

Quality maintenance

The reason for the enviable performance of the older equipment is the quality of Blackhawk's maintenance program.

"Good maintenance is so simple – honestly," Miller says. "Our equipment manager, David Noltner, has been here 31 years. He comes to work before the rest of the staff and makes all the reel-to-bedknife adjustments. He checks fluid levels everyday and fuels each machine to make sure gas and diesel get in the right tanks. No one else is allowed to touch the equipment."

The basics of Blackhawk Country Club's maintenance program include the following.

1. By the book. Believe it or not, Noltner reads and rereads the owner's manuals for each machine.

"Everything is done by the book, and we don't stretch intervals," he says.

The shop uses only genuine original equipment manufacturer parts; and detailed, accurate records are a cornerstone of the maintenance program.

2. Good work environment. The shop is comfortable and well lit, and Noltner has all the high-quality tools he needs. A peek inside his toolbox reveals organization: Sockets in the socket drawer are arranged according to size, and wrenches in the wrench drawer are lined up from smallest to largest. There's also an adequate-sized lift and, most importantly, Noltner has the time to do the job right.

It's also significant to note that Noltner views himself as a professional and is respected by the club. On his 25th anniversary, he was invited to the board meeting, acknowledged for his dedicated service and given a generous gift.

3. High-quality grinders are critical. Blackhawk uses automatic reel and bedknife spin grinders. To sharpen the reel, the operator sets the reel on the grinder, makes the necessary adjustments, closes the door and turns on the machine. When grinding is complete, the machine shuts off itself.

"Guests come to Blackhawk because of our greens, so the reels on those mowers get the primary emphasis," Miller says. "Greens mowers are sharpened as required."

After mowing 10 greens, reels are backlapped. Then, at a point determined by the degree of sharpness, the reel goes back to the grinder.

"Only David makes reel adjustments, and he makes them every time a mower goes out," Miller says. "The adjustment may be slight, but the mower is always cutting at its peak efficiency. When David thinks a reel is a little tight, it gets backlapped. After that, they're put on the grinder, and with our equipment,

it's easy to do."

4. Be tough on operators. "If I see anyone abusing equipment, they won't run it anymore," Miller says. "I recently told someone that if I saw him driving a utility vehicle too fast again, he'd walk to cut cups."

5. Keep it clean. Blackhawk has a pressure washer and a large hot-water heater to use for cleaning equipment. The staff also uses high-grade automotive wax and large buffers, making every piece of equipment look like new.

"If an operator thinks a machine looks new, he treats it differently," Miller says. "If it looks bad, he beats it up."

The equipment is so well taken care of, people often think it's new. An equipment-dealer representative visited the shop this summer and noticed the Ford tractors.

"He said things must be good at Blackhawk because we've got new tractors," Miller says.

One of the club's best mechanics and operators, Omar Zaldivar, could have a career detailing cars, according to Miller.

"When our mowers come out in spring, we hate to get them dirty because they look so good," he says. "And one time, this actually worked to our disadvantage. A new green committee member made the comment that we're spending way too much money on equipment because we have so much new machinery. These stories may be amusing, but the simple fact is that properly maintained equipment works better and lasts longer."

6. Productive off-season. By Nov. 1, the five year-round members of the maintenance staff are pushing to get equipment ready for spring, and part of that preparation is visual inspections, which are thorough.

"We look at fittings, fasteners and other components that we can't see if we don't take off the sheet metal," Miller says.

7. Talk to distributors. Miller and Noltner



Lou Bueti, left, and Alex Ozegera use a utility vehicle to make repairs.



Omar Zaldivar, a mechanic at Blackhawk Country Club in Madison, Wis., helps make older equipment look new.

talk to distributors regularly and seek advice from their service departments.

"They tell us what we should be doing or give us a heads up about parts that may need to be replaced," Miller says.

8. Budget correctly. And Blackhawk doesn't fall behind on equipment acquisition either.

"We have the traditional five-year capital acquisition plan, but it has to be flexible," Miller says. "I might ask for two mowers and only get one, but I'll get the second one the next year. At Blackhawk, we offer golf. We don't have a swimming pool or tennis courts. We have excellent dining, and the golf better be good. One of the last areas we'd cut would be equipment maintenance. Our machines have to run at peak performance to deliver the course conditions that are required."

