



## THE WORLD OF MAINTENANCE IN '97

If necessity is the Mother of Invention, then greenskeeping is the Father of Invention. This is proven again and again, from the shop to the fairway. Experimenting to ease the chemical and financial pressures on maintenance, superintendents have dipped deeply at the well of invention. Among their findings: barley straw fights algae, a molasses and cane sugar mix gives turf a quick flush, and shag carpet is a superior replacement for sod on sod-wall bunkers.

Meanwhile, superintendents and their crews are better educated. There are more college-educated first and second assistants and irrigation specialists. At the same time, burgeoning mechanics programs are starting around the country.

Parallel to all this progress, university scientists — many funded by the U.S. Golf Association — are discovering the impacts, or lack thereof, of golf course maintenance on water supplies, wildlife and the environment.

The maintenance business is fairly bursting with news and discoveries. The following pages give a glance.

— Mark Leslie

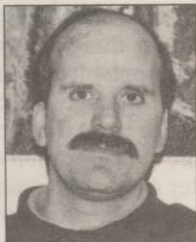
## Notable quotables



Judy Bell

● "If we want perfect we can just stay at home and putt on a rug."

— Judy Bell, president, USGA



Kevin Ross

● "You can spend a long time in a filing cabinet, or you can get a computer."

— Kevin Ross, CC of the Rockies

● "You've got to use common sense out there. It's like working in a fish bowl. People see what you're doing. Three or four kids edging a bunker is not acceptable."

— Bob Feindt, superintendent retiring from CC of Rochester

● "We tried in the '40s, saying spikes were terrible on the turf, and that did nothing. No, the impetus for going 'spikeless' is the golfers. It has nothing to do with research, or the USGA ... or anything else."



Jim Snow

— Jim Snow, USGA Green Section director

## OSHA targets ergonomics controls on industry

By MARK LESLIE

WASHINGTON, D.C. — Arguing that ergonomics is the solution, not the problem, the Occupational Safety and Health Administration (OSHA) ergonomics coordinator defended the agency's work to define guidelines for the workplace.

"Our Congressional mandate is to prevent injury and illness in the workplace," said Nancy Adams. "The way the debate gets framed, ergonomics is the problem. But it's not. It's an intervention strategy to prevent the injury from happening, by good engineering, good process design, fitting the job to the worker and not the worker to the job. You can't do that as one-size-fits-all."

OSHA's push into the realm of ergonomics is not new. The first ergonomist joined the agency in 1979, and talks with labor, trade associations and professional organiza-



tions began in the early 1980s. But the business and industry communities got concerned when, in 1992, an "Advance Notice of Proposed Rulemaking" targeted such items as:

- Lifting or carrying anything weighing 25 pounds without assistance more than once during a workshift.
- Using vibrating tools, which would include weed-eaters, for more than two hours.
- Working in awkward positions (such as kneeling, stooping or squatting) for more than two hours.
- Performing the same motions every few seconds.

"That's called labor," quipped one superintendent regarding the 25-pound limit. "The standard weight [for bags for various products] is 50 and 80 pounds."

Various other chores on a golf course maintenance crew

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## Fathers of Invention

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## Carpet-wall bunkers expected trend-setter

By MARK LESLIE

SCITUATE, Mass. — Some inventions seem to be just laying around under a bush waiting to be discovered by an innovative mind. Such was the case of the "sodwall bunker kit in waiting" — Dr. Michael Hurdzan's answer to standard, old-time stackwall bunker.

Fresh from a trip to Scotland, the home of sod-wall bunkers, Hurdzan was walking the property of what would become

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GCN AUGUST

## Barley straw a fatal attraction for pond algae

By MARK LESLIE

TORONTO — News flash: Folk remedy strikes at the heart of the pond algae problem.

While science and technology are striving to remove algae from ponds, some superintendents are accomplishing the task with a simple bale of barley straw.

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GCN JANUARY

## Mounted hose reels equal easy watering

By KEVIN J. ROSS

VAIL, Colo. — In all my years in golf course management, I have yet to see the perfect irrigation system. I do not believe this is due to a lack of irrigation design or equipment, but rather of agronomic science. Let's face it. No irrigation system can replace the agronomic benefits of a good hand-watering program. If you're not hand-watering on a consistent basis (when needed), perhaps you should evaluate your watering practices.

Hand-watering is a pain, but it can make

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No, this is not sod, which needs repair every couple of years. It's shag rug.



