

BY T.R. MASSEY

## STEADY GROWTH AND FOLIAR APPLICATIONS ARE KEY TO MOST FERTILITY PROGRAMS

**A**mong the multitude of tasks any golf course superintendent must perform, maintaining a nutrition program is among the most important.

Throughout the years, golfers have come to expect lush, highly manicured turf conditions. Though vegetation varies throughout the United States, green is synonymous with golf.

Giving plants what they need to stay healthy and lush isn't easy, and when it comes to turfgrass on golf courses, there's a thin line to walk.

"What we do for the health of the turf is at odds with what we do to make a great playing surface," says Todd Lowe, an agronomist for the Florida region of the U.S. Golf Association's Green Section.

Among the 16 or so nutrients needed by plants like turfgrass, the most important three are nitrogen, phosphorous and potassium (NPK). Secondary elements such as calcium, sulfur and magnesium, as well as other trace elements, are needed for specific circumstances depending on climate and soil.

Man-made or organic fertilizers are compounds that help turfgrass grow and are applied in granular form or sprayed on the plant. But turfgrass doesn't know the difference between fertilizers that have been manufactured or come from natural sources such as peat.

### SLOW, STEADY GROWTH

Pat Gross, the USGA Green Section's Southwest director who's based in Santa Ana, Calif., has seen trends in golf course fertility programs throughout the past decade.

"Nearly all golf courses spray fertilizers on greens now," he says. "They premix fertilizer the night before, fill the tanks and get it done faster."

Fertility practices vary greatly throughout the country. Though many superintendents still use granular products, the distribution of the product across the turf surface is the focus. It's easier to use liquid when microapplying fertilizers, Gross says. The reason for liquid fertilizer use is the heightened expectations of putting surfaces, the area of a golf course that receives special focus regarding fertility programs.

"They're spoon-feeding," Gross says about superintendents. "Instead of a half-pound once a month on the greens, they'll apply a tenth of a pound once a week. Light, frequent applications are what's known as spoon-feeding."

The turf must have what it needs to remain healthy and grow.

"You don't want spikes in growth because that slows down greens and creates more clippings," Gross says. "Spoon-feeding lets you maintain steady growth. Of course, lots of things go into the speed of a green, but fertilizer is one aspect of it."

Even though fertility programs vary throughout the country, spraying is the biggest trend, Gross says.

"In the Southwest, salinity and sand issues come into the management of the fertility program, but overall, spray equipment has gotten

more sophisticated," he says. "Also people see their neighbors doing it, and they have to keep up with the Joneses."

Dedicated sprayers allow superintendents to apply fertilizer at low rates. And fertigation – the practice of injecting fertilizers through the irrigation system at low rates – helps keep turf growing at slow and steady rates, especially on fairways, tees and roughs. This mechanical evolution has allowed fertility programs intended for greens to expand.

"Putting green aprons are now getting attention," Gross says. "They're extending these programs away from the greens."

### TWEAK THE PROGRAM

Across the country in Arundel, Maine, the course at Dutch Elm Golf Club features bentgrass and *Poa annua* on the greens, tees and fairways, and ryegrass and bluegrass in the rough. Golf course superintendent Jeff Hevey, who's been at Dutch Elm for 15 years, has noticed the same trend of using liquid fertilizers.

"The biggest change I've noticed is that I've started using liquids," he says. "For our fairways, we used to do three applications a year, and for the first time, one of those applications will be a liquid. We do it in June, July and August, and the first week of September is liquid for the greens."

Hevey always uses a granular fertilizer on his tees, which are cut at higher heights than the rest of the course.

"The only problem with granular is that we have a bit of a problem with people mashing it into the ground when we have a lot of play, but it does OK," he says.





Todd Lowe (wearing the white shirt) of the USGA holds a soil sample while discussing nutrient management with a golf course superintendent and green committee. Photo: USGA

Like most superintendents, Hevey is constantly tinkering with his fertility program. Last year, for instance, he used Polyon time-release fertilizer to make it last longer.

"They say you can put it down at a high rate and have it last all year, but there's not enough research yet," he says. "It will be great for baseball fields, college areas, maybe roughs. I'm not sure about closely mowed areas. We put it in the fairways and roughs, and it worked well. It's pretty expensive. That's one of the drawbacks."

