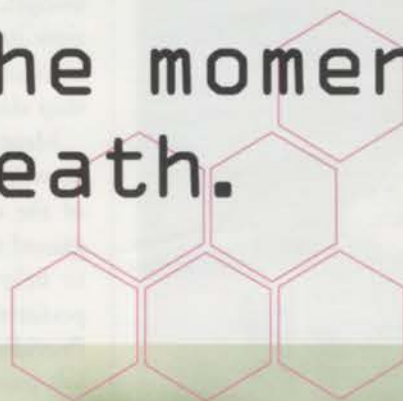


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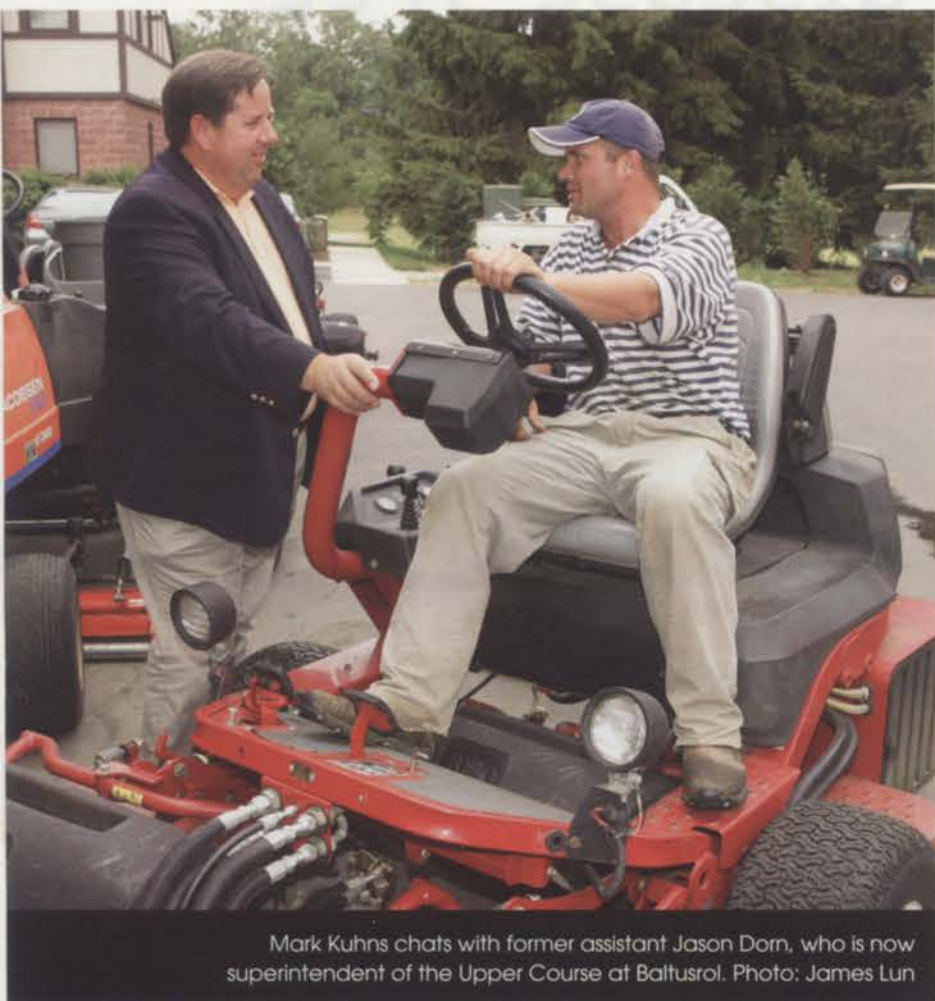
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## A teacher's wisdom

SUPERINTENDENTS HELP GUIDE ASSISTANTS TO REACH THE NEXT LEVEL OF THEIR CAREERS



Mark Kuhns chats with former assistant Jason Dorn, who is now superintendent of the Upper Course at Baltusrol. Photo: James Lun

by MICHAEL COLEMAN

**R**emember your first week on the job as an assistant golf course superintendent? You probably had numerous questions about irrigation, disease prevention and how to best assign work to the crew. Most likely, it was daunting. But, with any luck, you had an experienced superintendent who guided you and kept you in line.

Now, as a golf course superintendent, you're on the other end of that relationship. So how do you successfully mentor the assistant superintendent who looks up to you?