A bale of barley straw floats atop a one-acre pond at Toronto's Board of Trade Country Club.



Three types of hose reels used at Country Club of the Rockies: mounted to an E-Z-GO (left); mounted to a Kawasaki Mule (center, in use); and mounted to a fabricated trailer.



GCN MAY

## Ground, surface water: Minimal impact

By MARK LESLIE

WHEATON, Md. — Preliminary findings of studies monitoring ground- and surface-water quality at nearly 40 golf courses re-enforce golf industry claims that courses are not a danger, particularly when compared to other sources of chemicals, according to Stuart Cohen, president of Environmental & Turf Services, Inc. here.

"Overall, these results show that golf courses are not having a significant impact on human health or aquatic organisms relative to other sources of chemicals in the environment," Cohen said of the study he conducted for the Golf Course

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GCN NOVEMBER

## Dicamba, 2,4-D no problem on greens

By MARK LESLIE

BELLE GLADE, Fla. — A two-year study of a U.S. Golf Association-specified golf green by University of Florida Profs. George Snyder and John Cisar has found that concentrations of the herbicides 2,4-D and dicamba were low in the thatch and soil and far below federal maximum contaminant levels (MCLs) in percolate water.

"Dicamba and 2,4-D, particularly dicamba, are pretty mobile in sand soils, and most people don't want any in their drinking water," said Snyder, adding, "As far as I know,

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A blower helps a crew keep smoke to a minimum, after clearing brush on a golf course.

# Torched! Tree burning made clean and easy

By TERRY BUCHEN

DUBLIN, Ohio — There are blowers, and then there are blowers. Just ask superintendent Ted Hunker, who, thanks to Ranger Construction Co., has seen the future when it comes to burning brush.

The scene: Tartan Fields Golf Club, a mile from Muirfield Village Golf Club.

The cast: Hunker, Ranger Construction and Arnold Palmer's design team of Harrison Minchew and Joe Veal.

The star: a huge blower, powered by a

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V-8 diesel engine, that flames a fire so hot that wood burns quickly and virtually smoke-free.

"After the clearing process on our wooded holes," said Hunker, "we obtained burn permits from our township fire department and burned all of our trees in very large pits that were dug in far out-of-play areas and near high-tension power lines."

To speed up the burning and eliminate smoke, Ranger brought in the out-of-this-world blower.

"The fire department extended our burn permit indefinitely because of the great quality burning that is being done and we are being a good neighbor in the process without one single complaint," said Hunker. "It has made a big difference of what the neighbors will let us do."

Contractors have used between 12 and 15 pits thus far. The blower is portable and has needed very little maintenance. It is homemade and can be towed easily with a pickup or tractor, Hunker said.

Minchew, of Palmer Course Design Co., uses this type of blower on other jobs "because of the great air quality, which virtually eliminates the smoke," he said.

## Dicamba study

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they are not of any health concern at the concentrations we observed."

Both of the phenoxy acid-type herbicides are widely used to control weeds in turfgrasses and general agriculture. They have been found frequently in surveys of pesticides and surface waters — and less commonly in ground water — and have therefore raised public concern. Although they have been studied frequently in agricultural settings, little research has been done on their persistence and mobility when applied to turfgrasses, especially high-sand-content USGA greens.

Snyder and Cisar reported that the average concentration of 2,4-D in percolate water over a two-month period following August 1993 and April 1994 applications was 2.6 and 1.2 parts per billion (ppb). The MCL for 2,4-D is 70 ppb.

The more mobile dicamba, they said, was discovered at concentrations of 2.5 ppb in 1994 and 1.7 in 1993. There are no MCL levels for dicamba, although 70 ppb is the most limiting of several legal standards for it as well.

The researchers also studied residue of the herbicides in grass clippings and thatch and found little about which to be concerned. "Considerably more dicamba, and especially 2,4-D, was recovered in clippings following the application in 1993 than was recovered in the 1994 study," they reported. "Nevertheless, in both studies no more than 0.25 percent of the herbicide applied was recovered in the clippings, indicating that clippings are not a major pathway for the removal of these herbicides from treated turfgrass areas."

In both years, peaks for concentrations of dicamba, and especially for 2,4-D, in soil and thatch were "clearly observable shortly after each of the two applications," the scientists said. "However, concentrations rapidly declined during the two weeks following each application, but still persisted at detectable levels for approximately two months."

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