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## AS WE SEE IT

JERRY ROCHE, EDITOR-IN-CHIEF



### A little bit of Santa Claus, a little bit of Robin Hood... not much of Ben Franklin

*"When you assemble a number of men, to have the advantage of their joint wisdom, you inevitably assemble with those men all their prejudices, their passions, their errors of opinion, their local interests and their selfish views. From such an assembly can a perfect production be expected?"—Benjamin Franklin*

WE THE PEOPLE of the United States, in order to form a more perfect union... demand an end to oppressive government influence over our right to life, liberty and the pursuit of happiness.

Forgive me for plagiarizing the first few words of the U.S. Constitution. But that message came through, loud and clear, to our legislators during the general election last month. By throwing a number of incumbents out of Washington on their ears, the people spoke.

I hope that the small-business community—the green industry in particular—was part of this collective voice. Some of what Congress legislated during the '80s and '90s has had a dramatic impact on our industry, if not through the EPA, then through FIFRA, OSHA or any number of other alphabet-soup agencies and laws that continue to sprout like weeds in Washington.

When I contemplate these problems, the memorable words of ABC-TV consumer reporter John Stossel often echo in my mind: "The market works in mysterious ways. Leave it alone, and it will regulate itself."

Certainly, if you tried to run your small businesses the same way the government tries to run itself, you'd be sleeping in cardboard boxes and dining on someone else's table scraps by now.

How is it, I wonder, that the government of the world's richest nation went

belly-up more than 20 years ago? How can our per capita earnings be among the highest in the world, our income tax rate hover around 20 percent, and our government still not have a penny to its name?

One of the reasons—appropriate to the coming holiday season—is that our federal government is the biggest Santa Claus in the world. We send millions of dollars to Somalia, Bosnia and other less fortunate countries. We break the bank sending U.S. troops to Haiti or the Middle East. We even play Robin Hood (rob from the rich, give to the poor, infirm and aged) here within our own borders.

We put up with porkbarrel spending, fraudulent welfare claims, and a massive bureaucracy that is buckling under its own weight.

No, these are not the words of a latter-day Ebenezer Scrooge. They're your own words—words I've heard while visiting you and chatting with you on the phone. Words that echoed in the halls of Congress as you were casting your votes.

Certainly, we all realize that occasions arise when the United States must help less fortunate people, both here and abroad. But you and I (as patriots first and small business men and women second) realize the folly of trying to be all things to all people.

With the 1994 elections, we have drawn the proverbial line in the sand. But our job isn't done yet. We must continue to closely monitor our newly-elected officials to make sure they don't often step over that line.

And you know they're dying to.

# LANDSCAPE MANAGEMENT

WE KNOW YOUR TURF®

DECEMBER 1994 VOL. 33, NO. 12

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*Jerry Roche*

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*Ron Hall*

## COLLEGE & ATHLETIC TURF

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Former teacher Kevin Clunis takes delight in showing others how to be more efficient and useful. He believes in education--everyone's including his own.

*Jerry Roche*

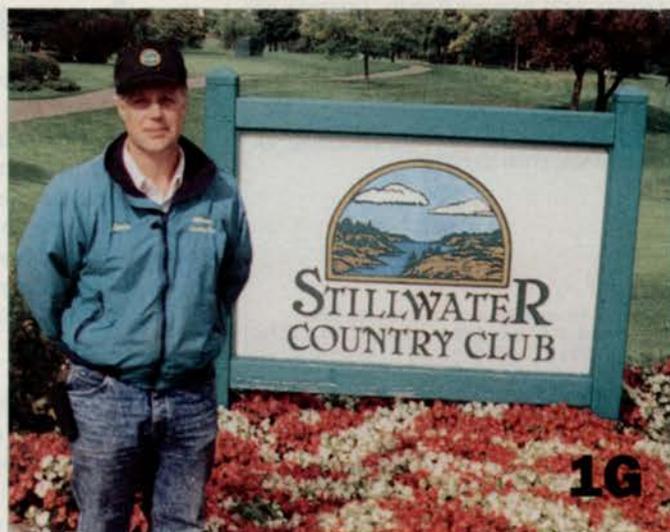


## HAPPY HOLIDAYS!

### Coming next year:

**January:** State of the Landscaping Industry in the U.S.—third of four exclusive surveys

**February:** State of the Golf Maintenance Industry —last of our exclusive surveys



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Here's how one community used tropical gardens, floral mounds and fountains in its parks to draw people back to a long-slumbering downtown.

*Ron Hall*

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**ON THE COVER:** Wrigley Field in Chicago, home of the Cubs, is one of the oldest and most respected athletic fields in the nation. Photo by Dr. Kent W. Kurtz.

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LANDSCAPE MANAGEMENT (ISSN 0894-1254) is published monthly by Advanstar Communications, Inc. Corporate and editorial offices: 7500 Old Oak Blvd., Cleveland, OH 44130. Advertising, accounting, advertising production and circulation offices: 131 West First St., Duluth, MN 55802; 1333 N.W. Norcross, Seattle, WA 98177.

Subscription rates: one year, \$39, two years \$58 in the U.S.; one year \$66, two years \$99 in Canada. All other countries: one year \$130, two years \$195. Current issue single copies (pre-paid only): \$4 in the U.S.; \$7 in Canada; elsewhere \$12; add \$3.50 per order for shipping and handling. Back issues, if available, \$10; add \$3.50 per order for shipping and handling (pre-paid orders only). Office of publication: Advanstar Communications, Inc., 131 W. First St., Duluth, MN 55802. Second class postage paid at Duluth, Minnesota 55806 and additional mailing offices.

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**POSTMASTER:** Send address changes to *Landscape Management*, P.O. Box 6198, Duluth, MN 55806. Revised date: November 30, 1993.



Printed in the U.S.A.

The logo for ESN is rendered in large, bold, green 3D block letters. The letters are set against a blue background that features a series of purple spheres of varying sizes arranged in a circular pattern around the text. A small 'TM' trademark symbol is located at the bottom right of the 'N' in ESN.