### Follow the leader

First, superintendents need to realize it's a priority. Between calls with vendors, "putting out fires" and planning next year's

budget, superintendents need to set aside time in their daily schedule to coach their assistants. They can help hone their leadership skills and encourage them.

Mentoring includes one-on-one activities in which a superintendent imparts some of the experience and knowledge he has gained throughout his years in the business to help improve his assistant's ability to perform his job better and more efficiently. Providing feedback to an assistant about his job performance is a key to helping him meet the superintendent's standards. For example, a well-planned period of initiation activities can get new assistants off to a good start, says Steve Phillips, golf course superintendent at Sebastian Hills Golf Club in Xenia, Ohio.

"I try to spend a week going through everything," Phillips says. "I meet with them a couple days and check their work after that."

The sooner a superintendent can inspect what an assistant has done, the better his feedback will be. Superintendents should target the tasks that need improvement and use praise generously when the task is accomplished to the specifications, Phillips says.

Any advice superintendents give should involve some specific points, not general comments that might be misinterpreted. For example, if a bunker an assistant just finished repairing isn't 100 percent to a superintendent's satisfaction, he should say exactly what needs to be addressed and not just that it looks bad. But he shouldn't step in and rework a task himself, leaving the assistant out of it. It might be faster, but doing that will rob him of motivation and eliminate the superintendent's best chance of improving the assistant's performance next time.

Phillips advises superintendents make sure a task is done right the first time.

"Get in the ground and show the assistant you're not afraid to get dirty," he says. Let them know your way of fixing something but give them some leeway to try a new

approach. With hands-on work, hands-on mentoring is a good fit – to a point.

As with many aspects of the job, technology provides tools veteran superintendents didn't have access to early in their careers. Videos are an example. With a video, Phillips can go through it, stop it and explain things. If he has any personal touches to add, he can do so then. He also instructs his assistants to take notes while watching videos to help them retain more of the information.

However, getting too focused on the task at hand can impede seeing problems on the course. Mark Kuhns, director of grounds at Baltusrol Golf Club in Springfield, N.J., urges his assistants to see the big picture when they're working.

"Look around, stand in the middle of a green, and look in all directions and pick up on things," he says. "Be the worst curmudgeon the course has."

This kind of deliberate approach to seeing everything helps overcome tunnel vision and allows an assistant to notice flaws.

Dan Kilpatrick, an assistant at Baltusrol's Lower Course, says Kuhns has taught him the key to maintaining a top-quality course is seeing the big picture. Kuhns encourages the whole team to pursue excellence.

"Baltusrol demands a lot," Kilpatrick says. "Mark asks for a lot, and guys give it to him."

The demands are tempered by a great deal of support, Kilpatrick says. With so much experience, there's always some valuable insight from Kuhns that makes a project progress more smoothly. His input gives you more confidence, he says.

### Are you experienced?

Not only should superintendents make sure assistants perform tasks properly and efficiently, they also should be sharing their expertise with them. With 17 people on staff, including a mechanic and one assistant, John Malloy, golf course superintendent at Bearpath Golf Club in Eden Prairie, Minn., has plenty of chances to

share his expertise.

"The best education is showing up to work every day and learning," he says. "The books and the university tests are one thing, but what happens in the field is totally different."

Malloy tells a story about an assistant he worked with years ago who asked Malloy to educate him about the irrigation system. Malloy showed the young man, who aspired to be a head superintendent, how to fix a diabolical leak in the system. After two days of working on the problem and fixing it, the young man came to Malloy exhausted saying, "When I said I need to know about irrigation, I need to know how often you water, when you water. I can hire guys to fix leaks."

But Malloy told him even if he hires someone to do that, he still has to be able to handle it himself, because at some point during a weekend when he's on his own, the problem might arise. Sure enough, years later, the young man saw Malloy at a golf industry trade show and said, "Man, you were dead on," because he was stuck fixing a leak the weekend before.

Malloy also encourages assistants to gain experience at courses in various regions of the country because there are different lessons to be learned at each. He also urges his younger staff to work for a couple different superintendents so they can experience multiple ways of approaching issues and challenges. If an opportunity with a veteran superintendent isn't available, he advises to look for a new course under construction.

