

"We'll baby the turf through it and plan to deep-tine the following spring to compensate for it. We'll continue to adjust, steering toward a more conventional turf management program as we increase revenue."

#### SCALING BACK

Hillcrest Country Club in Long Grove, Ill., is an 18-hole private course northwest of Chicago. About a third of the course's soil profile is predominately black peat dredged from mid-course wetlands during conversion of part of that area to an irrigation pond. The remainder is silty loam, with the exception of the push-up greens. The greens, tees and fairways are a combination of

*Poa annua* and bentgrass, and the roughs are a mix of bluegrass and ryegrass.

George Ott, CGCS, has eliminated early spring granular fertilization on greens, opting for a dormant application of slow-release organic fertilizer with at least half a pound of nitrogen, balanced with phosphorus and potassium.

"We generally apply it in early November, following a similar granular fertilization in September or early October," he says. "Our previous program was pushing too much top growth too early. Now we don't make another granular application until the end of May or the first part of June, depending on the weather."

Ott recently started matching the frequency

Iain Sturge, golf course superintendent at Hidden Valley Golf Course in California, has implemented an unconventional turfgrass program because of previous course neglect and a reduced budget. Photo: Hidden Valley Golf Course



of greens topdressing with turf growth.

"We watch the quantity of clippings the greensmowers are getting," he says. "As the baskets become fuller, we increase the frequency and might even topdress every week for a while. We used to topdress every three weeks all season long. The adjustment keeps our surfaces firm and maintains the faster green speed our golfers want."

Management implemented budget cuts in 2007, adapting to the regional market, but Ott anticipates a return to previous funding levels within the next year or two. He has cut his staff to 11 from 15 and is adjusting maintenance practices to reduce expenditures while striving to retain quality levels.

"Instead of two postemergent applications for broadleaf weed control, we made one application

about two weeks later than the first application of previous years," he says. "It allowed more weeds to germinate, so there was a short period of visibility to our golfers, but the delay accomplished an effective eradication. It saved the costs of labor and herbicide for a second application."

Despite the budget reduction, a new irrigation system installation was completed in the spring of 2007. Now, the system has twice as many heads on the fairways, set in three rows rather than two, for better coverage control and greater efficiency.

"With the radio-operated system, we can turn on a single head for a quick syringe instead of sending an individual to hand water by hose, which allows us to allocate that crew time to other areas," Ott says.

#### MEETING TURF NEEDS


The Country Club of Buffalo in New York is on the site of a former stone quarry. Part of the course is built on the Onondaga Escarpment, the limestone shelf that extends from Ontario, Canada, to Syracuse, N.Y., and is responsible for

the formation of Niagara Falls. Six of the greens lie below the escarpment, and 12 lie above it. The pH of the soil and natural water source are high. Turf on the greens, tees and fairways is a mix of *Poa annua* and bentgrass. The roughs are a mix of ryegrass, Kentucky bluegrass and *Poa*.

Jim Frank, CGCS, is in his 14th year as golf course superintendent, and when he started, the greens were still 100-percent native soil.

"It's been an opportunity and a continuing challenge for me to promote a competitive putting surface in today's world," Frank says. "We've used multiple drill-and-fill procedures over an extended period, incorporating sand to an eight- to 10-inch depth. We've worked through all the issues of layering and the variances of physical and chemical properties within the sand. Even when constructing a new green, the cation exchange and the nutritional inputs can vary significantly, so with our older greens we've needed to adjust the nutrition and aeration to the overall properties of the soil and try to match turf needs. The designer, Donald Ross, was a genius moving water off the greens, so we haven't needed to install additional drainage."

Weather conditions are a continual challenge.



Superintendent Iain Sturge has focused on reducing the *Poa* population on the course and improving the health and increasing the density of Bermudagrass. To help reduce stress on Bermudagrass, he won't overseed this winter. Photo: Hidden Valley Golf Course

Excessive rains as remnants of a hurricane might sweep through. Winter snows might start as early as October and continue into late spring with Lake Erie, the shallowest of the Great Lakes, freezing from shore to shore some years.