Think like superintendents

Quality maintenance programs are improved even more when technicians understand – from a superintendent's point of view – what it takes to deliver top-quality course conditions. Steve Jordan, equipment manager at Winged Foot Golf Club in Mamaroneck, N.Y., is serious about his responsibility to know the daily and long-term course expectations of superintendent Eric Greytok.

"I see a lot of technicians who don't make the time to go out on the golf course and



Photo: David Wolff

David Noltner, equipment manager at Blackhawk Country Club, keeps a clean and organized work environment.

really look at it," Jordan says. "I sometimes consult for other courses, and walking one hole from the tee box to the green reveals a lot about the facility's maintenance program. If the tee box is shaggy, I know that tee and approach mower maintenance isn't a priority. If I walk up to a green surround and it's fuzzy-white and hazy and the grass is ripped, obviously rotary mowers aren't a priority either. The same is true for roughs. If the height of cut is uneven, those mowers don't receive a lot of attention. I'll even go up to the base of trees. If the grass is ripped, that course probably isn't using the right trimmer string."

Jordan also gets involved helping manage cultural practices. For example, Greytok wasn't satisfied with the results of greens aerification, and the two brainstormed about an equipment solution.

"Three years ago, we were using 3/8-inch quad tines, but Eric still wanted to eliminate more thatch," Jordan says. "We went into the shop, drilled out the blocks in the aerators and put in 1/2-inch tines. The affected surface area increased from 7 percent to 13 percent."

Lou Bueti, head technician at The Golf Club of Purchase (N.Y.), makes sure he an-

ticipates his superintendent's needs as well.

"Many things on a golf course happen repetitively," Bueti says. "For example, we all know the aeration schedule, so it's my job to make sure we have bedknives in stock and the tines and machines are ready. If it's rained for three days, I know we're going to raise mowing heights. I try to be a day ahead of what he's thinking, and that means I have to be knowledgeable about what it takes to maintain the course conditions we want. A superintendent shouldn't have to worry about whether or not the technician knows what to do."

Identify equipment

Identifying equipment is another aspect of a quality maintenance program. A system that has worked well for Jordan and Bueti is marking equipment. Walk-behind greens mowers used on tees receive a different color-coded tag than walk-behind mowers used on greens. In some cases, mowers are marked for individual operators.

"To some operators, all mowers look the same, so it's important that we have a system where everyone knows where each piece of equipment is going," Bueti says. "And, if an operator is on a particular mower all the time, he's more likely to notice when something isn't performing right."

"If I go to a golf course and see a big hack on a tee box, I know someone grabbed a greens mower by mistake," Jordan adds. "This happens more frequently than superintendents would like to think, and tagging equipment is an easy way to solve the problem."

Quality of cut

With all that goes into a quality maintenance program, the quality of cut, which is the end result, is the main driver behind any program, whether it's at Blackhawk, Winged Foot or The Golf Club at Purchase.

Jordan started repairing bikes when he was 14 years old and then moved on to cars. In 1995, he took a job on the maintenance staff at a golf course in the Pocono Mountains in upstate New York. When the mechanic there left, the superintendent told Jordan he worked well with his hands, and offered him the job.

"I learned immediately the impact a good technician can have on a golf course," Jordan says. "Within one season, we went from pretty good to awesome. There's no excuse not to check equipment daily and keep mowers sharp."

This philosophy applies to any course, regardless of the size of the maintenance budget, because reels, blades and bedknives must be sharp, according to Jordan.

"There's no set standard in the industry for how to do this, but if it doesn't cut, pull it out and grind it," he says. "If you don't have grinders, backlap. Just find a way to do it — no excuses."

When I came to Winged Foot, Paul Latshaw Sr. told me that we're in the business to mow, and that's where our priorities must be," he adds. "If we've got a good daily maintenance program, it will show on the golf course." GCN

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Tagging greens mowers is one way to identify them so operators don't confuse them with other mowers used on tee boxes.