"That's where you learn from the bottom up," Malloy says. "You actually see it go in

the ground, come out of the ground and how you grow it in, and your opportunities are 100-percent better to become a superintendent."

### Keeping tabs

Record-keeping is another valuable tip for assistants. Phillips, who started at Sebastian Hills when the grow-in began in 2000, encourages his staff of nine to keep a record of what's accomplished on the course daily, which is something several veteran superintendents say they've done their entire careers.

Malloy has kept a journal every day for most of his 40 years in the business. He tells his crew it's valuable for tracking weather trends and following past activities, such as repairs, on the course. In five minutes, an assistant can capture the kinds of details that slip away in time, such as who was late for work and what tasks were completed.

Malloy's assistant, Greg Christian, is a former superintendent himself. The opportunity to work with Malloy arose about a year ago, and Christian saw it as a good opportunity to get back into the business. The way Malloy deals with people on his staff was attractive to Christian, who has known Malloy many years.

"He's very intuitive, reading people in their state of mind," Christian says about Malloy.

Christian says one reason that makes Malloy a good mentor is his guiding philosophy. Malloy's approach is to manage aspects of the job such as fuel but lead people. He shows trust in those that work for him, Christian says.



Mark Kuhns and former assistant Scott Bosetti, who is now superintendent at White Beeches Golf Club in Haworth, N.J. Photo: James Lun

### Responsibility

The experience an assistant acquires correlates to the responsibility he's given. Malloy wants to have them stretch a bit, but not be overwhelmed. He asks his assistants for input about buying equipment, for example, but doesn't allow them to purchase anything independently.

Many industry veterans say superintendents who give their assistants too much responsibility face a double-edged sword. If the assistant can't handle it, the work suffers and so does the course. That reflects poorly on the superintendent. If the assistant is a go-getter, the superintendent might have an easier time of it, until the owner notices who's handling the responsibilities. At that point he could be replaced with someone younger, cheaper and more in tune with technology.

Finding the balance between boiling

## Mentoring tips

Veteran superintendents have these tips for assistants to remember:

1. Be honest.
2. Communicate about disease trends with other crews in your region.
3. Learn how to calibrate your spraying equipment correctly.
4. Understand you can learn from everyone on your crew.
5. Don't let 14-hour days burn you out.
6. Read trade magazines for the latest information.
7. Make videos interactive by discussing relevance to your course.
8. Use online classes to enhance your knowledge.
9. Be good to your mechanic.
10. Get experience in different climates.
11. Be aware the pressure of being in charge can alter your interactions with people.
12. Work at a course during the construction/grow-in phases.
13. When aerifying, avoid sprinkler heads at all costs.
14. Become a Class A superintendent, then strive for certification.
15. Network with veteran superintendents at industry shows.
16. Be mobile in your career.
17. Talk with your superintendent regularly about your responsibilities.
18. Don't become complacent.
19. Get close to your detractors and learn how to address their concerns.
20. Tell yourself you can accomplish anything, then do it.



over and being boxed in is critical. Richard Spear, golf course superintendent at Piping Rock Club in Locust Valley, N.Y., tempers his assignments based on the assistant's background. If a guy shows up at his course

straight out of school as a second assistant, he doesn't know the program and wouldn't be expected to contribute much right away. That's where coaching comes into play, turning a green graduate into a greens

expert. Spear likes the attitudes he's seen from assistants because most of them want more responsibility. With responsibility comes opportunity, including playing golf. The 20-year veteran sees value in playing various courses.

"I encourage them to play golf so they know what a good course is and what's over the top," Spear says.

Apparently, the lessons paid off for some of his former assistants. Craig Carrier is now the superintendent at Bethpage State Park in New York, host to the 2002 U.S. Open. Dave Pughe is a scratch golfer and runs the crew at the Garden City Golf Club New York.

Spear's staff of 25, including two assistants and a second assistant, completes many in-house and construction projects at the course. Spear focuses his team on taking the work seriously, but not themselves.

"We try to have fun at Piping Rock," he says. "There's very little whipping involved."

### Supervisory role

One key aspect of the job assistants at larger courses struggle with is how to delegate tasks to the crew effectively, says Kuhns, who joined Baltusrol in 1999 and has a staff of about 60 to maintain 36 holes. Kuhns says some assistants in the industry find it difficult to make the transition from someone who accomplishes specific tasks to the person who manages the staff. These assistants tend to be too involved in basic maintenance to the detriment of the staff's effectiveness.