"Once September arrives, we need to aerify and verticut, and when it seems we've done enough, we do a little more," Frank says.

"The blizzard of October 12, 2006, that dumped two feet of snow and brought seven- to 14-day power outages hit our course hard," he adds. "We ended up removing more than 250 damaged trees. That turned into a good thing for our turf, creating additional air circulation and opening some areas to coverage by our irrigation system. Adjusting maintenance practices to the altered microclimates was a little thing compared to the benefits."

Frank only spot-aerifies greens in the spring, punching areas that have a tendency to dry out or wilt the quickest.

"I've added more verticutting to our program, just tickling the surface more often for grooming," he says. "I'm experimenting with subbing deeper verticutting for core aeration. There's less surface disruption and the results are surprisingly positive."

Another change is the use of a new greens-mower with floating head technology.

"It's ironic, but we're mowing the greens lower, yet doing less damage and causing less stress," Frank says.

#### BETTER BALL ROLL

Located in the Willamette Valley of Portland, Ore., the state's top grass seed production area, Waverley Country Club was constructed in 1896. Its soil profile is silty loam with one small pocket of heavier clay.

"With our climatic conditions, we're growing *Poa annua* whether we want to or not," says golf course superintendent John Alexander, who has been at Waverley for 11 years. "We've decided to encourage it on the greens, tees and fairways. We have some in the rough, along with rye and some spots of fescue and bent."

With the amount of rain the area receives, drainage is always an issue at Waverley.

"Though some top-end clubs lightly topdress weekly, our budget only allows four to six applications of about a 16th of an inch each time," Alexander says. "We've found providing the plant with oxygen and keeping the soil drained is as beneficial as fertilizer."

Alexander and his staff core aerify the greens twice a year to maintain the firmness they want.

"We plan to core aerate the fairways twice, too, but if spring conditions preclude that, we'll compensate with a Vertidrain or a couple spikings," he says. "We're opting for more solid tining and spiking. The process is so nondisruptive with the rollers, the golfers hardly know we were there."

Summers are typically mild, with little rain from July through September, yet keeping the *Poa* healthy is a balancing act.

"We'll see afternoon stress and irrigate to about 80 percent of the ET rate, just enough to keep the *Poa* alive and get the playing surface we want," he says. "If we went to 100-percent ET replacement every night, we'd create too many soft spots. We'll have three to five crew members hand-watering dry patches most days."

Alexander uses wetting agents to keep the surface firm and water percolating during the

frequent dry down and rewet cycles. He and his staff have started verticutting the greens weekly, reaching about one-sixteenth of an inch below the surface.

"We're not fighting grainy or thatch conditions with *Poa*, just creating better ball roll," he says.

Alexander also has adjusted his fertilization program, basically spoon-feeding the greens with a spray application every seven to 10 days. He also applies two granular applications a year in the fairways.

"We spray them every 14 days, putting down no more than 0.2 pound of nitrogen at any one application," he says. "We add Primo about every three weeks. It doesn't cut mowing frequency, but reduces clippings and improves the tightness of the turf for better ball roll." GCI