Although fertigation is becoming a big deal, Hevey doesn't use it.

"It's a little expensive, and I don't think my irrigation system is good enough for it," he says, noting the system was installed in 1987. "I have a lot of heavy clay soils, so I don't have to water as much as other people; but it doesn't take as much water to get the ground where I want it to be," he says.

#### STICK TO THE BASICS

Experimentation with fertility programs can be good and bad. Bud White, the mid-continent region director for the USGA Green Section who's based in Carrollton, Texas, says superintendents need to be educated.

"Guys need to do regular soil tests," he says. "They need to have that as a part of their program

— how they build their fertility. Some companies have alternative fertility programs, but they don't base them on sound soil tests all the time. That's a mistake. Their claims are made about different products, and there's no university research. There's no proof they're beneficial. Testimonials aren't the same as university research about a product."

Every fertility program has its basis in NPK, a necessary fundamental.

"A lot of people have gotten away from a basic sound nutritional program," White says. "Many alternative programs don't have a basis in science. It's been happening throughout the last four or five years, and they've started to spread. NPK is still the best program."

For young people coming into the profession, White stresses focusing on the basics.

Superintendents also should stay mindful of the fact that fertility programs go hand-in-hand

with water management.

"Too much water can move phosphorous and nitrogen to ground water," White says. "Those are the main polluters of fertility. A modest amount of fertilizer can run off when a guy is overwatering. You have to manage your water programs as well as fertility for environmental concerns and good turf management."

#### A GOOD MIX

An example of experimentation and region-specific practices can be found in Florida. Bill Brousseau, the director of golf course maintenance at The Club at Admiral's Cove in Jupiter for 18 years, and his two superintendents, Steve Judd and Shannon Wheeler, have concocted a special fertility program that works well at his 45-hole facility. "What we're doing is working for us," he says. "I don't know if it would apply to someone else. It's a different ball game everywhere you go."

The Bermudagrass courses Brousseau maintains lie on sandy soil, of which he takes samples twice a year. The results provide a benchmark for his applications even though there are separate programs for the greens and the rest of the course.

"We go out on a monthly basis with a granular fertilizer, and depending on the time of year, what we want to achieve and weather conditions, that will pretty much dictate what fertilizer we put out each month," he says about areas other than the greens.

On the TifEagle greens, Brousseau uses a granular fertilizer two or three times a year.

**"Some companies have alternative fertility programs, but they don't base them on sound soil tests all the time. That's a mistake."**  
**— BUD WHITE**



After the granular applications, he sprays the greens to maintain a constant, manageable growth.

"Generally, we use a granular when we're going into our aerification program," he says. "We do a lot of aerifying, verticutting and topdressing. We manage to keep an 18-hole course closed for 30 days so it's healed like nothing ever happened."

Because the turf grows aggressively, Brousseau must closely monitor his fertility program. For foliar applications on greens, he uses various products in his spray tanks.

"We've got our secret recipe that we would never divulge," he says with a laugh, adding that he truly would be happy to share with his peers who are interested.

Rainfall and the time of year also factor into Brousseau's program.



Corcoran

"When we get into periods of large rainfall, it could leach our soils," he says. "We like to keep the turf lean and hungry. Keeping thatch levels down helps keep out disease."

Lowes sees many superintendents in Florida using



Hevey

sprays and special mixtures.

"Because our standards are increasing, the goal is to maintain a consistent putting surface, so light, frequent applications are the trend," he says. "Because our greens drain well, they lose nutrients quickly. It's in constant flux. In the Southwest, the program will be different because they get less rain."

**PLAN AHEAD**

At Oak Hill Country Club in Rochester, N.Y., superintendent Jeff Corcoran must work diligently to maintain his mix of the right amount of fertilizer for the time of year and soil conditions. During the winter months, he doesn't have to worry as much as superintendents in the South. He uses the time to plan.

"We go through agronomic planning every year, in February and March," he says. "We take our fertility plan and agronomic issues and do a rough layout for the course for the year. We talk about the products we might use. It's a base

plan, a projection."