Photo: David Wolff

All-wheel steer...a new solution

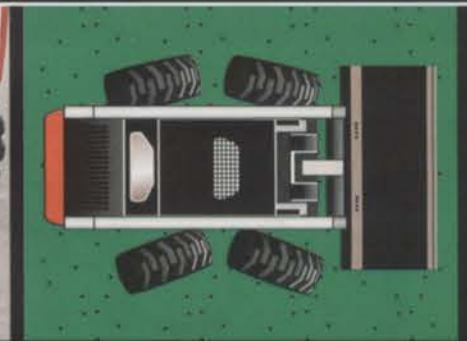
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SUPERINTENDENTS FOCUS ON CLEANUP AFTER HURRICANES TEAR THROUGH FLORIDA

by
DEREK
RICE

Between mid-August and late September, four hurricanes – Charley, Frances, Ivan and Jeanne – pummeled Florida one right after the other in a procession of high-speed winds and torrential rains. Worst of all, Jeanne hit land in almost the exact same place as Frances, further punishing Palm Beach County as it tried to recover.

By the end of September, Floridians were counting down the days until Nov. 30, the official end of hurricane season, and many snowbirds were contemplating a move back north or at least to somewhere other than Hurricane Alley.

Experts have estimated that this year's hurricane season will be the costliest on record, and news reports have surfaced about the difficulty some residents have had getting their insurance adjusters to arrive at their properties.

Because Florida is home to more golf courses than any other state, it should come as no surprise that this hurricane season created a number of problems – ranging from flooding to downed trees and worse – for the golf community, particularly those courses on the Atlantic coast that felt the

impact of the Frances-Jeanne double whammy. Sebastian Municipal Golf Course, Diamondback Golf Club in Haines City, The Breakers at Palm Beach and the Punta Gorda Country Club are a few of the many courses that dealt (and are probably still dealing) with damage and financial loss as a result of the hurricanes.

according to Greg Gardner, general manager at Sebastian Municipal Golf Course.

“I’d say probably 90 percent of it was tree and debris cleanup,” Gardner says. But aside from damage to the course, the rest – repairing damaged buildings, pump houses and irrigation systems – had to be put off for the time being, according to Gardner. Additionally, securing a contractor became almost impossible.

“The availability of contractors – with all the jobs that they have taken on – it’s just not going to happen overnight, unfortunately,” Gardner says. “We’ve got a lot of that to worry about.”

Among those worries were damage to on-course bathrooms, which were replaced temporarily with portables ones, the clubhouse restaurant and cart barn, and the near-complete destruction of Sebastian’s range netting system. Because the range is located between two holes and is only about 200-yards deep, there was a 50-foot-high net held up by poles all the way around it. The system survived Frances with minimal damage. Then came Jeanne.

“It was torn up a little bit after Frances, but Jeanne just took care of the rest of it,”

“The availability of contractors – with all the jobs they have taken on – it’s just not going to happen overnight, unfortunately. We’ve got a lot of that to worry about.” – GREG GARDNER

A financial setback

For the most part, restoring a course to playability after the hurricanes involved moving trees and other debris off the course,

Gardner says. “We had about 85 percent of our poles broken, and they didn’t just fall down. The way the wood was broken and shattered, it just looked like a bomb went off from inside the pole. It just shattered.”

In all, Gardner estimated the damage total to be about \$250,000. Repairing the restaurant roof took precedence over everything else. And to make matters worse, the club’s fiscal year started Oct. 1, which means the storms not only caused physical damage at the course, but also wrecked two fiscal years, according to Gardner.

A helping hand

Hurricane Charley took out an estimated 1,000 trees at Diamondback Golf Club. The hurricane also “renovated” the clubhouse by moving the back patio to the front parking lot and the front awning to the 16th hole behind the clubhouse. Because of the sheer number of trees, Diamondback general manager Jeff Parsons says there’s no way the course will be clear of trees any time soon.

“We will never, ever get to where we can clean up all the trees that were in our wetlands or in the outer perimeters,” Parsons says. “It would take a crew of 10 alone, plus equipment, to get in and haul that stuff out. We’re not a big club, so we’re doing it kind of piecemeal, and with our own guys at different points. From the standpoint of getting everything off the course and done, it’ll take us a good year.”