"If they're spending their time hands-on all the time, somebody isn't being supervised properly," he says.

Kuhns says assistants should show the staff what needs to be done and then supervise, not micromanage, a task. Depending on the size of the crew, this challenge might be one the superintendent faces. When assistants are managing junior members of the staff, superintendents should make sure they go back to check the progress and quality of work, as they've been doing for them, Phillips says.

One of Phillips' assistants for the last three years, Todd Bottorff, got a chance to do that while Phillips was out of town. The pair kept in touch, and Phillips coached him on dealing with a sick employee, broken-down equipment and other issues. It was a good learning experience, Bottorff says.

Bottorff comes from a nontraditional background of factory work rather than university instruction. He says the kind of

(continued on page 49)

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# High-tech evolution

COMPUTERIZED EQUIPMENT MAINTENANCE IS AN INVESTMENT THAT PAYS DIVIDENDS IN THE FUTURE



A computer program that tracks equipment, parts and labor costs, and schedules can make a shop manager's job easier. Photo: The Toro Co.

by  
DOUG  
SAUNDERS

**D**uring the past decade, the increased demand for optimum course conditions has put added pressure on all aspects of course management. That pressure to take the golf course to the next level filters down to every member of the maintenance staff. The mechanic in the shop is no exception.

It's a shop manager's job to keep the various pieces of equipment used to condition a golf course working instead of idling in the shop. This requires the ability to set a regular maintenance schedule, keep machinery sharp, keep detailed records of repairs and operating costs, and keep a running inventory of parts.

Each shop manager has developed his own way to juggle these aspects, from using index cards to saving old receipts to keeping stacks of legal pads with notes crammed in the top drawer of an office desk. Each system has been developed through trial and error and has served a purpose for each facility in its own way. However, with current technology, isn't there a better way?

Past ways of keeping track of equipment maintenance have inspired the development of computerized maintenance management software. These programs allow any maintenance facility to track the many facets of machine maintenance easily to become more efficient. During the past 20 years, many such programs have been developed for many industries, but their widespread acceptance by golf course mechanics has been slow.

Golf course superintendents were faced with making the transition to becoming computer savvy first when sophisticated irrigation systems demanded a more technical way to operate them to their fullest potential. The repair shop is probably the last area of a golf operation that hasn't made a full-scale swing toward computerization, but it's a trend that's becoming more popular. A computer program that tracks all pieces of machinery at a facility, as well as maintenance schedules, parts requirements and labor costs, is a tool that could only help make the shop manager's job easier and his operation more efficient.

Jay Rehr was the head mechanic at Augusta National Golf Club for 16 years and now is a consultant to shop managers in the Southeastern United States. Rehr has seen how the position has changed first hand and is a strong proponent of using computer programs.

"The position of the shop mechanic has changed dramatically," he says. "The demand on the machinery has changed.

Mowing heights are lower; the time allowed for completing tasks has shrunk, which puts more demand on keeping machinery on the course working; and the machinery itself has become more complex."

With more demands, it's advisable to find new ways to coordinate the tasks to create a more efficient operation, and the use of CMMS programs is an important tool, Rehr says.

"For many years, a mechanic would just deal with things as they came, and the concept of records was usually confined to a series of notes," he says. "While this method could be functional in the past, the drive to take golf course management into a more business-like approach demands the need for better ways to manage the shop."

### A better way to manage

The Broadmoor Resort – which will host the 2008 U.S. Senior Open – in Colorado Springs, Colo., includes three golf courses that are maintained with a staff of 70 employees during the summer. Don Steele, the head mechanic, is responsible for maintaining a \$2-million fleet that comprises 250 pieces of equipment. Steele has been working in the shop for 28 years and has made the transition to a computerized management program.

"I've worked here for many years but really didn't comprehend all of the complexities until I took the top spot in 1998," he says. "When I began to inventory our parts room, I found shelves of parts that were obsolete because we didn't have those types of ma-

chines on the property anymore. We had a computer program, but it wasn't being utilized completely. It was then I figured there had to be a better way to manage things," Steele says.

First, Steele assigns a number to each piece of equipment and then builds a file that includes make, model, serial number, maintenance schedule and parts requirements. He also has an inventory catalog so he can tell what parts he has in stock at any time, what parts he needs for future maintenance schedules and what he needs to order.

