



Tools of the Trade

Biorationals: A tide of the future in turfgrass care



Moss: Superintendents' brainstorming pays off

THE WORLD OF MAINTENANCE IN '98

The agony and the ecstasy. Misery and joy. Superintendents got the complete package in 1998.

There were the horrors, the struggles and the challenges that accompanied drought and then flood in the South Central states, the fire and then hurricanes in the Southeast, the torrential downfalls from El Nino in the West, and the Ice Storm of the Century in the Northeast. Fairways and roads were washed away, clubhouses burned down, disasters of historic proportions.

Then, there were the thrills of discovering a control for poa annua and moss, and of building golf courses to serve as laboratories to study the effects of maintenance on the environment.

Golf course maintenance is a dynamic field, demanding that superintendents read up and pay attention to the many scientific advances. The next few pages share a glimpse of the top GCN stories from the year.

Notable Quotables



• **'I'd like to get my hands on a 200-acre farm and see what kind of a golf course I could build. Something tells me it would be a little**

unorthodox.'

— *Ed Michaud, superintendent at Sugarloaf Golf Club in Maine, who in the winter at Sugarloaf has built the No. 1 snowboarding resort park in North America, filled with "pipes," "table tops" and "pyramids."*

• **'I would parallel it [control for poa annua] with new drugs for killing cancer tumors. That's how important it is to me.'**

— *David Major, superintendent at Del Mar CC in Rancho Santa Fe, Calif.*

• **'It was scary from the standpoint that I didn't think fire could travel that fast. You could not outrun it.'**

— *Michael Fabrizio, director of golf maintenance and construction for Matanzas and Palm Coast Resort in Daytona Beach*

• **'It sounds odd, but we would love a hurricane or tropical storm right now.'**

— *Bruce Berger, superintendent at Quarry Golf Club in San Antonio, Texas, not long before Texas was hit by a series of storms.*



• **'Our single biggest spring-prep problem is keeping the golfers off the course until the frost thaws out.'**

— *Jerry Faubel, super at Saginaw (Mich.) CC*

By MARK LESLIE

GCN JANUARY

COLUMBUS, Ohio — You may not find the "neem tree" in your dictionary. Nor the words "biorationals" and "naturalites." But they will be playing increasingly important roles in golf course maintenance, according to Dr. Parwinder Grewal, an assistant professor of turfgrass entomology for the Ohio State University (OSU) Extension Service.

Speaking at the Ohio Turfgrass Foundation Conference here, Grewal said some biological controls have succeeded and some have not, but their use has increased tremendously in the last decade — a harbinger of the future.

Piecing together research from OSU, Cornell University and other colleges, Grewal updated the audience on research done on biologicals and biorationals. He defined biological control as the use of a living organism — such as

Continued on page 14

By TERRY BUCHEN

GCN APRIL

SHARON CENTER, Ohio — Research and subsequent answers to turfgrass problems are not always resolved by universities. A great example of networking information has occurred from superintendents, U.S. Golf Association (USGA) agronomists and university scientists nationwide who got together to beat moss.

Chairing the database networking information was D. Frank Dobie, general manager and superintendent at The Sharon Golf Club here. Dobie wrote an article in September 1996 in Northern Ohio Turfgrass News about using a combination of Subdue 2E, wetting agent and spreader sticker, and the database was formed soon thereafter when many superintendents expressed interest in doing further experimentation.

"The most effective method and material in terms of moss

Continued on page 15

GCN JULY

Earthworm fixes...

By DR. DANIEL A. POTTER

Earthworms have been called the "intestines of the earth" because of their importance in breaking down plant litter, recycling nutrients and enriching the topsoil. But on golf fairways, an abundance of earthworms can be too much of a good thing.

Generally, you'll have much healthier turfgrass where earthworms are abundant. Their burrowing reduces soil compaction and improves air and water infiltration. Earthworms enrich the soil with their fecal

Continued on page 13

GCN JANUARY

New biologicals...

By MARK LESLIE

COLUMBUS, Ohio — Questions abound in the arena of turfgrass soil ecology and biology, but Dr. Michael Boehm pointed to a future where biological care plays an equal role in maintenance with chemical and cultural care and the turfgrass' genetic resistance.

The Ohio State University (OSU) assistant professor of plant pathology painted a picture in which current maintenance practices are dominated by chemicals, and where cultural practices

Continued on page 13

GCN APRIL

... Sunlight assessment

By MARK LESLIE

PROVIDENCE, R.I. — Sunlight assessment and digital imaging — two new technologies that are pulling golf superintendents into the computer age — will also help them deal with the difficult task of course renovations, according to a spokesman for the U.S. Golf Association Green Section.

"Frankly, most of the people here have the equipment and capabilities to operate this technology," Dave Oatis, director of the Northeast Region, told the New En-

Continued on page 17

Universities pioneering the way

GCN JUNE

Purdue pursues research

By MARK LESLIE

WEST LAFAYETTE, Ind. — With the help of course architect Pete Dye, multiple donors and a group of students who built it, Purdue University on June 27 will open a golf course that will produce a major five-year study on the effects of golf maintenance on ground and surface water.

Pointing out that environmentalists criticize past corporate-funded studies as biased, Dye said: "What Purdue produces should be the most unbiased report, simply because there is no reason to be biased. Good or bad, no one can argue the findings."