In all, Parsons estimated the cost to clean up and repair all the damage at Diamondback to be about \$250,000 in machine and labor costs.

Diamondback did get a helping hand from out of state. Randy Waldron, superintendent at the Golf Club of Georgia in Alpharetta, heard about golf courses sustaining hurricane damage in Florida and wanted to do something to help. So he contacted his old friend, ChampionsGate Country Club superintendent Bobby Ellis, to see what he could do to help. Ellis referred him to Parsons, and Waldron sent one of his assistants, Steve Sisson, and some equipment to Diamondback.

“Our guys just really wanted to do something,” Waldron says. “A lot of us [from the Country Club of Georgia] are from Florida, so I asked Bobby to find a mid-level course that maybe didn’t have a big budget that needed help.”

The club convinced a local supplier to donate a chain saw for Sisson to take with him, and the maintenance staff collected about \$300 to pass along to Diamondback’s maintenance staff.

Parsons says the good-will gesture was greatly appreciated.

“When Steve got here, he just pitched in and literally did whatever it took,” he says.



The Ocean Course at The Breakers in Palm Beach suffered a huge landscaping blow because many trees not only were blown over, but they snapped in multiple places.

Photo: The Breakers

"He cut trees down for us, he hauled trees, and he topdressed greens for us as we were moving forward. It was something that didn't need to be done. He didn't have to help us out like that, and he really did a great job for us."

Breakdown

At The Breakers in Palm Beach, the one-two combination of hurricanes Frances and Jeanne caused a major disruption at the resort, which was completely closed for several weeks. The resort's Ocean Course was closed for 31 days, including several days spent preparing for the storms' arrival, according to Mark Reid, superintendent at The Breakers.

The Ocean Course suffered a huge landscaping blow because many trees not only were blown over, but they snapped in multiple places. The bunkers were severely washed out and contaminated with soil from the subgrade, and the course was un-

derwater for a period of time, and that was before the second storm hit.

"The Ocean Course opened after the second storm in as good, if not better shape than before the storms," Reid says. "The only thing different is the landscaping buffers, but we are working on the re-landscaping."

The two hurricanes also caused a bit of a setback at The Breakers' West Course, which currently is in the late stages of a complete reconstruction designed by Rees Jones. But the damage could have been worse, Reid says.

A majority the trees that had been planted — about 300 — were blown over, but most of them were salvageable. But the biggest problem came from the turf. Prior to the first storm, the grassing was complete on everything but the practice facility, but the mix-out of all the greens that weren't established well blew off and left voids on many greens.

"We didn't lose any of the contours, and

we were able to re-establish those with heavy topdressing by hand," Reid says.

The bunkers, however, didn't fare so well. They were all washed out quite badly, and some of the faces collapsed. Flooding also was an issue on the course.

"It took a week after both the storms for the water to recede to its set elevation in all the lakes," Reid says. "The storms set us back on our opening a few weeks."

The new opening is scheduled for Dec. 17.

A deal on hold

Considering all of the devastation, perhaps the saddest story of a hurricane-damaged golf course is that of the Donald Ross-designed Punta Gorda Country Club. Charley's winds damaged or downed about 900 trees, and almost all the structures at the club suffered some sort of damage, including a cinder-block half-way house. Superintendent Brad Wright suspects a tornado was responsible for the majority of the structural damage, although he can't confirm that.

As an added twist, last year, Punta Gorda's membership had entered into an agreement with Trimerica Mortgage Co. to sell the club in exchange for nearby Port Charlotte Golf Club. Punta Gorda members have been leasing Port Charlotte in anticipation of the deal's closing, which was slated for spring 2005.

Because Punta Gorda members have been operating two courses and have had their own losses to deal with, they decided to focus on repairing Port Charlotte, which reopened in September. They haven't decided whether to rebuild Punta Gorda or not, and there's no guarantee the Trimerica deal will still go through.

Bouncing back

There's good news on the golf front though. Parsons says business at Diamondback is steady, and Gardner reported the same from Sebastian.