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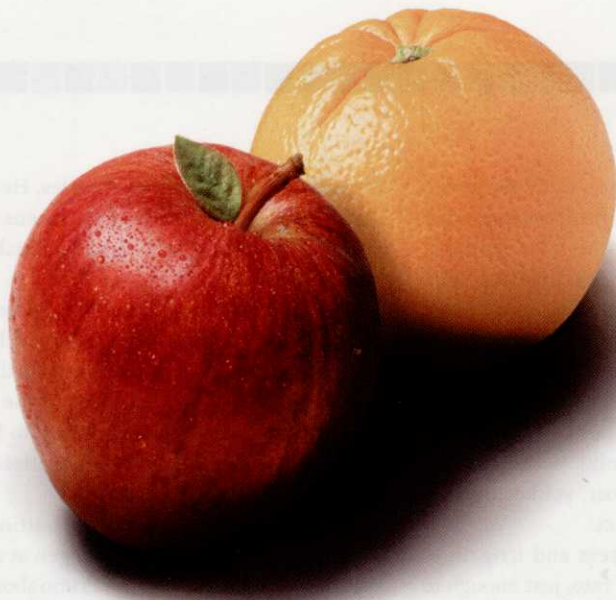
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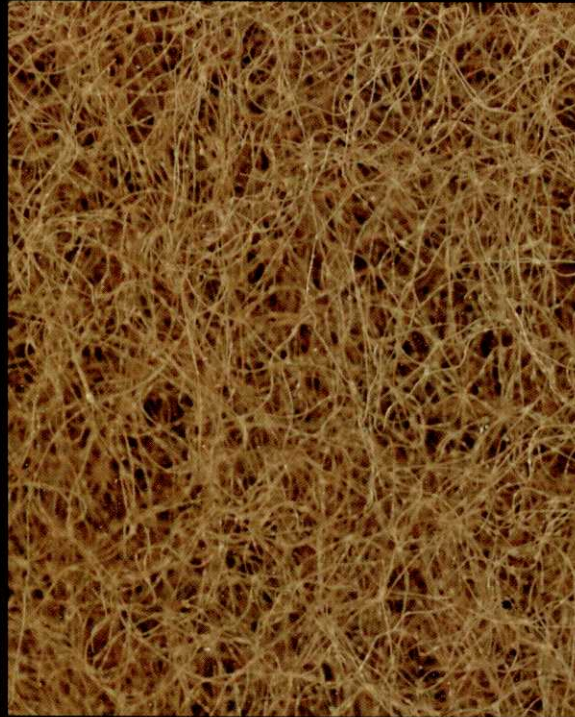
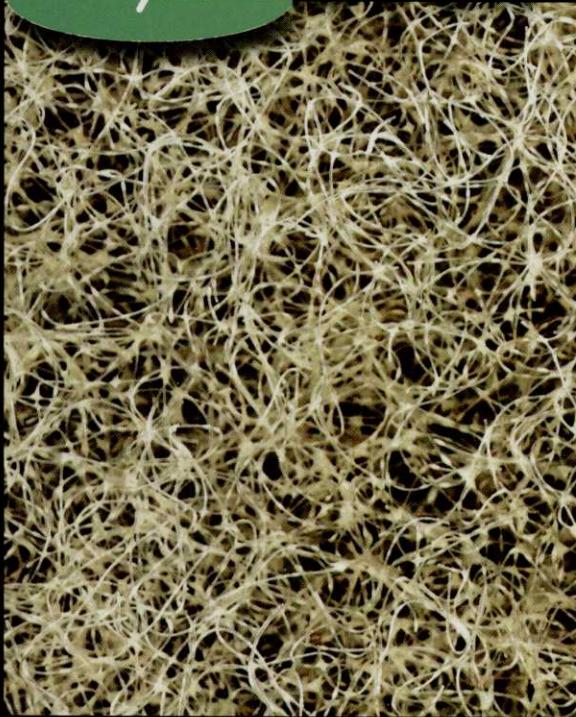