Corcoran evaluates his fertility program every year and tweaks it a bit. His base program stays the same every year, but there are always new products or technology or formulations that he might want to try.

"Seldom do we go wholesale with a new product," he says. "We do a test mode and slowly incorporate it into our program."

Unlike Hevey, Corcoran uses his irrigation system to augment his fertility program. He uses fertigation primarily on tees, fairways and rough. "But there are times of the year when you get lots of rainfall and can't rely on fertigation as a primary resource," he says.

Oak Hill has hosted several major tournaments throughout the years and is viewed as one of the country's best courses. Therefore, Corcoran does his best to stay on the cutting edge, which, at the moment, means sticking with the program he's developed throughout

the years.

"Nothing at the moment strikes me as real innovative," he says. "We've always stuck with a foliar program on the greens. We spoon-feed. We're about 90-percent foliar on our greens."

Throughout the golf season, Corcoran applies foliar fertilizer, then granular fertilizer. He also uses organic fertilizer lightly in coordination with aerification and tries to go lightly with nitrogen, especially on the greens.

"You have to get the right combination, not too light or heavy," he says. "It's being out there and observing the clipping yields we get off the greens. You get a real feel after a while from a visual inspection. A lot of it is experience and being out there every day. Some of it's intuitive." **GCI**

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# A PERCEIVED VALUE

Despite the rewards, some superintendents are ambivalent toward purchasing programs

Many companies – including hotels, airlines and even banks – have them. Points. Companies want consumer loyalty, and they try to earn that by rewarding them with points when purchasing goods or services. Chemical companies are no different. They want the loyalty of golf course superintendents.

But because maintaining golf courses is a business, the purchasing habits are different than an average consumer trying to rack up points to fly to a warm destination in the dead of winter. For the superintendents, it's all about the product. For the suppliers, it's about saying "thank you" for their business.

Syngenta Professional Products and Bayer Environmental Science have similar programs that probably are the most well-known in the industry. Although not a points-based program, BASF's early-order program is well known, too.

#### THE PROGRAMS

GreenPartners ([www.greencastonline.com/greenpartnersnm/index.html](http://www.greencastonline.com/greenpartnersnm/index.html)) has been around for eight years in one form or another and has been called GreenPartners since Syngenta was formed in late 2000. A strong majority of Syngenta customers take part in the program, says Joe

DiPaola, Ph.D., golf market manager for Syngenta. Even though superintendents say they buy Syngenta products because of their effectiveness, not because of a loyalty program, DiPaola says the GreenPartners program is a simple "thank you" to them. The GreenPartners program also is an extension of Syngenta's brand and helps remind customers of the company, says Margaret McLean, senior marketing communications manager, Lawn & Garden for Syngenta.

Superintendents can redeem points for a variety of items including turf equipment, education, training videos, airline tickets to a conference and agronomic tools. They also can donate points to associations and universities. But not one product or area is redeemed much more than others, says Norman Barclift, loyalty marketing manager for Syngenta.