"A lot of people are dying to play golf, even though they've got a lot to do at home," Gardner says. "They're working a lot of extra hours, but they still want to try to get away and put it all out of their mind for a while."

And as a reminder of the capriciousness of Florida weather, even when there's no hurricane bearing down on the state, Sebastian's reopening after two weeks was delayed by a day, leaving Gardner to ask the question that has most likely been asked thousands of times throughout Florida since August: "Is Mother Nature mad at us?" GCN

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The Ocean Course at The Breakers in Palm Beach was underwater for a while, and that was before the second hurricane hit.

Photo: The Breakers

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Improving turfgrass

U.S. GOLF ASSOCIATION-FUNDED RESEARCH PROJECTS HELP ENHANCE TURF CONDITIONS ON GOLF COURSES

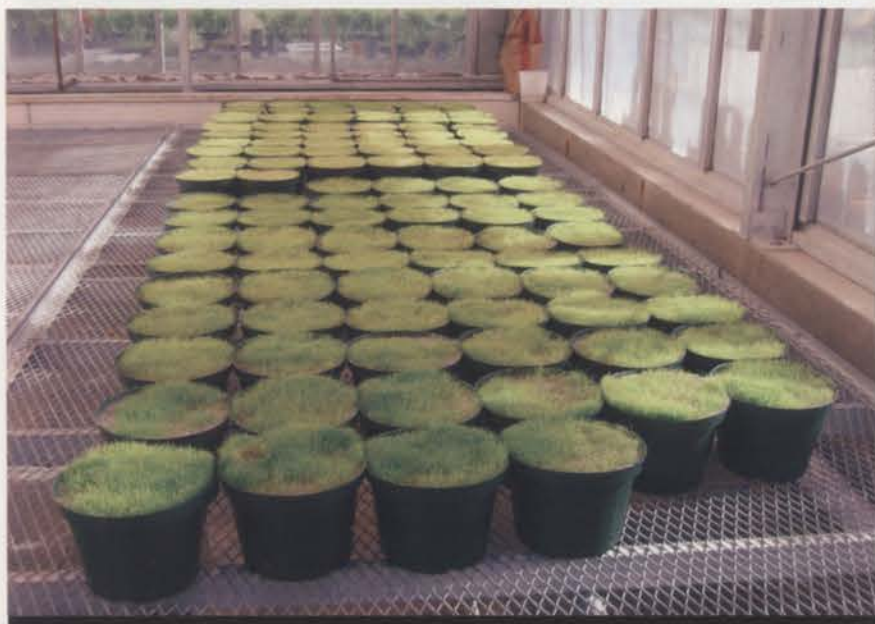


Photo: Kevin Ross

Much research takes place at universities throughout the country in greenhouse settings year round.

by
KEVIN
J. ROSS

There's no disputing that golf course conditions have change immensely throughout the past 25 years. Nowadays, golf courses are maintaining turfgrass at a level that wasn't possible years ago. Why is this? Certainly, one of the biggest reasons is the advancement of technologies used on golf courses. From mowers to irrigation to pesticides, the advancements have been considerable.

However, turfgrass research is one area that often isn't mentioned with all the advancements. With the current movement toward less pesticide and water use, to name a couple, turfgrass research will improve golf's future.

USGA-backed research

One of the biggest supporters of turfgrass research is the U.S. Golf Association. Throughout the years, the USGA has given millions of dollars to support research con-

ducted throughout the country. Since 1983, the USGA has funded more than 290 university research projects at a cost of about \$25 million. The research findings of these projects have benefitted the game of golf and golf course superintendents throughout the world.

The USGA has helped develop research projects that, in turn, will reduce the amount of chemicals applied to turfgrass on golf courses without affecting the playing quality of it. From 2003 to 2005, the USGA is supporting 52 turfgrass and environmental projects. Even with the large amount of projects that are important to the industry, it seems like there are some favorites that dominate the talk among superintendents.

The development of new turfgrasses is one hot-button research topic for superintendents who continually are looking for better turfgrass varieties to improve performance. This is an area in which the USGA has concentrated funding for many years.