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THE OTHER GUYS

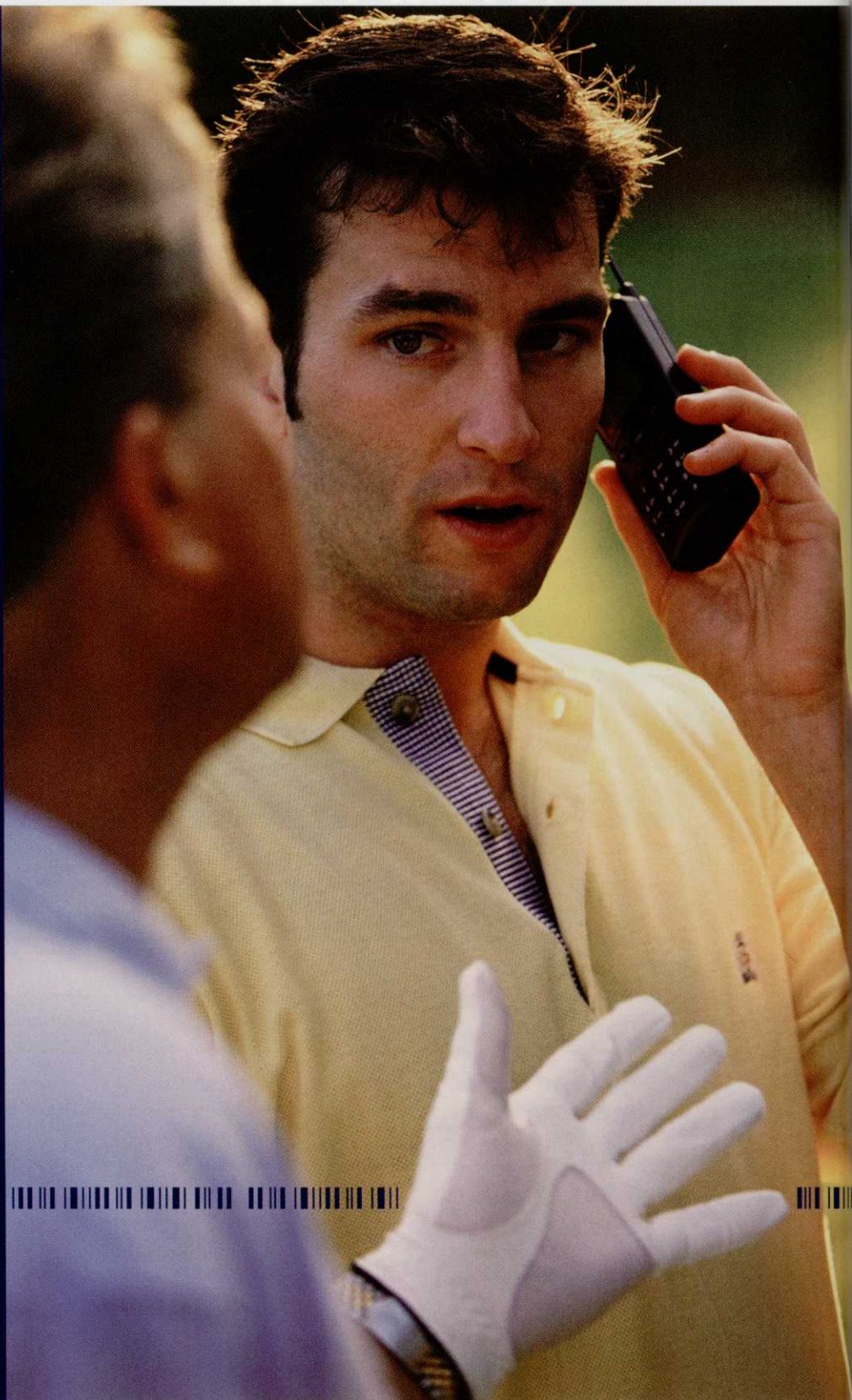
DAVID TRAPPER

RELIABLE

Chemical  
manufacturers  
support  
superintendents  
and the industry  
in various ways

RESOURCES

BY JOHN WALSH



Feeling more pressure from companies selling generic pesticides in the golf market, chemical manufacturers continue to focus on distinguishing themselves not only by the products they make but also by the support – aside from research – they provide the industry and golf course superintendents.

Bayer Environmental Science offers a solutions approach to golf course superintendents to address their individual problems.