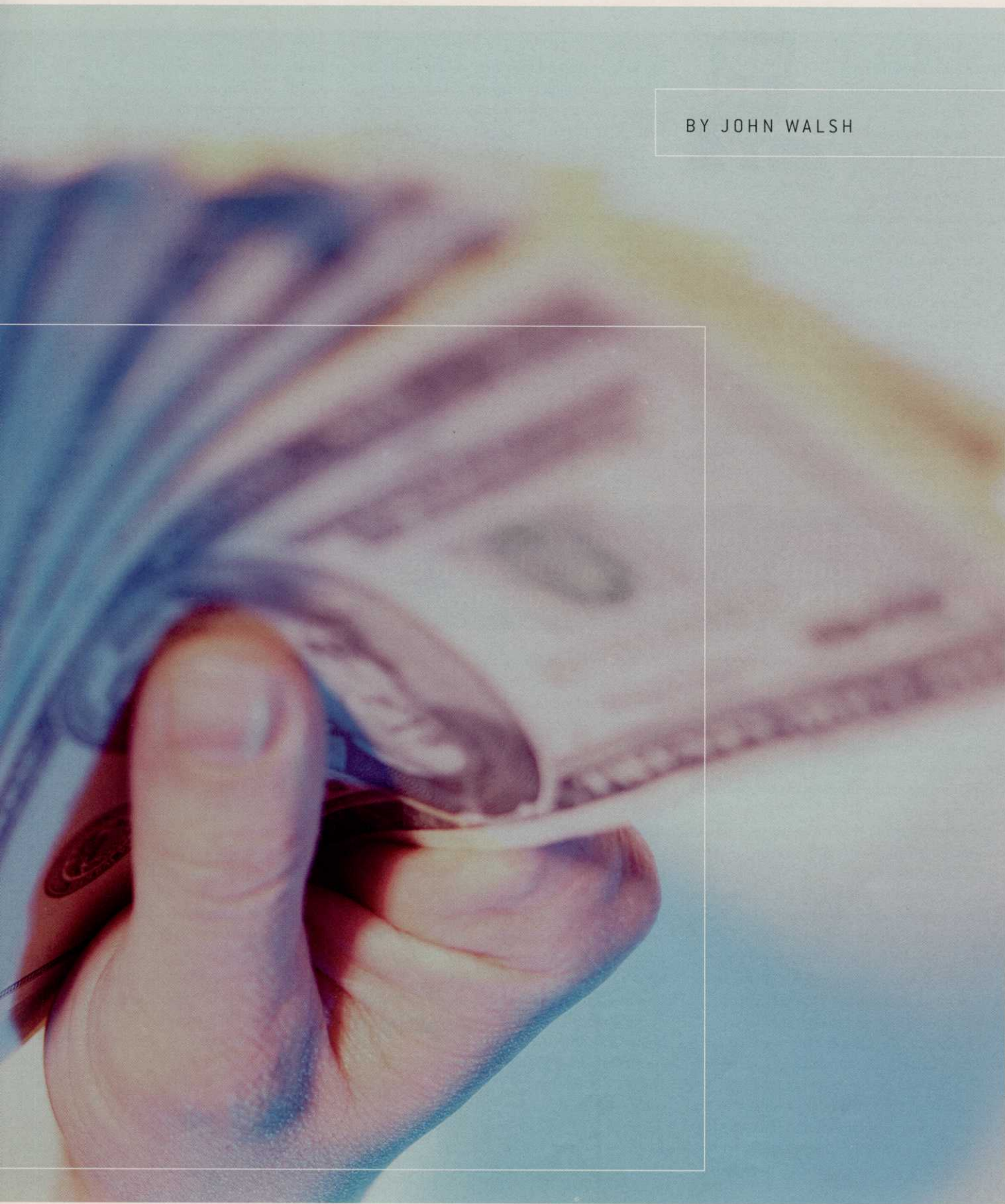
Throughout the years, the number of "goodies" such as caps and jackets that were rewarded has decreased substantially, DiPaola says.

"While those were done to increase brand awareness, the program today is focused more on business tools and giving superintendents the ability to reward their crews," he says.

GreenPartners also features a Uniquely Yours program



BY JOHN WALSH





in which superintendents can redeem points for something that's not typically available through the program. They can work with Syngenta to customize something for their operation.

"The points belong to the course, and we want to make sure these items are applicable to the business," McLean says.

At Bayer Environmental Science, the intent of the company's Accolades program ([www.accoladesrewards.com](http://www.accoladesrewards.com)) is to reward the best, most loyal customers with additional incentives, says Jason Kuhlemeier, marketing services and project manager for Bayer. Superintendents can redeem points for things such as educational opportunities, training materials, equipment and tools like digital cameras. The best Accolades



DiPaola

for four years and was first called CrewPack because the company wanted to focus on rewarding not only the superintendent, but his crew as well. Rewards that were part of the CrewPack included gloves, jackets and turf-stress identification glasses.

"At the least, we wanted to give something to superintendents that would help them out, such as the turf-stress disease glasses," says Bob York, marketing associate for BASF Professional Turf & Ornamentals. "TVs, computers and things like that were never part of the program."

Now the program is called ProPack.

"We don't do give-a-ways anymore," says York. "We established a turf council that consists of superintendents and asked them what they wanted in an early-order program. They wanted products at a good price, and they didn't want us to change the price of products during the year. BASF changed its program recently.

more, a 6-percent credit.