"The program prompts me about regular maintenance schedules, so it helps set up the work schedule for my three mechanics," he says. "I can determine what parts are needed much faster than if I just had old notes. And at the end of the year, it's beneficial for taking inventory of my parts supply and developing a restocking order."

Another important advantage to Steele's computer files is he can keep track of all costs associated with each piece of machinery, be it regular maintenance or how often the machine is being repaired. This helps determine when a machine isn't being cost effective enough to use.

"For example, you might have two greens mowers and one runs just great, while another always seems to be needing some type of repair," Steele says. "With a click of a button, I can tell the entire life history of the machine. This is helpful when it comes time to decide which pieces of equipment are still serving their purpose and which ones are becoming a financial burden. Hav-



Onboard software helps keep track of hours of operation and internal temperatures on Jacobsen mowers. Photo: Adam Slick

# Solving the Problem of NITROGEN LOSS

Nitrogen feeds turf, and vigorous, healthy turf is an environmental benefit. It's as simple as that. But nitrogen must be managed to help protect that environment. Until recently, however, few innovations to improve nitrogen efficiency have been made.

University research has repeatedly revealed that a large portion of urea-based fertilizer is wasted with each application through environmental factors. Nitrogen, being naturally unstable, is lost to the atmosphere, leaching, and runoff. For years, one solution was to put a coating around the urea. This helped slow down volatilization, but left the urea unavailable to the plant until the coating deteriorated by mechanical or microbial degradation. Or, urea molecules are chemically bonded together in long chemical chains waiting for soil microbes to break the chains rendering the nitrogen available for plant use. The problem is that the rate of microbial activity is closely tied to soil temperatures—in cool temperatures activity slows, and in warmer temperatures activity increases. The result is that the turf manager has less control over nitrogen release and availability. Now, new advancements in nitrogen technology provide real solutions to the challenges of unstable nitrogen.

## An Unstable Element

As an element, nitrogen seeks to find equilibrium. From the moment urea nitrogen is applied, up to 30 percent can be lost. Upon application, urea encounters moisture and a soil enzyme called urease, which immediately begins to break down urea into ammonia and carbon dioxide, which can then escape into the atmosphere. Because so much nitrogen is lost during ammonia volatilization, rates are typically adjusted higher to

accommodate this waste, leading to over-application and potential turf "burn."

Once the nitrogen is applied, it's subjected to further environmental factors as it works its way into the soil. After urea breaks down into ammonia, it enters the soil where a series of biochemical reactions occur called nitrification, or the transformation of ammonium ( $\text{NH}_4^+$ ) nitrogen to Nitrite ( $\text{NO}_2^-$ ) and further to Nitrate ( $\text{NO}_3^-$ ) nitrogen. Plants easily use both ammonium and nitrate nitrogen. But, nitrate nitrogen is subject to leaching, while ammonium nitrogen can be held by the soil much longer.

And, finally, excessive rain or irrigation can undermine nitrogen fertilization. In saturated soil, bacteria that are deprived of oxygen will strip oxygen molecules from nitrates, a reaction called denitrification. This converts the nitrates into nitrogen gas ( $\text{N}_2$ ) and nitrous oxide ( $\text{N}_2\text{O}$ ), both of which quickly escape into the atmosphere.

By stabilizing the nitrogen, more applied nitrogen stays available for plant use as intended, and out of groundwater, which makes more sense environmentally and financially.

Terry Gill, superintendent at Braeburn Country Club, commented, "From a money standpoint, the last thing you want is all your nitrogen going up into the atmosphere and not into the soil."

StabilizedNitrogen offers greater nitrogen efficiency and provides a rich, emerald green color response.

## The Available Solutions

Today, there are three basic forms of nitrogen fertilizers available to superintendents to address these challenges, distinguished by their release rates and mechanisms: treated nitrogen, such as methylene urea; coated nitrogen, such as sulfur or polymer-coated urea; and StabilizedNitrogen™, a patented nitrogen stabilization process.

While all these technologies help reduce ammonia volatilization, both treated and coated urea require external factors, such as warmer soil temperatures

and microbial action, or specific moisture levels, to make the nitrogen available to the plant. And with coated urea, once the coating is cracked or broken down, the urea inside offers no advantages over standard urea. Treated and coated urea may take longer to provide color response in turfgrass, and release inconsistently over their effective time frame.