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# ASK THE EXPERT

DR. BALAKRISHNA RAO



## How to control purple nutsedge

**Problem: Is there anything to control purple nutsedge? (Texas)**

**Solution:** Your best approach would be to use Image. According to Lesco Co. representatives, Image plus MSMA along with a spreader/sticker provides better control of purple nutsedge than Image alone in your area. In this combination treatment, MSMA has been shown to reduce the phytotoxicity effect on desirable turfgrass from Image.

Image is slightly slow to respond to treatment. I suggest using a tank mix of one quart/acre of Image plus 2 lb. ai/acre of MSMA plus a spreader sticker. Do not use MSMA on St. Augustine turfgrass.

Make sure the turfgrass is not under moisture stress to reduce the possibility of phytotoxicity. Apply during the cooler part of the day, such as early morning or late evening, two to three days after mowing. Also, do not mow for another 48 hours after the treatment application. This would improve translocation and systemic movement of Image. Avoid watering for 24 hours after the application of treatment.

Generally, two applications of Image at 14-day intervals should be sufficient to help manage the purple nutsedge plants during the season. Often, these treatments may not be sufficient to manage the nutsedge problem the following year. Reports indicate that new nutsedge plants can emerge from the underground bulbs which are not killed the previous year. Depending upon the situation, you may find 50-to-70 percent of new nutsedge plants during the second year. Therefore, monitor the area and consider using Image treatment the following year as needed. If the problem reappears the third year, it may require further treatments. With this approach, the objective is to eliminate the new plants emerging from underground bulbs every year. Within two to three years of treatment, the problem should be eliminated satisfactorily. A new nutsedge material from Monsanto, Manage, is currently pending EPA registration at this time for most warm- and cool-season turfgrasses. Read and follow label specifications for better results.

## Sod webworm/grub trouble

**Problem: We are finding lots of sod webworms and grubs in lawns. We are thinking of using Sevin insecticide for managing both. Would this work? (Ohio)**

**Solution:** Yes, you can use Sevin insecticide to manage both sod webworms and grubs. Sod webworm larvae hide in the silken cocoons during the daytime and come out at night and feed at the base of tillers. Generally, they do not cause serious problems since sod webworms do not kill crowns. With the onset of cool and moist weather, turfgrass normally recovers well. Recovery can be further supported with proper fertilization. Insecticide treatments can be provided as needed if the problem is severe.

With grub control, the situation is slightly different. If the grub population is not very big with onset of good weather and

lots of rain, the turf may recover and the damage symptoms may not be very apparent. However, if the grub population is high, their extensive feeding on roots can cause severe injury. Turfgrass may not recover in spite of good growing conditions. For this reason, grub activity should be detected early, preferably around late July to early August, and registered insecticides applied as needed.

There are a number of good products in the market, but since you are interested in using Sevin, I will limit my answer to that product. After applying the insecticide, post-application watering is very important. This practice would provide about 80 to 85 percent control of grubs when treating with Sevin. The key is to apply early and water it in.

Read and follow the label specifications for better results.

## Persistent poison ivy

**Problem: A 30,000 sq. ft. field I manage is inundated with poison ivy. Until I took over, the field was cut twice each year at about six inches. From May 15 through August 15, I cut the field at 3 inches with a rotary mower. The leaves are smaller, but the ivy persists. The field is in full sun.**

**(Massachusetts)**

**Solution:** The problem with poison ivy is that it may be coming from a nearby wooded area. Poison ivy can spread primarily by vegetative viny stem growth, as well as from seeds. Once established, they can gradually keep spreading into larger and larger areas.

A perennial, poison ivy survives the winter and returns the next year. Its seeds remain viable in soil for several years. When conditions are favorable in spring, seeds can produce new plants.

Selective management in a turfgrass field is difficult, if not impossible. Growth regulator products such as trichlophyr or dicamba would be needed for selective control. Consider using herbicides such as Confront (at a high label rate), Turflon II amine (which contains trichlophyr and 2,4-D) or dicamba plus Weedone DPC combination.

Fall application may be advantageous. At that time, the sugar from the leaves moves down to the root system for storage. If the treatments are done before the leaves change colors and before defoliation, fall application may be good. Try in a small area to see how it would manage the problem. Another option is to treat the field in early spring when plants unfold. It may require at least two applications. Consider a third application as needed to help manage the problem.

*Dr. Balakrishna Rao is Manager of Research and Technical Development for the Davey Tree Co., Kent, Ohio.*

*Mail questions to "Ask the Expert," LANDSCAPE MANAGEMENT, 7500 Old Oak Blvd., Cleveland, OH 44130. Please allow two to three months for an answer to appear in the magazine.*

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# Benefits among the best in the green industry for athletic field managers

■ Ah, the joys of being an athletic field manager! Forget the weeds. Forget the complaints from irate parents. Besides the feeling of accomplishment that often accompanies watching a bunch of kids knock around on a safe, beautiful field, another of the business's true attractions is the list of financial benefits provided by employers.

From 401k plans to paid sick leave to partial or full retirement, these benefits are unequalled in the green industry.

Almost 100 percent of athletic field managers who responded to an LM survey last month get paid holidays and paid vacations. In addition, more than 90 percent of the sample receive paid sick leave, and health insurance that is at least partially paid by the employer.

(By contrast, less than half of all lawn care companies offer paid vacations and holidays, and less than one-third offer

**They're an experienced, stable bunch who have been able to provide the best playing surfaces for the least money.**

paid sick leave.)

It is no wonder, then, that 65.4 percent of our sample has been involved in maintaining athletic fields for 10 years or more. Just 18.2 percent has been involved for fewer than six years.

"It's pretty easy to get up and go to work in the morning," notes Steve Wightman, field supervisor for Jack Murphy Stadium in San Diego.

Part of the reason for lack of turnover is because of the job's very nature, he says. "It takes at least three to four years before

you feel comfortable preparing a field, regardless of how much you know. It takes a while to grow accustomed to your job because of all the variables."

John Michalko of Case Western Reserve University in Cleveland thinks students on college campuses are a factor. "Here, the customer changes every four years," he says. "I think the reason people stay around is security and dedication."

In August, LM's survey questionnaire was mailed to 750 athletic turf managers who subscribe to the magazine. By mid-September, we had received 174 valid answers, a response rate of 23.3 percent.

