Continued on page 24

Spoon Fed

Continued from page 23

The hard sell

“The benefits of fertigation are you get spoon feeding so you don’t get an excess or flush of growth. You spoon feed all the time, which is much healthier for the plant overall, rather than putting down a large amount of fertilizer that may be more than the plant can use at one time,” King says.

“You get fertilizer applied where you get water applied,” he continues. “So, if you have accurate application of your water, you also have application of your fertilizer. You can also inject multiple

products simultaneously with some fertilizer injection systems.”

In fact, superintendents can inject a mix of wetting agents, biologicals, fertilizer and acids through fertigation.

“You can buffer your salts and bicarbonate in the water through injection,” King says. “Injection is often referred to as fertigation, but sometimes it’s just simply injection. It’s not necessarily a fertilizer. Sometimes you can inject an acid. There are safe acids that can be injected through the irrigation system to help you with water quality issues.”

Jeff Langner is a brand manager for

uniformity. If your system is not efficient, if it doesn’t have good distribution uniformity, then your fertilizer application through injection is going to be off target or uneven. Your injection will only be as good as your system is, that’s for sure.”

At Rustic Canyon, Hicks says one of the challenges he faces by fertilizing through fertigation is that he “can’t control where it doesn’t go.” When he irrigates, whatever is being pumped out through the irrigation system goes everywhere, including to greens, tees and fairways. Hicks says some of his fellow superintendents tell him they’re hesitant



“THE BENEFITS OF FERTIGATION ARE YOU GET SPOON FEEDING SO YOU DON’T GET AN EXCESS OR FLUSH OF GROWTH. **YOU SPOON FEED ALL THE TIME, WHICH IS MUCH HEALTHIER FOR THE PLANT OVERALL,** RATHER THAN PUTTING DOWN A LARGE AMOUNT OF FERTILIZER THAT MAY BE MORE THAN THE PLANT CAN USE AT ONE TIME.” — JOHN KING, EWING IRRIGATION

Cover and Protect Bridges with BridgeRunners

Eliminate costly maintenance or repair ... or “resurface” damaged areas. Excellent dry and wet traction. Genuine rubber in 3’, 4’ or 6’ widths in lengths up to 16’, with optional interlocking tabs for longer installations.



Linear Rubber Products
1-800-558-4040
www.rubbermats.com



Warehouse Direct Pricing!

- BridgeRunners
- Landscape Pavers
- Locker Room Flooring

Profile Products, based in Chicago. He says his company makes a product called Aqua-pHix, a buffered chelated acid that can be injected into the irrigation system through fertigation to help balance pH in the soil and improve water quality.

King adds that reduced labor costs are another benefit of fertigation.

“There are labor savings that you realize with fertigation or injection, because you’re not having to put a person out on a tractor with someone else loading them,” King says. Hicks agrees.

“There’s a huge cost savings on labor,” he says. “We do not get the rapid growth we’d get with a granular. It’s a more steady, slow growth,” he says.

Nothing’s perfect

But fertigation may not be the right choice for every golf course. As effective as it is, it does present challenges.

“Not everybody has a good enough irrigation system to inject,” Hicks says. “When I say a good enough irrigation system, I’m talking about distribution

to fertigate because they can’t isolate their greens from the fertigation process.

“When I’m fertigating, I don’t have a separate system. I would have to put out 300,000 to 400,000 gallons of water to get the fertilizer out of my lines,” Hicks says. But the inability to isolate the application is not enough to deter him from fertigation.

“The way I look at it, most of the fertigation applications are very minimal,” Hicks says. “I just lower the rates on my foliar applications on the greens. We do soil sampling and tissue testing. It’s a constant monitoring.”

King offers another word of caution: “Things can go wrong. It’s often an unmonitored process while it’s taking place. It’s happening at night when you’re irrigating your golf course.

“You could blow a line on your injection system inside the pump station (and end up with a pump room full of fertilizer on the floor),” he continues. “That happened to me more than once.”



The G1000B Fertigation System from Turf Feeding Systems sells for less than \$5,000.

At Rustic Canyon, Hicks still does granular fertilizer applications in the spring and fall for a burst of growth after aeration. He also does a foliar spraying of micronutrients on his greens, a process that he wants to isolate so he does not send that out through fertigation.

Ewing's King says it's a good idea to check the status of the irrigation system prior to injecting anything into the lines. "Don't set it and forget it," he says. "Check your equipment every time. Make sure you have proper head rotation on critical areas like greens. Make sure that your injection lines from your tank feeding into your main line are in good shape. Make sure your injector itself has been set up the way you want it for the proper rate.... There is still some labor involved in preparation, in mixing your tank or hooking up your barrels, but ultimately it's a better labor savings than what you would have if you sent out two

to three people to do a granular fertilization on the golf course."