The National Turfgrass Evaluation Pro-

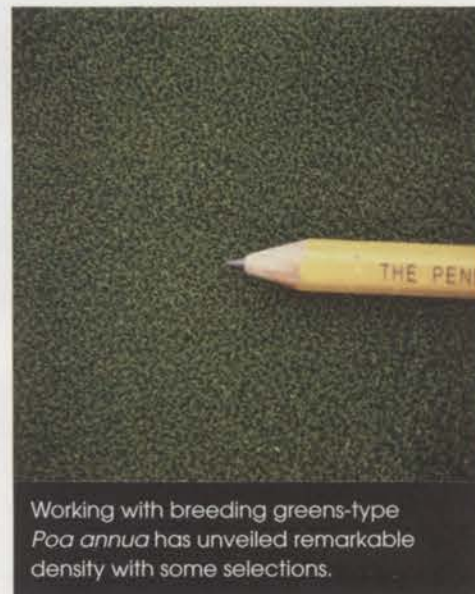


Photo: U.S. Golf Association

Working with breeding greens-type *Poa annua* has unveiled remarkable density with some selections.

gram is considered one of the most popular programs among golf course superintendents. The USGA has helped fund this program since 1997. The main purpose of the NTEP is to evaluate the commercially available cultivars and new market selections of various species. Basically, it's an independent and unbiased method of gathering performance data about various seed companies' cultivars.

With the flood of cultivars from many turfgrass species on the market, it's almost impossible for superintendents to evaluate them on their own. The program is a way to evaluate cultivars to determine what's best adapted for a particular region and if it meets superintendents' specific needs.

The USGA funding for the NTEP, along with funding from the Golf Course Superintendents Association of America, helped initiate a three-way cooperative effort for the "On-Site Testing of Bentgrass and Bermudagrass Cultivars for Golf Course Putting Greens" project, which ran from 1997 to 2001. Test greens were built in 16 locations throughout the United States for evaluation under playing and practice conditions. Trials were located in northern regions for bentgrass testing, in southern regions for Bermudagrass testing and in the transition zone to evaluate both grasses at one site.

Although the bentgrass and Bermudagrass research has been completed, the results are available still. This work was so popular that the program is tentatively scheduled to begin again. All past NTEP testing and present ongoing work is available on the NTEP's Web site, www.ntep.org, where one can view data from all the trials.

Disease resistance

Another example of turfgrass development is the breeding program at Rutgers Univer-

sity. Since 1983, the USGA has been funding the "Breeding and Evaluation of Kentucky Bluegrass, Tall Fescue, Perennial Ryegrass and Bentgrasses" study. The main focus of the research has been to improve the genetics of these turfgrasses by increasing stress tolerance and disease and insect resistance, which results in the reductions of pesticide and fertilizer use.

Unknown to many, in 1990, the USGA funded a grant to Rutgers University to study whether the glyphosate resistance gene being developed in agricultural crops also could be inserted into turfgrass. Hence, the birth of what the industry now knows as Roundup Ready bentgrass. The initial foresight for Roundup Ready bentgrass was to lower pesticide input.

If weed control could be established for creeping bentgrass, then only one pesticide regimen was needed. If bentgrass could dominate the stand with the use of glyphosate, then other grasses that have their own inherit problems, such as *Poa annua*, perennial ryegrass and Kentucky bluegrass, could be eliminated and less pesticides would be needed.

Improving *Poa annua*

Quite possibly the breeding program that has developed the most discussion among superintendents and industry professionals, aside from Roundup Ready bentgrass, is the work being done by Dr. David Huff at Penn State University on "Cultivar Development and Extreme Temperature Tolerance of Greens-type *Poa Annua*."

For some people in golf course mainte-



Photo: Kevin Ross

Evaluation of turfgrasses is a hot-button topic for superintendents.

nance business, it's hard for them to believe the enemy could be a friend someday. Many contend, even in the current world of superior bentgrasses for greens, that when *Poa annua* is good, there might be no finer putting surface. But the inherent problem of *Poa annua* is that it's only good for a short time. The research for this project has evaluated tens of thousands of *Poa annua* plants, which have been taken

from golf greens from throughout the world. These selections have been looked at for heat and cold stress, disease resistance, shoot density, color and appearance.