The average respondent maintains 10.8 baseball or softball fields, 6.9 football or soccer fields. Other fields maintained include intramural, practice, lawn bowling, all-purpose, rugby, parade and band, disc golf, radio aircraft, field hockey and volleyball. Average acreage is 104.7.

## THE NATIONAL SCOPE...

■ Projecting the average (mean) responses obtained in our survey to the national scope, we are able to come up with some useful figures for the size of the total domestic athletic field maintenance industry.

There are approximately 12,000 park systems and 20,000 high schools, colleges and universities in the U.S. with football, soccer and/or baseball programs. Therefore, the total dollars spent on athletic field maintenance in the U.S. each year—including employee wages, salaries and benefits—appears to be very close to **\$2.0 billion**. (This figure adjusted for abnormal survey responses.)

Dollars spent on purchased supplies breaks down something like this:

|  |                      |
|--|----------------------|
| <b>High-end equipment (aerators, trucks, tractors)</b> | <b>\$499 million</b> |
| <b>Fertilizers and pesticides</b>                      | <b>\$434 million</b> |
| <b>Mowing equipment</b>                                | <b>\$322 million</b> |
| <b>Irrigation</b>                                      | <b>\$178 million</b> |
| <b>Turfseed/sod</b>                                    | <b>\$112 million</b> |

Diane Gildemaster, district supervisor for the Sioux Falls (S.D.) Parks and Recreation

Department, is on the high side of being a typical respondent. Her department maintains 33 baseball or softball fields and 41 football or soccer fields.

"We're finding that our existing leagues would like to expand," she reports, "but we just don't have the facilities. People are demanding more quality and more use.

Thankfully, the associations are starting to pick up some of the maintenance costs."

As might be expected, nearly all the survey respondents reported mowing and fertilizing fields. However, a surprisingly high 94.0 percent re-reported aerating

at least one of their fields on at least an annual basis.

"Our school is not big enough to have a football team, so our soccer fields are being used constantly," notes Denton Smith of Lenox (Mass.) Memorial High School. "We have huge leagues, spring summer and fall, and our fields are being pounded. But aeration does a hell of a job" of keeping them safe and usable.

Another respondent, Jim Robinson of the Garner (N.C.) Parks and Recreation Department, has even tried deep-tine aeration, a procedure that is becoming more popular on golf courses but is not yet being used on a widespread basis by athletic turf managers.

"We had problems with overuse and abuse on our football and soccer fields," Robinson says. "We contract the Verti-Drain aeration from a local golf course. It's an expensive operation.

"The jury's still out on it because we had to get right back on the fields this year, so it was not a fair test. However, damage sustained this year was kept to a minimum."

Weed control, reseeding/overseeding

## 1994 State of Athletic Turf Maintenance

### TYPES OF FIELDS MAINTAINED

|                                | % of sample  | Mean         | Projected to readership <sup>1</sup> |
|--------------------------------|--------------|--------------|--------------------------------------|
| <b>BASEBALL/SOFTBALL</b>       | <b>95.0</b>  | <b>10.8</b>  | <b>50,643</b>                        |
| <b>FOOTBALL/SOCCER</b>         | <b>87.1</b>  | <b>6.9</b>   | <b>29,665</b>                        |
| <b>OTHER<sup>2</sup></b>       | <b>42.1</b>  | <b>3.6</b>   | <b>7,481</b>                         |
| <b>TOTAL FIELDS MAINTAINED</b> | <b>100.0</b> | <b>21.2</b>  | <b>87,789</b>                        |
| <b>TOTAL ACRES MAINTAINED</b>  | <b>100.0</b> | <b>104.7</b> | <b>516,800</b>                       |

<sup>1</sup>Total athletic field readership of Landscape Management magazine, June 1994 = 4,936

<sup>2</sup>"Other" types of fields mentioned in survey: intramural, practice, lawn bowling, all-purpose, field hockey, volleyball, recreational, open turf, passive play, parade, band, rugby, playground, disc golf, radio aircraft

### Type of Maintenance Performed (by percent of sample)

**MOWING 98.2%**

**FERTILIZATION 96.4%**

**AERATION 94.0%**

**WEED CONTROL 87.4%**

**RESEEDING, OVERSEEDING 83.8%**

**IRRIGATION 81.4%**

**INSECT CONTROL 52.1%**

**DISEASE CONTROL 47.3%**

(Other maintenance performed: topdressing, dethatching, painting, dragging infields, sod installation, levelling, litter control, safety control, fence maintenance, light maintenance, bleacher maintenance)



and irrigation are other tasks performed by more than 80 percent of our sample readers. Athletic field maintenance, however, doesn't end with the turf. Most respondents report being responsible for infield maintenance, and many report painting, levelling, safety monitoring and fence, light and bleacher maintenance as allied duties.

"We've got state-of-the-art infield maintenance equipment," boasts Tim Stubbs of the Bowling Green (Ohio) Parks and Recreation Department. "We use our Bannerman Diamond Master to level our infields on a daily basis, and we've been told we have the best infields around. Bowling Green State University's athletic department has even borrowed our equipment to use on their varsity baseball field."

Gildemaster says Sioux Falls rolled its fields for the first time this year after a recent regrading program. "It took out some of the little ruts we wouldn't have normally been able to rake out," she says, "and the community is really proud of the fields now."

According to the survey results, athletic field managers are major purchasers of mowers of all sizes, aerators, irrigation equipment and compact tractors. In addition, three out of four managers purchase dry-applied fertilizer and turfseed on an annual basis.

Average annual budget for athletic field maintenance was more than \$162,000, but that was skewed upward by four respondents who reported budgets of \$2 million or more. More typically, the annual budget for materials is around \$30,000, the median response.

Budgets, the survey notes, are growing incrementally. More than half of our respondents reported no growth or negative growth in their budgets from 1993 to 1994, though the overall average was plus 0.5 percent. Next year, there will be about a 1.6 percent increase in budgets overall, our survey reports.

By far, the greatest portion of the respondents were affiliated with public parks—58.7 percent. An additional 32.3 percent work for schools or universities.