“If you look at a golf course superintendent, he’s providing a revenue stream, so we want to help make sure that course is at or above expectations,” says Scott Welge, director of marketing for the green professional business. “For each situation, we build programs, and we’re never afraid to recommend a competitive product if that product works best in a program approach. But we’re not just selling a product, we’re selling a solution. It’s your reputation on the line. We’re trying to establish and extend long-term relationships – that’s what it’s all about.”

“If you look at it from research and development, Bayer is all about innovation and new technology,” he adds. “Our objective is to introduce new technology that adds value to golf course superintendents.”

Dow AgroSciences, which has a dedicated business unit offering solutions to golf course superintendents, invests its profit in future pesticide products, among other investments.

“We continue to invest in the industry on a national and local level,” says Mark Urbanowski, senior marketing specialist for the turf and ornamental business. “We invest in associations and universities to help promote golf.”

Additional support comes from Dow’s sales representatives and researchers, who are called on for various needs.

“We’re consulted a lot to help with major tournaments, especially with overseeding,” Urbanowski says. “We start a year ahead. Our reps will recommend our products, as well as other company’s products, so superintendents can be the best they can be. Our company culture is to help meet the needs of our customers, even if that means recommending other products. Long term, if superintendents know you’re a partner, they’re more likely to invite you back.”

When a superintendent buys a product from Syngenta, he’s buying more than just a product, according to Dave Ravel, golf market manager. Syngenta assists superintendents with such things as sprayer nozzle selection (making sure the right one is used), pesticide usage and volume rates.

“It comes down to making sure you get uniform coverage,” Ravel says. “In some cases, you want the product to get down into the crown, so you would want to use a different nozzle.”

The company has a tech platform, called GreenCast, which is a Web site containing information such as historical data for disease predictability and weather conditions that help superintendents make informed agronomic decisions.

“We look at what superintendents need and provide them a solution that fits their problem,”

Ravel says. “If we don’t have a solution, it’s our job to recommend something that will work.”

From a historical perspective, FMC has been primarily an insecticide company, but the past three or four years it has focused on the turf market, according to Rick Ekins, product manager for turf and ornamental.

“We’re establishing close relationships and open communication with superintendents to find out what problems they can’t solve or are looking for a better way to solve,” he says. “Our mission at FMC is to find those product solutions that fit the needs in the golf marketplace.”

The company provides support in many ways, one of which is the most basic – the telephone customer service center. Customers can call to receive product support and help with label interpretation and compliance, general use directions, spill or emergency issues, sediment testing or other service-related problems.

FMC, which has offices in Washington, D.C., also works on behalf of superintendents on regulatory- or EPA-related pesticide and application issues.

“We are very active at the legislative level, working on issues that impact our industry today and in the future,” Ekins says. “We work daily to influence policies that reflect appro-



Green Start Academy is an example of Bayer’s support for the industry. Photo: Bayer Environmental Science



Urbanowski



Bucci



Ravel



Schwartz

appropriate product stewardship and safety while maintaining product use reflective of what the end-user needs.”

FMC also provides support for superintendents through educational workshops, some of which enable them to maintain pesticide application licenses. The company, through its field technical and sales reps, helps superintendents stay abreast of new technologies. It also performs diagnostic work for them.

“We’re investing in the future of the superintendent’s business,” Ekins says. “If they have an issue they can’t resolve, it’s our business to find that technology. We ask, ‘What’s going to plague them in the future, and how we can fill in those performance or sales gaps now.’”

Although DuPont reentered the turf and ornamental market only recently (in 2004), the golf market is important to the company, says Nancy Schwartz, marketing manager for turf professional products. The company supports local and national GCSAA meetings and funds education for superintendents.

“Superintendents in many states rely on local university professors and us to introduce products and research to the golf community,” Schwartz says. “Chuck (Silcox, Ph.D., the turf and ornamental product development manager,) has partnered with Patricia Vittum, Ph.D., at the University of Massachusetts to host a seminar at the 2008 Golf Industry Show. It’s a new half-day seminar about turf insecticides modes of action and resistance management. We will also be sponsoring the Internet Cafe at the show to help superintendents stay con-

nected while away from their course.”