Of the thousands of plants that have been selected for observation, Penn State has narrowed its work to a top 12, which currently are being evaluated at golf courses and university facilities throughout the world. Many of these selections have some of the finest texture and density ever evaluated for putting-green turf. Will superintendents be growing "greens-type *Poa annua*" on their greens some day? It will still take many years if that becomes the case, but this breeding program might make it possible.

Reducing pesticides

One research grant, which has developed much interest, is the "Evaluation of Reduced Chemical Management Systems for Putting Green Turf," conducted by Jennifer Grant, Ph.D., and Frank Rossi, Ph.D., of Cornell University. This research was conducted at the public Bethpage State Park on the Green Course in Farmingdale, N.Y. The research was performed on push-up-style greens, which had accumulated a heavy, sand topdressing layer.

The focus of Grant's and Rossi's project was to evaluate integrated pest management techniques and reduce or eliminate chemical inputs to determine the feasibility to



Photo: U.S. Golf Association

Bentgrass- and Bermudagrass-greens testing was one of the most popular research studies among superintendents.



Dr. David Huff found diversity with *Poa annua*'s density during his research of the turfgrass.

Photo: U.S. Golf Association

manage acceptable golf greens under these management regimens. This project was the direct result of various public pressures to manage golf courses with few or even no pesticides. Extensive data from the project was collected from a three-year period ending in 2003.

To generalize their major findings, it has been determined that integrated management greens received less pesticides (27 per-

cent to 46 percent), and non-chemical greens were marginally or below acceptable quality during the stressful months of July and August and even needed emergency chemical treatments.

Possibly the best news from this project is the influence the research has had on various advocacy groups. Some state county groups have even reassessed their pesticide restrictions and written new policies that are now based on scientific research.



The turfgrass research conducted on push-up-style greens at Bethpage State Park in Farmingdale, N.Y., generated public interest.

Photo: U.S. Golf Association

Ball-mark concerns

There also has been what can be termed research by demand. As the new creeping bentgrasses have hit the markets throughout the past 15 years, there suddenly was the major concern of a ball-marking problem with the new bentgrasses. Word traveled that the A and G series, L-93 and other varieties of bentgrasses healed slowly and ball marks would be a considerable problem if these bentgrasses were used.

The USGA decided to fund a research project, "Ball Marks on Bentgrass," to gather scientific based data on this problem. The study showed the new bentgrasses, such as A-4 and G-2, ranked as the top two bentgrasses in recovering from ball marks.

Thirteen bentgrasses and two velvet bentgrasses were studied.

The real ball-marking problem was determined to relate more to the maturity of the turfgrass and the development of a thatch and topdressing matrix layer rather than the cultivar. With the proliferation of new golf courses seeding these bentgrasses, this can explain some of the initial concern of the ball-mark healing problems. It's interesting to note this project proved a complete reversal of public thinking and perception of the issue.

Organic accumulation

Another example of proactive funding by the USGA is the project conducted by Robert Carrow, Ph.D., from the University of Georgia. His work, titled "Surface Organic Matter in Bentgrass Greens," addressed the dynamics of thatch formation in relation to the performance of a USGA-specified green. Although this is a highly scientific study, the end results have provided a useful tool for superintendents to analyze greens performance and design cultural practices based on the data.

The research results indicated the potential breaking point for green performance being a 4-percent organic matter accumulation in the top two inches near the surface. Carrow noted that organic matter accumulation greater than 4 percent rapidly decreased green performance characteristics such as oxygen diffusion rates, saturated hydraulic conductivity and excessive surface water retention. He also stressed that the 4-percent organic matter be a guideline and not a rule.

With this research, maybe the focus now will be to analyze the organic-matter level in the upper two inches, instead of thinking about the surface percentage removed during cultivation.

Extensive research

The material mentioned above represents a small fraction of the USGA's work. The USGA is dedicated to turfgrass research and to increasing awareness of the work being performed among industry professionals. Although some of the research might not pertain to a particular region, there's extensive work that can benefit the industry as a whole. For in-depth information about USGA research projects, both past and present, visit www.usgatero.msu.edu/currentpastissues.htm. GCN

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