Hicks says although he's happy with his fertigation system, fellow superintendents need to assess their own facilities before installing a system. "For me, it has worked well because we do not have a large budget," he says. "With our sandy soil conditions and low labor, fertigation has worked really well. In other climates, it would really depend."

Hicks notes that the irrigation source, for example, could weigh heavily on the decision on whether or not to fertigate. "Are they pulling from multiple lakes where they would need multiple injection points?" he asks. "I have one inlet coming in and I'm not pulling from a reservoir, so it's simple. It depends on the situation." ■

Stacie Zinn Roberts is president of What's Your Avocado?, a writing and marketing firm based in Mount Vernon, Wash.

Word to the wise

"Every superintendent should know that fertigation is supplemental to granular applications. It is not something that can stand alone," King says. "You don't end up with any reserves in the soil because you're putting it out in very small increments, spoon feeding."

The **MISSING FORM OF NITROGEN** that Your Turf **REALLY WANTS** and doesn't have!

- ➕ **CONTAINS 14% AVAILABLE NITROGEN** FROM A VEGETATIVE SOURCE!
- ➕ **100% SOLUBLE & WILL NOT CLOG** DRIPLINES NOR CREATE BIOFILM!
- ➕ **WILL NOT CAUSE A SALT BUILDUP** - NO NITRATES OR UREA AT ALL!
- ➕ **IMMEDIATELY FIXES DEFICIENT NITROGEN LEVELS** THROUGH FOLIAR APPLICATION!
- ➕ **DOES NOT ATTRACT INSECTS, PESTS OR ANIMALS** OF ANY KIND!
- ➕ **CONTAINS 17 OUT OF 20 AMINO ACIDS** WHICH PROVIDES OTHER VITAL PLANT NUTRIENTS TO SOIL MICROFLORA!
- ➕ **THE ONLY FORM OF AVAILABLE NITROGEN THAT ALSO BUILDS SOIL TILTH & HUMUS!**
- ➕ **LOW pH (3 to 4) DECREASES THE NEED FOR WATER pH TREATMENT!**
- ➕ **COMPATIBLE WITH ANY OTHER KIND OF FERTILIZER OR MICRONUTRIENT!**



CUT NITRATES BY 25%!*

USE SN14 AND DIATOMIC HUMUS TO CUT USAGE OF ALL YOUR CHEMICAL FERTILIZERS

 **ASTONISHING RESULTS, GUARANTEED!**
Proudly made in the USA!



REDUCE NITRATES AND OTHER INPUTS BY PROVIDING AVAILABLE NITROGEN TO YOUR TURF 24 - 7!

VISIT WWW.SN14ORGANICNITROGEN.COM FOR MORE DETAILS OR CALL 866 - 591 - 5335 TOLL FREE TO ORDER NOW.

biodiversity
GROW SAVE PROTECT GSP

NEAR MISS

That minor accident could have been a serious accident. What are superintendents and manufacturers doing to help keep workers safe?

BY STEVEN TINGLE

They called him “Cooter” and he worked at my parents’ golf course from the first day shovel hit dirt back in 1968. He mowed rough on a big Massey Ferguson tractor dragging a seven-gang reel unit. Five days a week, 6:30 a.m. to 3:30 p.m., year after year.

Cooter was a man of schedules. Every day around two o’clock, nature called. And Cooter answered. He’d park the big Massey Ferguson on a knoll between the 15th and 18th fairways just a few yards from the course restrooms. Same time, same place, for years. But one day, after nature was satisfied, Cooter opened the door to find his tractor was not where he’d parked it. In fact it was nowhere to be seen.

He laughed, figuring someone was pulling a prank. He started walking back to the maintenance shop, across the 15th fairway, past the pond that bordered the low end of the hole. He strolled by the water just in time to see the last reel slip below the water’s surface.

Every golf course has stories like this.



Somebody forgets to set a parking brake and a tractor ends up in a pond. Or how about the time the mechanic slipped on hydraulic fluid and busted his head? Or that summer intern who wouldn’t wear a hardhat because it wasn’t “cool,” only to get knocked out by a low hanging limb.

These tales serve as reminders of the importance of workplace safety and the consequences of not paying attention. Most of the time the stories end with a laugh; but not every time.

A serious example

Michael Costa was the superintendent at Cahoon Plantation in Chesapeake, Va., for 14 years. One Monday last fall Costa was spraying tee boxes when somehow, inexplicably, he ended up underneath the spraying unit and died of mechanical asphyxiation.

Continued on page 28



Intelligent Irrigation

What is your root zone telling you?