The number of superintendents participating in the program has doubled every year for the past three years, York says. He declined to say exactly how many superintendents are part of the program or what that percentage is related to all of the company's superintendent customers.

BASF evaluated the program in February to see how well it worked last year. It will make tweaks to the program based on the assessment.

"A lot of decisions are based on the turf council," York says. "We want it to be easy for superintendents to follow and use the program."

Some superintendents enjoy having the Dec. 15 deadline because they know what core products they'll use the next year, York says.

#### LACK OF VALUE

Yet, with all the possibilities reward programs offer, some superintendents are ambivalent about them because they're more focused on budgets and the need for particular products.

Bruce Worzella, CGCS, at West Bend (Wis.) Country Club, spent \$53,500 on pesticides last year. He earns points from Bayer's and Syngenta's programs and turns them over to purchase GCSAA merchandise. He bought a TV for the shop so the staff can watch the Superintendents' Videomagazine, as well as a digital camera and GCSAA books with reward points.

All the points he earns are turned back into the facility. He says his distributors do a good job of keeping track of the points he earns. Despite his involvement with the programs, Worzella would prefer a price discount.

"They should just lower the price of pesticides," he says. "If companies would be more competitive in price with generics, then we would benefit more from that."

Like Worzella, Scott Schraer, CGCS, at Scioto Reserve Golf & Athletic Club in Powell, Ohio, buys products early in the beginning of November and December from Syngenta and Bayer, earning reward points.

"I used points once a while back to buy pesticides, but points don't mean much," Schraer says. "I want the savings or a discount on the cost of the pesticides."

But DiPaola says lowering the price instead of earning rewards is like comparing apples and oranges, like comparing a capital expenditure

**"I'm not going to buy a product because of points. It comes down to cost and service from the sales reps." - SCOTT SCHRAER, CGCS**

customers can ask for things they need that aren't available on the Accolades Web site.

"Some customers manage Accolades points more intensely than others," Kuhlemeier says. "Some superintendents may hold on to their points for a while to purchase things like a (John Deere) Gator. But the program isn't exclusive to one supplier."

Accolades points don't equate to a dollar amount. For example, one 30-pound bag of Merit equals 50 points.

For the most part, the program is the same as it was in 2003. However, in mid-2004, Bayer implemented a paperless points system for the program so users could track their points electronically, eliminating the need to make copies of their invoices and submit them to Bayer – although some still prefer to do it that way.

Throughout the years, the program has been successful, and the number of participants has grown each year, Kuhlemeier says.

"There aren't any significant changes on the horizon, but we will continue to look for ways to enhance the program," he says.

BASF's early-order program has been around

"We are not as big as the other guys, so we need to do things smarter or better," York says. "Distributors are important to us, so if a superintendent orders so much, they get a rebate that goes to their account with the distributor. They can use that to buy other products, even those that aren't BASF brands. Superintendents don't want to be told what to buy. They say it's an easy program."

As part of the program, superintendents need to buy any BASF-branded fungicide, herbicide or insecticide (which can be a single product or any combination) before Dec. 15 to earn credit with their turf supplier to save on future purchases on anything they sell. If they buy a minimum dollar amount (\$5,000 to \$9,999), they'll receive a 3-percent credit. The company doesn't offer anything below \$5,000. If they spend between \$10,000 and \$14,999, they receive a 4-percent credit; between \$15,000 and \$19,999, a 5-percent credit; and \$20,000 or



Kuhlemeier



budget with a maintenance budget.

Worzella's fiscal year is from Nov. 1 to Oct. 31, so most of his ordering is done for the following year in November or December. Because of that time frame, he can take advantage of discounts and can hold off paying distributors until May. Worzella, who has a maintenance budget of \$677,000 including labor, hasn't used reward points to purchase more pesticides, and he never uses all his points by year's end.

"I don't spend them just because they're there," he says, adding that he's been part of frequency programs for about five years. "I look at the amount of time and money Syngenta or Bayer invests in bringing a product to market. I have loyalty to the companies who spend the money in the long term. I know superintendents who have a different view of that, but I can lean a little more on the company if there's a problem down the road.

"I look at the best price for the best product," he adds. "These programs are insignificant. It's just something to make you aware of the products. If they didn't have the loyalty programs, I'd still buy from them."