StabilizedNitrogen, however, works independently of external environmental conditions. Available only from AGRO-TAIN International, StabilizedNitrogen contains two unique, proprietary ingredi-

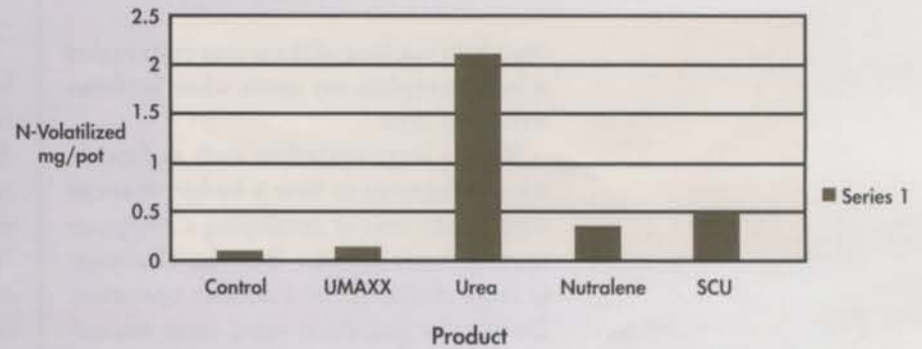




### Spring Green Up



### Nitrogen Volatility



#### Purdue University - Kentucky Bluegrass Response Trials

StabilizedNitrogen provided better color response than IBDU and sulfur-coated urea.

#### University of Wisconsin - 2001 Bentgrass Trials

StabilizedNitrogen prevents loss of nitrogen to the atmosphere.

ents that inhibit volatilization and prevent leaching and denitrification, while still leaving nitrogen available to the plant. The stabilization technology allows the nitrogen to be available to the plant in ammonium form consistently over a longer period of time, providing quick response without flush growth.

Jack MacKenzie of North Oaks Golf Club in St. Paul, Minnesota remarked on the consistent release, "If we put down a slow release product, hit a hot moist temperature period in July, all that nitrogen is released because the

slow release product is being activated by the increase in microbial activity or the moisture. With the stabilized urea I don't have that. I don't get the peaks and valleys. It's just very consistent release of nitrogen."

#### University Research Results

In a 2001 University of Wisconsin study, StabilizedNitrogen was found to be approximately twice as effective as methylene urea, and nearly three times as effective as sulfur-coated urea at preventing ammonia volatilization. In Kentucky Bluegrass response trials at Purdue University, StabilizedNitrogen was found to provide better spring color response than standard urea, sulfur-coated urea, and IBDU. Additionally, because StabilizedNitrogen doesn't require specific weather or soil conditions to provide response, it has been found to provide a quicker green-up without causing flush growth. In fact, in over a dozen university studies, StabilizedNitrogen technology has been found to provide better results in every category: color, quality, nitrogen efficiency, length of performance and environmental impact.

#### Greener, Faster, Longer™

StabilizedNitrogen Technology is found in AGROTAIN International's flagship products: UFLEX™, UMAXX® are offered as StabilizedNitrogen fertilizers and are water-soluble, granular products that can be applied directly or as part

of fertilizer blends. UFLEX has been formulated to provide six to eight weeks of consistent response, while UMAXX offers 12 to 16 weeks of color and quality. HYDREXX is a new, soluble additive for urea-based, liquid fertilizer programs that superintendents add directly to their spray tank with their liquid urea or UAN solution. HYDREXX offers turf managers the ability to control the performance and response and to dial in the performance to match the specific conditions at your course.

Mike Kelly, superintendent at Edina Country Club in Minnesota, has been using HYDREXX in his fertilization program this year, "Color has become very important to golfers. Realizing that it's hard for a superintendent to balance color and playing conditions, you want firm and fast, but yet you want green. With the StabilizedNitrogen, I think that it is possible that you can get that because it does enhance color while at the same time keeping a balance in playing conditions and watering."

"Beyond just providing a better product," said Al Nees of AGROTAIN International "we're providing a better value. This technology makes nitrogen fertilization so much more efficient that a superintendent's cost-per-day of response can be significantly less than with other nitrogen sources. And now with HYDREXX, we've found that the value and cost-efficiency is even greater."