The LCD screen displays:

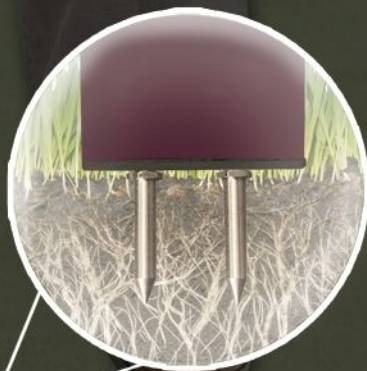
- Current Measurement
- Rod Length
- Number of Readings
- Running Average



FIELDSCOUT[®]

TDR 300 Soil Moisture Meter

- Hand Water Objectively
- Monitor Irrigation Uniformity
- Schedule Irrigation Effectively
- Reduce Water Usage



Rods available in lengths of 1.5", 3", 4.8", and 8"

USED AT THE
U.S. OPEN!

Order online at
www.specmeters.com



Spectrum[®]
Technologies, Inc.
"To Measure Is To Know"

12360 S. Industrial Dr. East
Plainfield, Illinois 60585
Toll Free: (800) 248-8873
Email: info@specmeters.com

Scan the code with your
smart phone for more
information about the
FieldScout TDR 300!

Play It Safe

Continued from page 26

Costa was only 42 years old, married with two children. An investigation of the accident by the Virginia Department of Labor and Industry cited the golf course for improper use of the sprayer and inadequate training, finding Costa had dismantled the unit without engaging the parking brake or blocking the wheels. The department also proposed close to \$17,000 in fines against the course.

I was crushed after reading about Costa's accident. I wanted to learn more about how the golf course maintenance industry was dealing with workplace safety and where it fell in the hierarchy of course conditioning and tight budgets. I wanted to talk to the professionals in this industry, the superintendents, the manufacturers, the Man.

The right thing to do

Every superintendent I spoke with was committed to safety, on and off the re-

cord. I heard about monthly safety meetings and equipment training sessions, paper trails and workman's comp rebates. I heard about making safety the No. 1 priority. Not because of fines, or insurance, or corporate policy, but because it's the right thing to do.

Mike Williams, superintendent at Whittier Narrows Golf Course, Los Angeles, says preparedness is key when it comes to workplace safety. "Accidents don't happen every day but you still have to react and be prepared for them. You always have to be on your toes for when something does happen out of the ordinary."

Williams runs safety meetings once a month and discusses topics pertaining to the time of year or current projects. "In the summer we talk about heat stress and exhaustion and taking care to not get overheated," says Williams. "If we're cutting trees we talk about safety with chainsaws. Everyone signs off on it so they understand if something does hap-

pen I have their signature. I also ask them questions, so when they leave the meeting there is no uncertainty about what is right and what is wrong."

Williams also notes the importance of properly maintained equipment. "I have a very good mechanic who makes sure all guards are in place and that safety switches are not bypassed. I'm not going to sacrifice someone's safety just because it's Friday at two o'clock and I've got two more fairways to cut and something's wrong with the machine. I will definitely have that machine repaired before they jump on it again. There's no hurry to get the golf course ready when it involves someone's safety."

Good business

Proper safety training and documentation can also save money. Shane Wright, CGCS at the Vero Beach (Fla.) Country Club has earned workman's comp rebates at his club for the past five years

ANOTHER CLOSE CALL

Casey Crittenden, CGCS at Bella Vista CC, knows three things that can save your life on the course: A seatbelt, a roll bar and cell phone.

In 2010 a maintenance employee at Crittenden's course in Bella Vista, Ark., was mowing near a creek bank when the back tire of the mower dropped into a hole. The mower flipped, and the employee, Bonnie Vines, was trapped underneath. Vines had followed all of the proper safety procedures — most importantly securing her seat belt — which, along with the roll bar, prevented

her from being crushed by the mower. Keeping calm, Vines used her cell phone to call the assistant superintendent and report the accident. The assistant in turn immediately contacted 911. Members of the local fire department, along with three of Vines' coworkers, eventually freed her from underneath the mower. She was then airlifted to a hospital in Springfield, Mo., where she was treated and released.

"It was just

one of those freak accidents," says Crittenden. "I think most employees want to do a good job and sometimes we all fail to recognize some potential issues when we're out there, so we have to all remind ourselves and be cognizant of those things. Fortunately, she had followed all of the safety procedures we discuss in our meetings and that prob-

ably saved her life."

The accident served as a learning experience for Crittenden and his staff. It also reminded everyone of the importance of following Bella Vista's safety procedures, which require hard hats, seat belts and equipment inspection. As Crittenden says, "You really have to be prepared for anything."



