Tools of the Trade

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.

Biorationals: A tide of the future in turfgrass care

GCN JANUARY

By MARK LESLIE

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

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Moss: Superintendents' brainstorming pays off

GCN APRIL

By TERRY BUCHEN

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

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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 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

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

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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

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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-

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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

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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-

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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.

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Moss conquered

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kill and safety to *poa annua* and bentgrass was Dawn dish-washing detergent," said Dobie. Four ounces of Ultra Dawn were mixed in 1 gallon of water. The solution was spot-sprayed with a backpack or hand sprayer, thoroughly soaking each spot of moss. The best results were achieved when air temperatures were between 55 and 80 degrees on days with full sunlight.

The moss turned an orange-brown within 24 hours, with no injury to the surrounding turf, Dobie reported.

"We know that moss starts from spores. So, it is important to attack the moss plant before the moss flowers in order to interrupt this part of the life cycle," Dobie said. "We believe the Dawn dehydrates the moss plant, resulting in its death."

"We do not know how long the spores will continue to germinate, so clean-up treatments may be necessary for several years," he added. "We also do not know what conditions, cultural practices and discontinued pesticides may have allowed moss to become a problem in recent years. These are questions that could be answered by university testing."

Michael Hambach, superintendent at Stoneleigh Golf & Country Club in Winchester, Va., suggested using Dawn to Stanley Zontek, director of the USGA Green Section's Mid-Atlantic Region. Keith Happ, USGA agronomist who shares an office with Zontek, further researched the chemistry of Dawn and found that it contains cryptocide, which controls spores. That is most likely the reason the formula succeeds. Cryptocide desiccates the moss and also kills the spores, which keeps the moss from recurring, Dobie said.

"Eighteen superintendents from eight states participated, and we discovered many interesting things as a group," he said. "Moss occurred under a wide variety of conditions. It did not matter if the greens were USGA-spec or soil greens. The grass types varied from *poa annua* to Penncross, Pennlinks, South German, Washington, A4 and G2. The very dense turf of the G2 was not a deterrent. Heights of cut were from 1/8 to 5/32 inch. Thatch thicknesses were from 1/16 to an inch. pH's ranged from 6.0 to 8.0. Most greens had good drainage. But if the thatch was kept moist, moss seemed to be more prevalent. All had moss in full sun."

He added that annual nitrogen feedings ranged from 2 pounds to 7 pounds per 1000 square feet. Years that moss was first seen were from 1985 to 1996. Years that greens were constructed varied from 1919 to 1993. Sources of top dressing were from eight suppliers. Some top dressing had peat and some was straight sand, he said.

Several superintendents reported that mercury-based fungicides had no effect on the moss or the spores. Most consider treatments with iron sulfate and/or ammonium sulfate to be ineffective. DeMoss killed moss but was too damaging to the surrounding turf, Dobie said. If only one green had moss, it was spread to other greens within a few years, probably by mowing equipment.

All superintendents considered moss a serious problem. All who used the Dawn treatment in 1997 considered it the best method of control.

"We will continue to correspond with the 'Moss Men' in search of some more answers," Dobie said.

Superintendents who participated in the venture included Joe Alonzi of Westchester Country Club (CC) and Tony Grasso of Metropolis CC in New York; Jerry Dunfee of Lancaster CC, Chris Haunty of The Lakes G&CC, Jack Johns of The Camargo Club, Tony Mancuso of New Albany CC, Bill Montague of Oakwood Club, Tom Vogel of Portage CC and Todd Voss of Double Eagle Club in Ohio.

Also, Greg Johnson of Eagle Brook CC in Illinois; Bill Keaton of Castle & Cooke CC in Arizona; Leo Plechette of Polo Fields CC in Kentucky; Scott Schukraft of Huntsville Golf Course in Pennsylvania; John Slade of Laurel Creek CC and John Wantz of Due Process Stable Club in New Jersey; and Scott Wilke of Firethorn Golf Course in Nebraska.