Schraer says he doesn't use points regularly because he doesn't spend the time keeping track of them because he has other priorities.

"For me and my club it boils down to price," he says. "I have a stringent budget. But I'm not saying any one product is better than another. I'm not going to buy a product because of points. It comes down to cost and service from the sales reps. I give my business to as many people as possible, not just agency products.

"Points aren't an incentive," he adds. "Products sell because they work, not because you can get a weed eater. I'm not going to let points dictate how I buy products."

Dave Phipps, golf course superintendent at the 18-hole Stone Creek Golf Course in Oregon City, Ore., purchases branded and some generic pesticides from many suppliers. He might be part of Syngenta's GreenPartners program, but he's not sure because that's something one of his distributors would have signed him up for.

"The frequency or points programs don't have an impact on what I buy or who I buy from," he says.

Of all the rewards items Phipps has heard about - everything from tools to computers - he could justify some things but would have difficulty accepting a gift that would ben-

efit himself personally. However, he wouldn't have a problem with items that would be considered giving back to the industry.

"It's the club's money, so if anybody should benefit, it should be the club," he says. "I hope people have a conscience when they spend their points."

Some public golf courses have strict guidelines because employees are on the public payroll. But Phipps, whose maintenance budget is \$619,000, is on a private payroll because he works for a management company, Total Golf Management Services, which operates the municipal course.

Another reason a frequency program isn't that important to Phipps is his location, the Pacific Northwest, where disease pressure is lower than other parts of the country.



Phipps

"We don't use a lot of insecticides and fungicides," he says. "For example, I've never seen fusarium patch. We have bentgrass greens that I spray two or three times a year. At most, some guys are spraying their bentgrass greens once a month. We don't stand to gain much from the frequency programs."

Refuting superintendents who say the programs aren't valuable, DiPaola cites the number of superintendents in the GreenPartners program and their purchasing behavior.

"There are a significant number of people taking advantage of the program," he says.

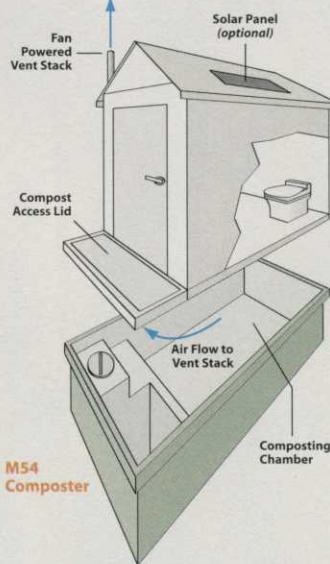
And despite superintendents saying they don't perceive value in rewards programs, Schraer says he gets it.

"If you're at a club where you can buy tools you normally won't buy, then it's valuable," he says. "It's an option to purchase something you normally wouldn't buy." **GCI**

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The GCI staff presented the 2007 *Golf Course Industry* Builder Excellence Awards at the Golf Course Builders Association of America's awards dinner, which occurred in conjunction with the Golf Industry Show in Anaheim, Calif. Four awards were presented. SEMA Golf won the Creative Award for best new construction with Toscana Country Club in Palm Springs, Calif. Landscapes Unlimited won the Heritage Award for best reconstruction with Fiddlesticks Country Club in Fort Myers, Fla. Aspen Corp. won the Legacy Award for best renovation with The Old White Course at The Greenbrier in White Sulphur Springs, W.Va. And Heritage Links won the Affinity Award for best environmental project with Liberty National Golf Club in Jersey City, N.J. The following four articles depict these award-winning projects.



The South Course at Toscana Country Club features lakes, streams, waterfalls and palm trees set across newly created rolling terrain. Photo: Joshua Klyne



# A FIRST-CLASS facility

Attention to detail and addressing issues trump weather and tragedy to complete a high-end development project

BY DOUG SAUNDERS

In 2003, William Bone, founder and c.e.o. of Sunrise Co., set the ambitious goal to create the finest private equity golf club in a region that's already home to some of the most prestigious golf addresses in the world: Palm Springs, Calif. Bone owned a prime 640-acre parcel of land in the Coachella Valley since 1985 and, after several tries during the past few decades, he was ready to make that dream come true.