—Jerry Roche

## NEXT MONTH:

### State of the Landscape Industry

| PRODUCT CATEGORY       | % OF SAMPLE | MEDIAN DOLLARS | MEAN DOLLARS | PROJECTED TO CIRC.     |
|------------------------|-------------|----------------|--------------|------------------------|
| Soil aerators          | 24.5%       | \$2,000        | \$4,394      | \$5,313,752            |
| Fert./herb. combos     | 63.3%       | \$3,000        | \$7,479      | \$23,368,046           |
| Domestic pick-ups      | 38.8%       | \$15,000       | \$22,200     | \$42,516,730           |
| Dry-app. fertilizer    | 76.9%       | \$2,750        | \$4,727      | \$17,942,671           |
| Ornamental fert.       | 30.6%       | \$1,000        | \$1,860      | \$2,809,374            |
| Liquid-app. fertilizer | 16.3%       | \$1,000        | \$2,025      | \$1,629,250            |
| Post-emerg. herbicides | 63.9%       | \$1,000        | \$2,269      | \$7,156,662            |
| Pre-emerg. herbicides  | 47.6%       | \$1,000        | \$2,773      | \$6,515,263            |
| Small mowers           | 32.7%       | \$1,000        | \$2,892      | \$4,667,896            |
| Mid-size mowers        | 21.1%       | \$8,000        | \$10,694     | \$11,137,758           |
| Large mowers           | 40.1%       | \$14,000       | \$17,129     | \$33,904,046           |
| Turfgrass sod          | 40.1%       | \$1,500        | \$3,937      | \$7,792,646            |
| Irrigation/sprinklers  | 66.0%       | \$2,000        | \$8,456      | \$27,547,619           |
| Compact tractors       | 28.6%       | \$14,000       | \$20,655     | \$29,158,581           |
| Turf fungicides        | 17.7%       | \$1,000        | \$4,950      | \$4,324,676            |
| Turf insecticides      | 29.3%       | \$1,000        | \$2,249      | \$3,252,612            |
| Turf-seed              | 74.8%       | \$2,000        | \$2,589      | \$9,588,919            |
| <b>TOTAL</b>           |             |                |              | <b>\$238.6 million</b> |

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# Green industry discovering CAD

**Today's design software is affordable and easier to use, but it still takes a pro with a plan to make it work.**

■ Computer-aided drafting, drawing, or design—call it whatever you want. Most people refer to it by its acronym, CAD. In the landscape business, it allows knowledgeable users to produce draftsman-like landscape plans more efficiently than they can by hand.

The key word here is efficiency. It's a tool that can make the landscape design/sell/implementation process more efficient.

Almost all professional users also describe it as a time-saving tool. This is particularly true when they revise landscape plans. It's easier to make changes on the computer rather than with a pencil.

But perhaps the real benefit of using CAD is its ability to more efficiently "marry" designs with their real-life financial parts. In a very real sense, it acts as a calculator, starting by providing material takeoffs of designs. Most programs can quickly provide volume calculations for cubic yards of mulch, crushed granite, or other landscape material, too.

Actually, you did the hard work prior to the design process by pricing your materials and figuring specific labor hours for each type of task. You inputted this data into the program before you made your first design.

But it's CAD's ability to turn out neat, colorful designs quickly that attracts most attention in the industry.

"I'm competing with guys who do sketches on a yellow note pad," says one contractor who claims he turns out full-blown, detailed residential plans in three hours where it used to take him almost a day. "When I hand a potential client one of my designs, who do you think is going to get the job?" he asks.

Explains another landscaper: "Two contractors come to your home. Both of them walk around your property, and you tell them all the things you want done—a brick walkway, a deck, flower beds.

*continued on page 14*

## CAD SUPPLIERS

**LandDesignerPro for Windows**  
Circle No. 311

CAD program to help landscape pros produce comprehensive proposals with full-color designs, plant and materials lists, and cost estimates. New feature: a grow option which portrays landscapes as they will mature over time.

**LandWorks for MAC and PC**  
Circle No. 312

Combines CAD power of PowerDraw (Engineered Software) with landscape features. Built-in plant symbol, irrigation symbol and construction details libraries, multiple layers (base sheet, irrigation layer, planting layer, etc.), color capability, easy calculation of square footage, linear feet, plant counts, etc. Output to Apple Imagewriter, LaserWriters, color PostScript printers, HP plotters and printers. System requirements Mac SE or better.

**Professional CAD by UDS**  
Circle No. 313

For IBM PCs and PC compatibles with Windows. Drafting modified with landscape symbols and tools. CAD drawing automatically converted into an estimate. Computer will do the take-offs. When combined with UDS Estimating software, can cost a project down to the last tree stake. Will also print a detailed work order.

**Site Designer by Landcadd**  
Circle No. 314

Site Designer by Landcadd. Windows-based. Stand alone. Provides comprehensive site planning and landscape design tools, irrigation and estimating capabilities. 3-D capabilities. Site planning. Irrigation design. Landscape design with growth simulator. Fully automated reports. Minimum requirements: 386 computer with a math co-processor, Windows 3.1 and 8 megabytes of RAM.

**Gardenview**  
Circle No. 315

Plant database (can be modified) and 3D garden and landscape design capability. 3-D views from any perspective and any day of the year for correct coloration. Needs IBM compatible.

**ImageCELS Designer**  
Circle No. 316

High-quality, photo-realistic texture maps including brick, block, pavers, cement, finishes, roofing, stone, fixtures, people, sky, trees and landscaping materials.

**Landworks**  
Circle No. 317

CAD system for landscape drafting on a Macintosh. Irrigation symbols, construction details and landscape tutorials. Needs Macintosh SE or better.

**Mini CAD 5**  
Circle No. 318

Mini Cad 5 combines 2-D CAD, 3-D CAD, a database, spreadsheet, and a macro language into one program. Tools make landscape design easy. Both 68K and Power Mac versions included in one box. Requires Mac Plus or better, 4 MB RAM.