"I think most employees want to do a good job and sometimes we all fail to recognize some potential issues when we're out there so we have to all remind ourselves and be cognizant of those things."

— CASEY CRITTENDEN, CGCS, BELLA VISTA CC



“Accidents don’t happen every day but you still have to react and be prepared for them. You always have to be on your toes for when something does happen out of the ordinary.”

— MIKE WILLIAMS, SUPERINTENDENT,
WHITTIER NARROWS GC

by completing a department safety audit every month. “At first it seemed like a lot of documentation but it’s really paid off,” Wright says. “It’s been cool for us because our club actually gives the rebate back to the staff. So if it’s a \$120 or \$130 check every year the guys really understand what safety means at that point. Not only is it good for their physical well being, it’s also good for their pocket books.”

In addition to training, Wright also ensures all equipment is properly maintained and suggests outlining the shop and creating barriers to define grinding areas or places with a lift table. “That helps keep the guys out of areas where they shouldn’t be,” says Wright. “It also defines high risk or safety goggle areas.”

Manufacturers are also working hard to keep workers safe. Tracy Lanier, product manager for John Deere Golf, says his company has a long history of working to provide safe, reliable products for cus-

tomers. For example, Deere has installed operator presence bails on its walk mowers for more than 15 years.

But Lanier agrees, no matter how safe the product, the end user is the best defense against accidents. “The best safety feature is the proper training of operators,” says Lanier. “Operators should read the operator’s manuals, which are available in many languages, and also watch operator training videos for the machines. They should become familiar with the machine they intend to use and practice in a safe area prior to operation under their supervisor’s direction.”

Finally, I reached out to the Occupational Safety and Health Administration (OSHA) several times. “What is the government doing to educate our industry on proper workplace safety and regulate and enforce its policies?” I asked. I was routed and rerouted to multiple personnel. I was told to submit questions in written form. I was then

told my questions were too vague.

I resubmitted questions and was told it would take a couple of weeks before someone could respond. I was promised materials, website links, articles.... I’m still waiting.

Commitment to safety

A golf course can be a dangerous place to work but when it comes to safety, golf course management professionals should be proud of their commitment to keeping themselves, their staff and those who use their products safe and free of injury.

Cooter never did live down his accident. Friends were always asking him the best way to mow water or where to hide a tractor. Not everyone found it funny; I remember that my dad was red-hot angry when he found out thousands of dollars of mowing equipment was at the bottom of No. 15 pond.

But Cooter was lucky — someone could have been seriously injured by his actions. ■

Steven Tingle is an Asheville, N.C.-based writer and consultant and a former certified golf course superintendent. Reach him at tingle@steventingle.com.



Your Ad Here

Could American golf courses take a tip from this Nepalese golf course — and allow billboards to break up the beauty?

BY CURT HARLER

Ah, but it's wonderful to find golf in the foothills of the Himalaya. Walk with me across the deck and out of the clubhouse at the Gokarna Forest Resort in Kathmandu, Nepal. To the right, the entire northern horizon is framed with high mountains. To the left, an ancient forest. Ahead, a few hours of restful golf.

Wait a minute, an unusual sight forms the backdrop of the lovely No. 10 — a huge billboard touting vodka. Make that two billboards, the other touting golf.

Must be an unfortunate juxtaposition with a nearby road, right? No, make no mistake, this resort has allowed billboards to break up the beauty of its otherwise stellar surroundings.

Could billboards be the cash cow that saves American golf courses? There has been much debate about selling advertisements on team jerseys (and the lost revenue by not already doing so), especially in the NBA. Why not a billboard for Gatorade at the end of a long par 5? Or maybe a 5-Hour Energy Drink, endorsed by Jim Furyk?

Pondering the concept, I turn away and walk over to the putting green, knowing from my research that Gokarna has a local reputation as a fantastic course. Bentgrass greens are built to USGA specifications. Local Bermudagrass varieties make the fairways a pleasure to tread. Along most of the holes, the trees surrounding the path of play are older than many of the states in the USA.

There are 6,715 yards to this magical par 72 golf course... and a score card that delineates the house rules for balls that fall into hoof prints (hoof marks on the greens may be repaired, I learn).

Gokarna is a top-end course at a resort in Kathmandu. Most of the players are expats and diplomats living in Nepal, foreign corporations with a local presence, and the upper crust of Kathmandu society.

This is no nickel-and-dime operation. Membership is \$2,260 (in U.S. dollars) a year. That may not sound like much to a superintendent in North Carolina. But it is a mind-boggling figure by local standards; per capita income in Nepal is \$473 a year.

Being a proficient golfer, I practice putting with my head down. Being a curious