Schwartz says DuPont looks at what it can do to help superintendents. One recent example is its series of regional webcasts that provide superintendents with access to the latest industry research and insect trends from their local university researchers and DuPont scientists.

BASF is looking to meet the needs of the market, not just go to market with a product simply to talk about something, says Toni Bucci, business manager for the T&O division of the agriculture division. One of the four pillars of the company’s business model is helping customers be more successful. The T&O division provides online training for end users and distributors, helps distributors market products and helps them manage their business. Overall, the company tries to be proactive.

“We need to anticipate the hot topics that affect pesticide use,” Bucci says.

Cleary Chemical’s business philosophy is

based on forming partnerships with its customers. As an owner/operator of its own golf course for the past 53 years, Cleary understands the challenges superintendents face first-hand, says president Mary Ellen Warwick.

“By really listening to the ideas and suggestions of superintendents, we’ve been able to develop products and support programs that get results,” Warwick says.

#### ADDITIONAL SUPPORT

Green Start Academy, an educational program for assistant superintendents, is another example of Bayer’s support for the industry.

“There’s very little product-sales-type information presented,” Welge says. “It’s more focused on such topics as best management practices, water and resource management, networking opportunities, and interaction with industry-leading golf course and grounds directors who are available to provide feedback and address issues such as career development.”

Bayer also has been sponsoring five superintendents to attend the GIS. These are superintendents who haven’t attended in the past two years and are financially challenged to attend.



Chemical manufacturers stress the importance of the solutions to problems, not just pesticides, they provide superintendents.

#### > COMING IN JANUARY:

**Chemical manufacturers support the industry through research and field reps.**





Silcox



Warwick



Welge

“If we don’t have a solution, it’s our job to recommend something that will work.”

- DAVE RAVEL

On a more local level, the company also supports superintendents by sending turf samples to a sponsored lab to identify specific pathogens.

“Most of the time, our products are the best choice to combat the specific pathogen, but sometimes they’re not,” Welge says. “This is solution oriented where we want to provide what’s best for the superintendent’s individual problem.”

Nationally, Dow is involved with the GCSAA, Project Evergreen (a nonprofit organization representing the green industry) and the Responsible Industry for a Sound Environment (a not-for-profit trade association representing producers and suppliers of specialty pesticides and fertilizers). Locally, it supports the industry by devoting time and money to help superintendents with their jobs. Industry support beyond the local level includes research and development and sponsoring Web-based e-learning organized by the GCSAA and the Environmental Leaders in Golf awards program.

Dow also works to keep necessary pesticide products, such as 2,4-D, on the market.

“2,4-D is in almost all broadleaf herbicides,” Urbanowski says. “Superintendents might not know all the work Dow does to keep certain tools on the market.”

Clery’s support includes its Web site and monthly newsletter, which provide superintendents the most current research, disease and regulatory information. The Web site and newsletter also help superintendents with spray programs.

“We field 100 calls a week from superintendents and those in the greenhouse industry,” Warwick says. “We can take samples from superintendents, take them to universities and return

to the superintendents with solutions.”

As one of the oldest manufacturers in the industry and one of the founding members of the GCSAA, Clery is a long-time supporter of the golf course industry. The company has given scholarships to Rutgers students the past five years, is a member of all industry associations and donates to the Robert Trent Jones endowment fund for people pursuing careers in golf course management.

Warwick says superintendents can always pick up the phone and call the company for help.

“If you have a problem, we’ll help you get through it,” she says. “Between our field and technical support staff and our relationships with other superintendents, we’ll solve it together.”

#### SPECIFIC EXAMPLES

Chemical manufacturers can be a reliable resource to help superintendents in need. For example, a superintendent had a sprayer compatibility problem with a Bayer product while tank mixing, which can produce less-than-desirable results, Welge says.

“We sent actual product and water samples to our Clayton Development & Training Center, and it turned out the superintendent’s water pH level was extremely high, which was affecting the performance of the product.”