**LLDesigns Package**  
Circle No. 319

Driven by DeluxePaint II. Meticulous, colorful hand-drawn graphics for more than 550 cultivars of annuals, biennials, perennials, bulbs and woody plants. Disc containing cultivar info that can be imported into the word database of computer. Various packages available. Need IBM or compatible 386 or larger with minimum of 2 megabytes of RAM. Requires DOS 5.0 or higher.

## Landscapers agree: they're more efficient, accurate with CAD

■ Patrick Burrier considers himself an artist.

He likes the feel of a drawing pencil in his hand. For years he drew meticulous and colorful landscape designs for clients. He learned the art at Michigan State University, and refined it at his own landscape business in northeast Ohio. He still dusts off his tee-square and pencil. But not often. Burrier designs landscapes mostly on his computer screen now.

The computer, and particularly the Landcadd design software, are tools that allow him to:

✓ Reduce the time it takes for designs and revisions, often in half. Clients usually spend less on design fees. Burrier himself can make more presentations and land more jobs.

✓ More efficiently and accurately calculate costs for designed projects.

✓ Bring customers more directly into the designing process.

Sometimes on a Saturday morning, in fact, he invites a prospective client to his office. Burrier encourages suggestions as he directs the computer's cursor in building a design on the electronic screen. Almost effortlessly he can widen a walkway, change the color and texture of pavers, or add a flower bed.

"Before, if I took a master plan out to client in pencil and the client decided to change some details, I had to go home and redraw the whole plan," says Burrier. "With the computer I can make changes in minutes. Then I just reprint it."

That's just one of the benefits that computer-aided design (CAD) provides Burrier's Mentor Landscapes & Supply Co.

"When I visit a property now I put a tape measure on it. We can be right on the money with the computer, down to a quarter of an inch on a design," he says.

This allows Mentor Landscapes to bid and estimate projects accurately. Once the design is complete, and all of the design elements are in place, the computer calculates the exact amount of materials needed—plant material, mulch, pavers, retaining walls, all materials, in fact, needed for the job.

Then, using real-life prices that Burrier has assigned (and periodically updates) for



Pat Burrier: CAD won't make you a better designer, just a more efficient one.

each of these elements, the computer calculates his cost for materials based on each design, and also the labor. It also figures an estimate for the client. Almost at the touch of a button.

"I'm not going to end up saying to a client, 'we forgot to figure these materials and we've got to charge you another \$2,000.' We don't make those kinds of mistakes," he says.

Burrier attended classes at nearby Lakeland Community College to learn how to use AutoCadd, the drawing/designing software for designing everything from widgets to buildings. He then piggybacked the more specific Landcadd land planning software into his system.

By adding custom touches, like his own intricate and colorful plant symbols and an impressive company title block, Burrier makes his designs stand out even more.

Burrier estimates he's spent about \$20,000 on his computer, a 486-series coprocessor with 66 mhz and two drives including a 540-megabyte hard drive, a 24-by-36-inch digitizing tablet and a plotter, plus his design software.

He plans to incorporate more 3-D into his designs. He's also investigating using animation.

But some landscapers say they don't need all the designing capacity of AutoCadd. They say newer stand-alone programs fulfill their design needs fine.

Robin Cloetens of Garden Keepers, a small design/install company in Lake Port, Mich., designs distinctive perennial gar-

dens, rose gardens, water gardens, Japanese gardens and herb gardens.

Cloetens uses a PC and LandDesignerPro software.

"When we design a project, we design what it's going to look like in 10 years," she explains. "We do a full-blown design and then, when we find out what the client's budget is for this year, we back the design down to what they can afford. Most clients love it."

Designs on the computer screen can be held in a client's hand after coming off a dot-matrix printer. They can be done on translucencies layered and put into a binder to show the project broken into its various phases, too.

Bruce de Wit of Rosemont Nursery, Grand Rapids, Mich., puts together booklet-sized presentations containing several different views of a client's property with his software from UDS. Moreover, each computer drawing is accompanied by a materials list and prices.

"I think AutoCadd is too difficult for a small landscaper who doesn't do designing or estimating every day," says de Wit, adding that he found the UDS program relatively simple to master.

"But convincing people that they can do this, too, can be difficult," he admits.

De Wit says that since he combined the computer drafting package with the UDS estimating software he'd been using for several years, he almost doubled the number of estimates he can prepare.

—Ron Hall

## CAD from page 12

"One hands you a little drawing he's just done along with a business card. The other comes back the next day. He's got a cover letter kicked out on his laser printer, a drawing done on his computer. He's got a plant list, a reference list, a whole portfolio of information, including a professional estimate.

"Who's going to look more professional?"

CAD is finally seeping into the landscape industry, although some landscape pros still approach it like it's a snake in a shoe box. That's changing as design software gets easier to operate. Programs are also becoming more affordable. This is catching the attention of landscapers, most of whom run small companies.

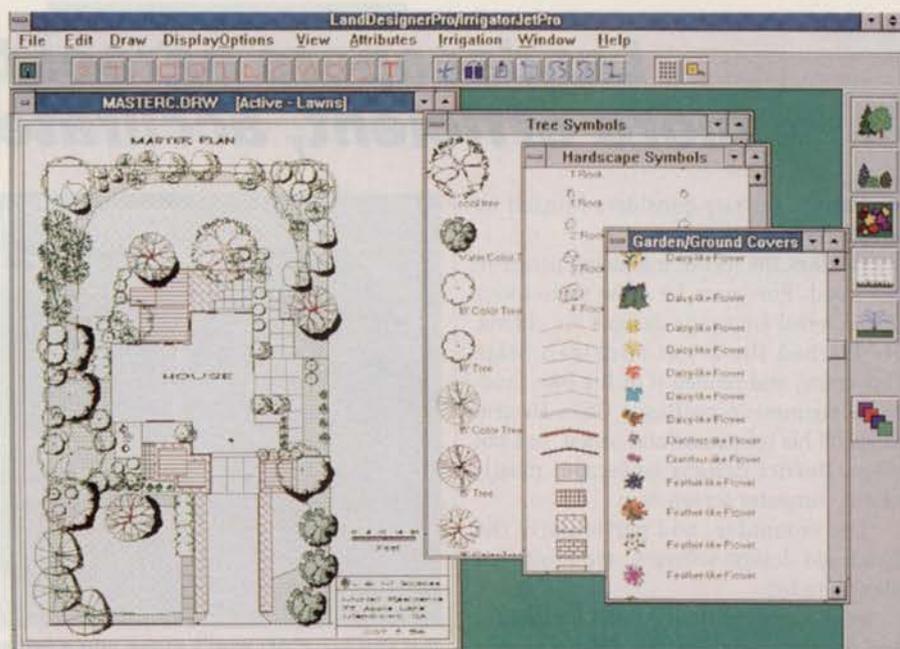
Most CAD-type programs for the professional market come, thankfully, from people who know the landscape business, then developed programs for it.