Bone's vision included a luxury residential community, 36 holes of golf (27 of which are complete to date) and all the amenities expected at a first-class facility. He thought obtaining the services of designer Jack Nicklaus would provide the project instant recognition.

That vision became a reality when Toscana Country Club opened for play December 2005 after a 14-month construction process managed by Scottsdale, Ariz.-based SEMA Golf. Not only did SEMA build 18 holes of golf, water features and bridges in 14 months, it completed another nine holes within budget while sharing the site during the creation of the housing infrastructure.

"Many builders in the industry were interested in this project because it was going to be such a high-profile job," says Bob Steele, president of SEMA. "We were fortunate to be awarded the contract and spent three months planning and meeting with various team members before we even began work."

The relatively flat, sandy land actually had a cross slope of 200 feet, and more than six

million cubic yards of dirt were moved during the mass excavation to prepare the site for golf course and home construction during a four-month period.

Nicklaus designed two distinctly different types of golf courses for Toscana. The South Course, which was built first, is a classic Coachella Valley-type course featuring many lakes, streams, waterfalls and palm trees set across newly created rolling terrain. The North Course is more of a desert-type layout featuring numerous rock outcroppings with green fairways as sharp contrasts to the desert terrain that frames each hole.

"These two styles called for carefully following the grading plans to create the proper perspectives," Steele says. "One of the enjoyable things about working on these flat sites is using machines as creative tools to develop interesting landforms. The desert is a palette, and our shapers become the artists."

Building Toscana was the second collaboration between Nicklaus and SEMA, who built the Outlaw course at Desert Mountain in Scottsdale, which won the Creative Builder Excellence Award in 2005 ("Making it happen," March, p. 32). Having worked with the Nicklaus Design team before also was an advantage for SEMA.

## OPEN LINES

The key aspect of such an ambitious project was developing a clear line of communication between the developer, the design team, and all





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**AT A GLANCE**  
**Toscana Country Club**

**Location:** Palm Springs, Calif.  
**Type of project:** New construction  
**Cost:** \$11.7 million  
**Construction started:** November 2004  
**Course opened:** December 2005  
**Builder:** SEMA Golf  
**Architect:** Nicklaus Design  
**Golf course superintendent:** Rick Sall  
**Owner:** Sunrise Co.

Original plans for Toscana called for about 160 bunkers, but as Jack Nicklaus and William Bone changed things when visiting on site, the project finished with 223 bunkers.  
Photo: Joshua Klyne

of the subcontractors whose input and commitment were critical for success. Gary Peterson, golf course construction manager for Sunrise Co., oversaw the construction.

"We've done many projects similar to this but not on this grand of a scale," he says. "I had a solid idea of where the numbers should be when we took this project out to bid, and every builder was interested in being a part of the project. We settled on SEMA after several interviews. This was my first experience working with SEMA, and I was impressed with its attention to detail and willingness to address issues as they arose."

It was Peterson's position to formulate a time-line schedule for the project and then focus on keeping things moving along. Because so many facets of the project were dependent on the production of each subcontractor, it was a daunting task. Peterson held daily meetings with Brandon Steele, the construction superintendent for SEMA, and the various subcontractors. He also held regular meetings with Nicklaus site coordinator Tom Soileau, designer Jon Garner and Brandon Steele.

"SEMA Golf's strong point was always be-

ing able to take care of simple changes as they arose," Peterson says. "For example, the original plans called for about 160 bunkers, but as things changed during on-site visits by Jack and Mr. Bone, we ended up with 223 bunkers. But those changes never slowed down the progress because SEMA took care of these types of changes immediately."

Through a clear line of communication and detailed paperwork, change orders were kept to a minimum, which helped keep the job within the \$11.7 million budget. Progress continued on time despite having almost 1,000 workers on site during the height of construction.

"Having worked with Nicklaus before helped us to understand the process from the designers perspective," Steele says. "We learned what things the on-site designer could deal with and what things would need Jack's input. This helped us have things ready before Jack's visits, which would help him with his task."

**MOTHER NATURE**

Weather can be a factor in any construction project, and in the Palm Springs area, the biggest