Superintendents continue to drive manufacturers and suppliers to deliver better results and more environmentally sound solutions, and demanding research and facts to prove performance claims. That dedication to improvement and proven innovation is what led to the development of StabilizedNitrogen Technology. Detailed university research can be viewed by visiting [www.stabilizednitrogen.com](http://www.stabilizednitrogen.com).



ing a firm tracking of these true costs makes it easy to explain my needs when it comes to budget time.”

With a large operation such as Steele's, it's an advantage to have a budget that can support the cost of developing a computer management system. But the challenge is more daunting for a smaller operation. During the past three years, most maintenance budgets have been stretched to the limit partly because of cost increases for line items such as fertilizers and fuel. However, even a smaller operation can benefit from letting computers handle the necessary task of record-keeping, which is still an essential part of any shop operation.

## Overcoming fear

The two issues that must be addressed are the time and money needed to incorporate a program for the shop and overcoming any fear of computers. A mechanic must view the computer as a useful tool that he'll be in control of instead of something that will take over. And, just as superintendents have had to make the adjustments to the sophisticated irrigations systems and spread sheets that now are a regular part of their job, machine shop managers also will need to operate in the same efficient manner.

“The older mechanics and technicians have learned to do so much of their job by just storing information in their head, but as these men retire, it will be difficult for new employees pick up where the others left off without some information trail,” Rehr says. “I tell mechanics that it's just smart to become computerized, but if not, they at least need to develop a paper trail of information for the people who takes their spots.”

Harold George, the head mechanic at the DuPont Country Club in Wilmington, Del., also has seen how the transformation to computers can be beneficial. George, who has worked at the facility for 36 years, is responsible for the equipment that maintains three championship courses.

“To be honest, in the old days, equipment maintenance was held together with bailing wire and chewing gum,” he says. “One of the big differences today is the improvement in the engineering of the equipment, which has made them more reliable but also more expensive. This means the mechanic must also be more sophisticated. Using a computer to help you makes sense. Mechanics need to look at the computer like it's a box of Snap-on tools. If you start to use them, you'll find out which parts will work for you.”

There's an array of programs for shop

managers that have been on the market for many years, such as Qqest and TRIMS. CMMS programs range in price from \$500 to \$4,000, depending on the program's sophistication. Although CMMS are used mostly at larger facilities, many in the industry feel that, in the near future, computer-tool use will be the norm in the shop, rather than the exception.

For example, The Toro Co. has been developing a program for several years called MyTurf. It's a Web-based program that's been designed to be as user-friendly as possible to help mechanics overcome the fear associated with using a new program.

The decision to invest in CMMS ultimately is driven by economics. With budgets being tightened, the desire of green committees and general managers has been to keep machinery running as long as possible. Regular equipment maintenance can lead to a longer life span for these expensive machines, and investing in technology to reduce maintenance costs and increase efficiency within the shop can help achieve that goal. GCN

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## Electric diagnosis

Advances in maintenance shops are found not only in office computers but in the machinery as well. During the past decade, manufacturers have developed several

advances in the diagnostic capabilities on equipment. The purpose of these smart machines, which have improved with added features, is to give mechanics a helping hand diagnosing electrical problems.

John Deere introduced a diagnostic feature on its 2500 series of greens mowers in 1998, according to product manager Tracy Lanier. A series of LED lights on the console informed the mechanic which circuit might be having a problem. Then, the next generation of the technology was introduced through the company's White Box system, which can determine the exact point where power is flowing and where an interruption occurs. This saves the mechanic valuable time

to make the necessary repairs. Currently, the White Box system is available on John Deere's greens and fairway mowers.

Jacobsen equipment also is beginning to feature imbedded technology. Onboard software keeps track of the hours of operation, internal temperatures and other data that helps diagnose trouble. The ability to take important data out of the equipment is similar to what has been happening in the auto industry, says Peter Whurr, vice president for product support for Jacobsen.

The information stored in the equipment can be downloaded via a laptop computer by a Jacobsen dealer in a matter of minutes, saving time.

“We have been developing the onboard technology for several years,” Whurr says. “We have perfected the ability of our representatives to do instant diagnostics in just the last 12 months.”

A property with a large equipment fleet can purchase the software to diagnose equipment itself.

The technology is available in the Jacobsen fairway, rotary and greens mowers. GCN



John Deere's White Box determines where power interruption occurs. Photo: John Deere