Their advice to landscape pros: forget the "rinky dink" stuff costing \$59.95 at the local builder supply store, software targeted primarily for do-it-yourselfers. Most of it was written by computer people who *think* they know landscaping.

The good landscape design software starts at about \$400. In fact, landscape pros—including but not limited to landscape architects—who do a lot of designing can easily spend \$20,000 and more for both their hardware and software. That's a lot of computer-related power, enough, in some cases, to moonlight as a rocket designer. No kidding.

Many landscape contractors don't need all of these accessories. Many can incorporate CAD—in 2-D plan views—for under \$2,000 if they're already computerized.

To run CAD programs easily, your IBM-compatible computer system should be at



**LandDesignerPro for Windows, from Green Thumb Software, displays landscapes as they will mature over time.**

least as large as a 486-DX, claims one knowledgeable user. Smaller systems like 286, 386 and 4786-SX lack the math co-processor chip and speed needed to do calculations required by CAD software.

Whatever the software, your computer designs should not end up looking like they're done by a 13-year-old with too much free time. In fact, most landscapers customize their programs, particularly plant symbols and title blocks. They want their designs to be distinctive.

"We want to see drawings that look hand-drawn, except we do them on the computer where we have this spectacular editorial capability," says the owner of a small landscape firm. "Our designs serve as the calling card for our work."

But CAD, apart from its value for designs and presentations, can be a powerful business management tool, inasmuch as it has to work in tandem with all the other information related to running your business—costs, estimates, schedules, work orders.

"It's nice to have a drawing, and that adds to your professionalism, but the fact of the matter is you still have to count up how many plants there are. And you still have to put a price on those plants. And you still have to calculate how many hours are going into the job," says a Michigan contractor and CAD user.

With today's constantly evolving landscape CAD software it's just getting easier to do.

—Ron Hall

## Salt-tolerant grasses to the rescue

**Georgia researcher rediscovers long-neglected seashore paspalum; seed firms screen traditional turfs.**

■ Salt kills or weakens most turfgrasses.

It wilts and desiccates them because salt in the soil solution creates a high osmotic pressure that restricts absorption of water and nutrients by turfgrass roots. But managers cursed with maintaining high-quality turf in saline environments can smile. Help is on the way in the form of a growing selection of salt-tolerant turfgrasses.

These grasses possess many of the characteristics of fine turf. In fact, they *are* fine turf, but they remain healthy in locations where turfgrass traditionally struggles:

✓ areas irrigated with recycled water (some effluents have high salt content),

✓ along highways "salted" during winter storms, and  
✓ ocean-side golf courses.

While traditional species are being rescreened for salt tolerance, some scientists like Dr. Virginia Lehman at Lofts have been developing a newer alkaligrass, Salty. And others are readying grasses you may not be too familiar with yet.

Ronny R. Duncan, Ph.D., has collected—and is evaluating—270 ecotypes of seashore paspalum in turf plots at the University of Georgia, Griffin, Ga. He seeks varieties that thrive on golf courses with high salt levels.

"I'm confident I already have the grass-

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es," says Duncan. "It's a matter of getting them evaluated for the fairways, the greens and the tees, then finding the best ones and going from there."

Actually, seashore paspalum has been found on U.S. courses since the mid-1960s when Pacific Sod introduced a cultivar, Adalayd from Australia, says Duncan. Initially used on golf courses in southern California, superintendents in the Southeast worked with it, too. It probably didn't find greater favor, he believes, because few superintendents knew how to manage it. Most treated it like a hybrid bermudagrass and encountered scalping and thatch problems.

"If you manage it like centipedegrass with very low fertility and cut back on the water, then it does extremely well," says Duncan. "We're developing management protocols for this grass for specific sites like a green, a tee, for fairway use and for roughs too."

Duncan calls seashore paspalum "the year 2000 grass," although he acknowledges it generally takes eight to nine years to get specific varieties into production.

"I told the USGA I wasn't going to sit back and wait for things to happen," says the University of Georgia professor. "In another two to three years we're going to know what's going to work. We will then evaluate them on many, many sites prior to release."

Beyond its ability to tolerate high salt levels (some cultivars will withstand up to 14,000 ppm salt), seashore paspalum requires much less fertilizer than either bentgrass or bermudagrass. So far, Duncan says he's encountered no major insect or disease problems. His major investigations have focused on winter hardiness. He says that shouldn't be a problem either and predicts the grass will be used on golf courses



**Trials at International Seeds shows what salt does to some varieties, in this case Eureka hard fescue and Sabre *Poa trivallis*.**

as far north as the coastal Carolinas.

"From an environmental standpoint, this grass is looking very good," says Duncan.

Although seashore paspalum has seed production capabilities, initially it will have to be vegetatively propagated. Duncan says the species has a complex called self-incompatibility—it must have pollen from plants with a different genetic background. "It's a problem that will have to be worked out," he admits.

Other turfgrass breeding programs have identified other turfgrasses with increased salt tolerance. Some are already being marketed. Expect more to become commercially available.

This past season Turf-Seed Inc. harvested one field of Seabreeze slender creeping fescue that, according to plant breeder Crystal Rose Fricker, was both salt tolerant and performed admirably in shade trials. "We're trying to put out more acres of Seabreeze this fall," she says.

"We have a group of tall fescues that we're cycling (for salt tolerance)," she adds. "In fact, I did all the cool-season species.

We have the survivors planted out now." Particularly promising: salt tolerant bentgrasses collected by Dr. Joe Duich on golf courses located along the Eastern seaboard.