All the money to build the new Kampen Golf Course and fund the research came from private sources, not golf associations or the chemical industry. "I was very much concerned that it not be company funds," Dye said. "We did this with Clemson University at the Ocean Course at Kiawah [in South Carolina], but Kiawah was a pristine piece of ground, so how

Continued on page 15

GCN JUNE

K-State a new breed

By MARK LESLIE

MANHATTAN, Kan. — A new breed of college curriculum, one that opens management avenues to future golf course superintendents, will begin with construction of a prototype Tournament Players Club (TPC) university course at Kansas State University here.

Colbert Hills Golf Course, named for PGA Senior Tour player Jim Colbert, will be many things to many people.

"The positive impact of this project will be far-reaching," said Stephen Mona, chief executive officer of the Golf Course Superintendents Association of America (GCSAA), "a golf management program to train tomorrow's leaders, a research facility to aid the golf industry, and a first-class facility for golf enthusiasts..."

It will provide "unique research and academic opportunities for K-

Continued on page 15

GCN APRIL

UCal Poly transforms trash

By DOUG SAUNDERS

POMONA, Calif. — Dealing with society's trash is an issue that draws little attention from the public until a landfill needs to be created or closed down. After operating a 200-acre landfill on campus property since 1957 in conjunction with the Los Angeles County Sanitation Districts, California State Polytechnic University here hopes to close the landfill and build an 18-hole golf course that will serve as a living laboratory.

The landfill has served two purposes over the last four decades. It has been a repository for the tons of refuse from the growing LA metropolis, and has served as an outdoor lab for waste management, environmental sciences, engineering and agriculture.

"The landfill has been very beneficial to the university from not only an economic standpoint, but also as an educational tool," said Ed Barnes, executive director of the Land Lab and Asset Development for Cal Poly Pomona.

Continued on page 15

Purdue

Continued from page 9

were we going to clean it up?

"Plus, a lot of the money for the monitoring [at Kiawah] came from the USGA, PGA, PGA Tour and chemical companies. That was a mistake."

Also, Purdue's study will be three years longer than Clemson's. And Dye feels it may extend beyond that since "all the heads of the different university schools are starting to get enthusiastic."

Another major advantage the Purdue study will have over Kiawah, Dye said, is that it is cleaning up water pouring onto the course from "all over Hell's half acre" — a four-lane highway, parking lots, housing, filling stations, etc. Piping was installed to catch the water and move it into three sets of wetlands to be filtered. From there, the water goes into a retaining pond which, when filled, empties into an irrigation pond.

"We created 30 acres of marsh," Dye said. "We are improving the water that comes from the streets."

The Heritage Group of Indianapolis, a toxic-waste cleanup company, is donating its services and Purdue students and faculty are performing the water monitoring. Dr. Zac Reicher, who is overseeing the monitoring, said this and two tests could have major implications for future construction around the country.

Noting similar studies set up to measure runoff from a nearby WalMart parking lot and at a dairy farm, he said, "We think we will be able to use golf courses and created wetlands to handle runoff from subdivisions, commercial sites and agriculture."

Already, people are involved from Purdue's entomology, botany, plant pathology, forestry, turfgrass, agronomy and building construction departments.

K-State

Continued from page 9

State researchers and students," said Bob Krause, K-State's vice president for institutional advancement.

"We have the opportunity to make something very special happen — something that will have a lasting impact on the world of golf and enhance the golf program at the university where I began my career," said Colbert, who donated \$500,000 and raised millions from friends toward the \$10 million facility.

"The university will use the course to train turf students how to manage, so that they can aspire upwards if they want," said Jeff Brauer of GolfScapes in Arlington, Texas, who is designing the 18-hole championship course, nine-hole teaching layout and driving range.

While faculty, Audubon International and others draft environmental study proposals, it is the education element that particularly sets Colbert Hills apart.

Krause was not only interested in a new golf course but in K-State being state-of-the-art in turfgrass and environmental research and extending golf into the Outward Bound program the school conducts for minorities in the summers.

"The opportunity sounds way too good to be true," said O'Brien, "because it ties together three of our objectives (the golf course management program, a chance to reach minorities and research) all in one wrapping with an affiliation with the PGA Tour and an outstanding university."

K-State's new major focuses on all aspects of running a golf course. Curriculum includes courses in turfgrass management, business management, hospitality and food-service operations.

UCal Poly

Continued from page 9

At some point, landfills reach capacity and the next question is how to best close them down. Strict EPA guidelines specify the closure procedures for landfills. The university has decided that, in conjunction with closure and monitoring regulations, creating a course can provide economic and educational benefits into the future.

"Our desire," Barnes said, "is to build an 18-hole course that will generate income through greens fees, provide a recreational outlets for students, be of value to our athletic program, and give more opportunities for internships for our colleges of hotel and restaurant management, turfgrass management, landscape architecture, and biosciences."

The facility will encompass a 340-acre parcel that sits on a hill offering views of the valley and surrounding mountains. Two hundred acres are impacted by the landfill and the remaining acreage was severely affected by grazing and agricultural use. The original concept was to build a nine-hole course over the closed landfill. New plans are to blend 18 holes through the entire site, offering the opportunity to revegetate the property with natural plant materials and encourage the return of wildlife to the area. The landfill itself is due to close in July.

"The operation of a self-sustaining site such as this is a very positive approach to dealing with waste," Barnes said. "The methane that will be generated by the landfill, even after closure, will be collected and used in an even more efficient manner for the operation of the golf course and its facilities."

Students from the various schools at the university will be directly involved in construction, revegetation and operation of the course.

THE KING AND HIS COURT



Services to fit your needs from the company providing quality and value in golf course architecture for over 25 years.

1-800-523-3757

Arnold Palmer Signature Course & Palmer Course Design Co. are Trademarks