In a different situation, a superintendent was working with his green committee, discussing green speed, *Poa annua* and bentgrass. The superintendent called a Syngenta sales rep for support. The rep confirmed the superintendent’s observations, which allowed the superintendent to move on with support of his

green committee.

In a separate instance, a superintendent had an issue with odor from a tank-mixed application, so he called DuPont for advice, and the company leveraged its relationship with the University of Wisconsin and professor Chris Williamson, Ph.D.

“We concluded that a mixture of products caused the odor,” Silcox says.

Some superintendents travel to FarmLinks in Sylacauga, Ala., for solutions to their problems, and because BASF is now a partner with FarmLinks, the company can offer help. In other instances, the problem can be application related.

“When we launched Trinity, a superintendent called us and said he messed up one of his greens,” Bucci says. “We checked it out, and he had eight or nine products mixed in the tank. We helped him work through the problem. We’ll help superintendents with a problem even though it’s not caused by a BASF product.”

Ekins offers another example.

“Last summer, we responded to a turf injury call with our sales representative and two field technical service representatives to investigate the cause of injury,” he says. “Quick response and a vast knowledge base among our field reps helped gain an understanding of the situation and provide the superintendent with answers to his questions. We discovered the cause and recommend a resolution that worked.

“We strive to establish our field personnel as resources so superintendents can get valid, reliable, timely information to help them deal with their problems,” he adds. “If you establish yourself as a go-to person, those calls will happen more often.” GCI

BY PETER BLAIS

# WHAT LIES BENEATH

A subsurface air and drainage system and a ceramic soil mix improve greens at a Chicagoland club



Westmoreland Country Club reopened this past summer following a renovation project – and a bit of agronomic drama – which, to the naked eye, changed nothing. Below ground, however, there's a new reality for golf course superintendent Frank Heery.

Working with architects at Arthur Hills/Steve Forrest & Associates and builder Golf Creations, Heery oversaw the installation of a new subsurface air and drainage system under 20 greens, then outfitted the new putting surfaces with a ceramic soil mix. The goal was to change nothing about how the greens look (they were photomapped beforehand) and everything about how they're played and maintained.

For this Chicagoland club, originally designed by Joe Roseman, Heery opted for the Precision Air system, blowing air underneath the green surface, providing oxygen to roots, cooling them in summer and warming them in winter. The portable system, which ties to the drainage system, can vacuum water through the green profile to drain putting surfaces quickly following heavy rainstorms.

Heery became a fan of Precision Air after seeing results at The Alotian Club in Little Rock, Ark., where superintendent John Mills opted to install a vaulted, subsurface infrastructure. Mills and Paul R. Latshaw, a consulting agronomist at Westmoreland since 2000, acted as quality-control consultants on the Westmoreland project.

"They have a vaulted system on every green that enables them to heat or cool all their greens," Heery says about The Alotian Club. "They're growing A-4 bentgrass in Little Rock, which is challenging, especially during the summer."

Before rebuilding the 20 greens at Westmoreland, Golf Creations built a USGA-spec test green so Heery could see how a subsurface unit would work in suburban Chicago's cooler climate. Golf Creations built half the test green to accommodate Precision Air and the other half without it.

"We would be using the heating and air conditioning for different reasons than The Alotian Club," Heery says, noting the Precision Air half of the putting surface outperformed its counterpart. "We would use it primarily to heat the greens in the spring and fall, to keep the bentgrass viable and competing with *Poa* when *Poa* is at its most active and has the ability to contaminate new greens. The vaulted system with the air conditioning/heating elements is almost complete insurance for quality greens, especially based on what I saw at The Alotian Club."

## DISEASE TROUBLE

As any Chicago-area superintendent will tell you, there's no sure thing in agronomy. Case in point: the drama that accompanied

The goal of the recently completed renovation at Westmoreland Country Club was to change how the greens are played and maintained.

Photo: Westmoreland Country Club