"We have a slender creeping red fescue, Marker, that does very well at 5000 ppm," says Craig Edminster, director of research, International Seeds. He's been examining turfgrasses growing in solutions with 1500, 2500 and 5000 ppm of salt.

"We plan on screening virtually all the species that we have in our program. Our next group will be our new, improved perennial ryegrasses," adds Edminster.

Having identified salt-tolerant varieties, the company can then offer mixtures that establish rapidly and maintain good persistence along roadsides that get winter road salt. "Of course, some of these will be used on golf courses or in areas that irrigate with effluent water too," says Edminster.

Lofts Seed says its new alkaligrass developed by Virginia Lehman performs extremely well under high salt and/or alkaline soil conditions. Aply named Salty, it's described as a slow-growing, cool-season turfgrass with fine-leaved texture. It can be cut to as low as 3/4" or allowed to grow about 16," creating a natural-looking low-maintenance turf.

Lofts is targeting it for full sun at sea shores and along roadways and sidewalks with salt problems. In fact, says Lehman, it performed admirably on an oceanside hole at famed Pebble Beach, providing healthy turf when the overseeded ryegrass failed because of salt.

It can also be used for winter overseeding of dormant bermudagrass where soil conditions dictate use of alkaligrass, says Lehman. Quantities are available.

—Ron Hall

## Relative salinity tolerance

### GOOD

Bermudagrass

Zoysiagrass

Creeping bentgrass

St. Augustinegrass

### MEDIUM

Tall fescue

Perennial ryegrass

Colonial bentgrass

### POOR

Meadow fescue

Red fescue

Kentucky bluegrass

Centipedegrass

Source: "Turfgrass Science & Culture" by Dr. James B. Beard

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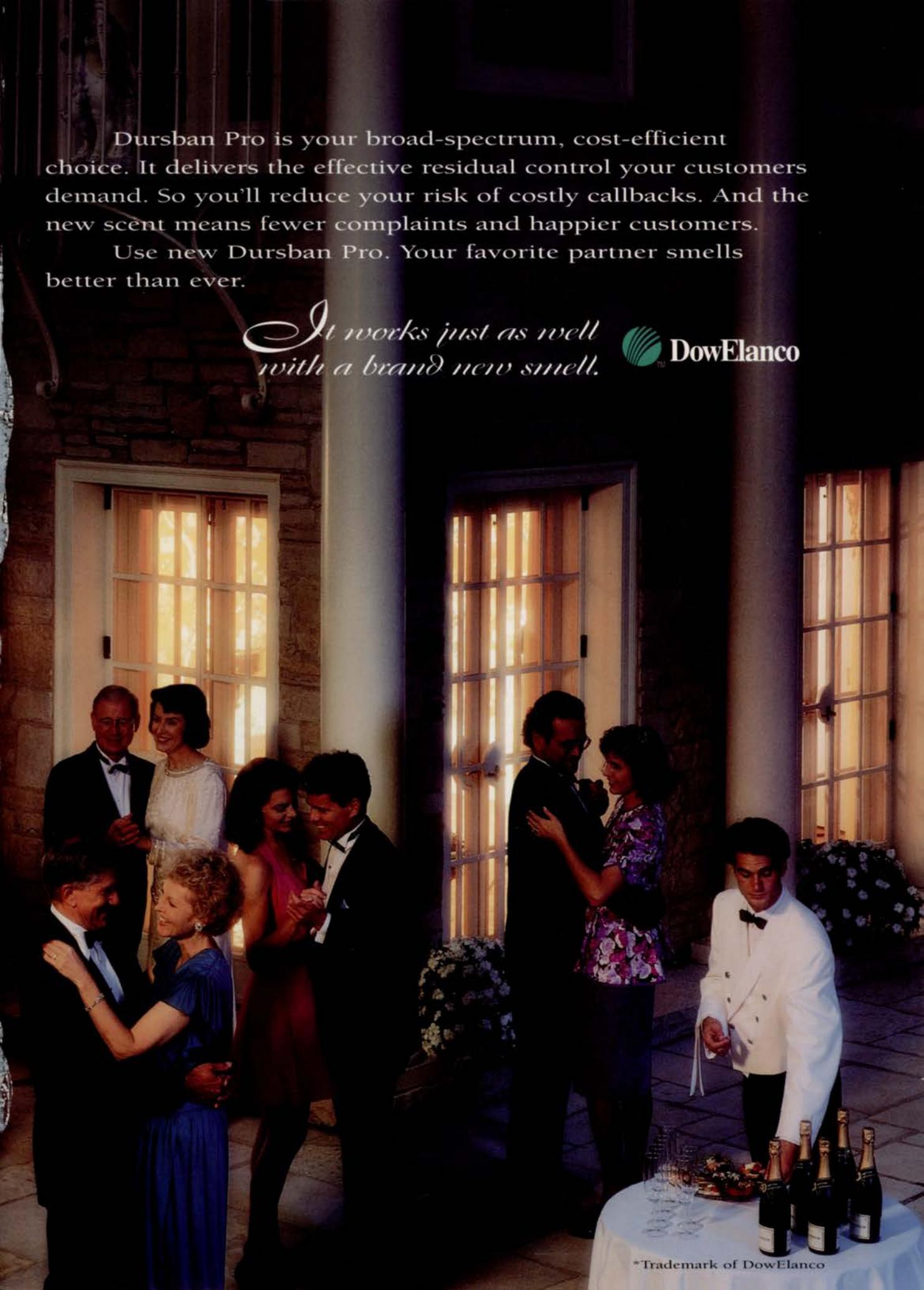
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# GOLF & ATHLETIC TURF

## Education never ends at Stillwater Country Club

**This former teacher takes delight in showing others how to be more efficient and useful.**

■ Kevin Clunis, superintendent at Stillwater (Minn.) Country Club, believes in education—everyone's, including his own.

It's only natural: Clunis received a bachelor's degree in education in 1981. He even taught school for a while before pursuing a two-year degree in turf so that he could return to one of the part-time jobs he had once treasured—working on a golf course. He was assistant superintendent at Stillwater for just one month before being promoted.

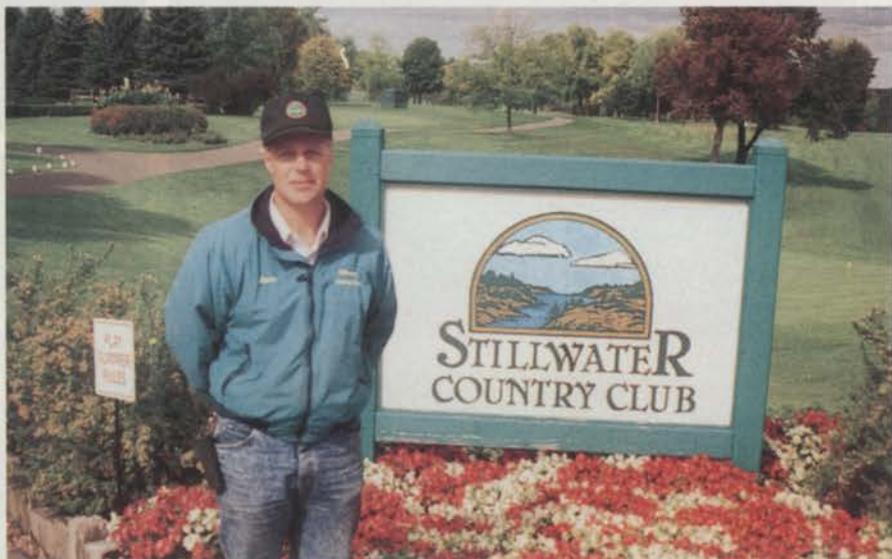
"I enjoy teaching people new things," says Clunis. "Everyone on staff has to know how to operate a weed whip and a walking greensmower. In our profession, you can't stop learning."

The training program Clunis devised is basically hands-on instruction, though videotapes on safety procedures are also used.

He has 19 employees, including a full-time mechanic and a full-time assistant. "I let part-timers do some thinking, and they take pride in that," Clunis reveals.

His assistants are normally hired from the ranks of newly-graduated college students in golf/turf studies. After hiring them, Clunis teaches them everything he knows and, "in two or three years, I move them on" to, perhaps, their own course.

Clunis is also very active in educating



Even after 11 years, superintendent Kevin Clunis still walks out onto the course to watch the sun rise every morning.

his fellow superintendents. He was one of a large group of supers who helped formulate a loose-leaf binder about environmental considerations for members of the Minnesota Golf Course Superintendents Association. The binders were received so well that the Golf Course Superintendents Association of America (GCSAA) is considering a similar project on a national scope.

Clunis has a very laid-back managerial style. "I feel very comfortable allowing people to make mistakes. That hits home a lot more."

"I keep a list of jobs that have to be done posted. I let them pick and choose what they want to do. I'm not always a dictator, and they respond to that."

His philosophy of course management is day-to-day consistency, which is work-

ing well. "A long time ago, a member told me that a player should be able to shoot the course record any day of the week," he notes. "I don't know what the greens stimp at. I know I don't get any complaints, so why worry?"

His worst problem is the damage done by snow mold. "You have one chance before the snow comes to apply product. In Minnesota, you don't get another chance," he says. "Plus, the things that go with it are also problems: ice damage, desiccation—things like that."

Clunis closes the course at the beginning of November every year, then he starts evaluating "what went good and what went bad. We plan through the end of the year and make mid-course corrections.

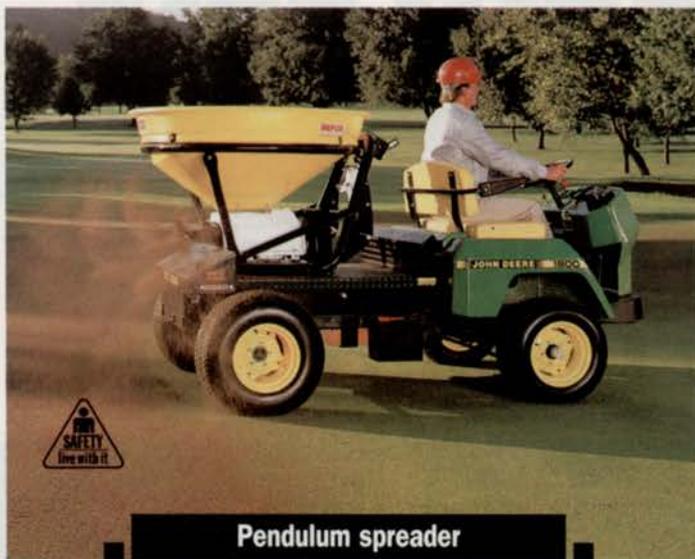
*continued on page 4G*

### ELSEWHERE

**Coaxing people  
to new downtown,  
page 4G**

**Bring your  
golfers back,  
page 5G**

**Controlling  
moss algae,  
page 8G**



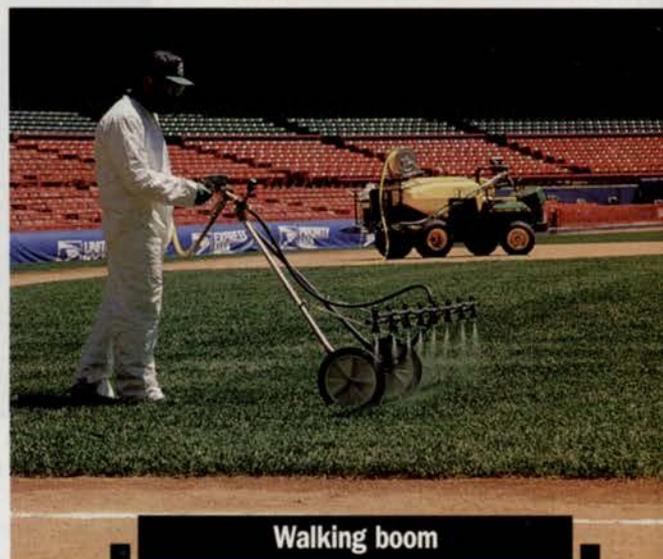
Pendulum spreader



Chemical injection system



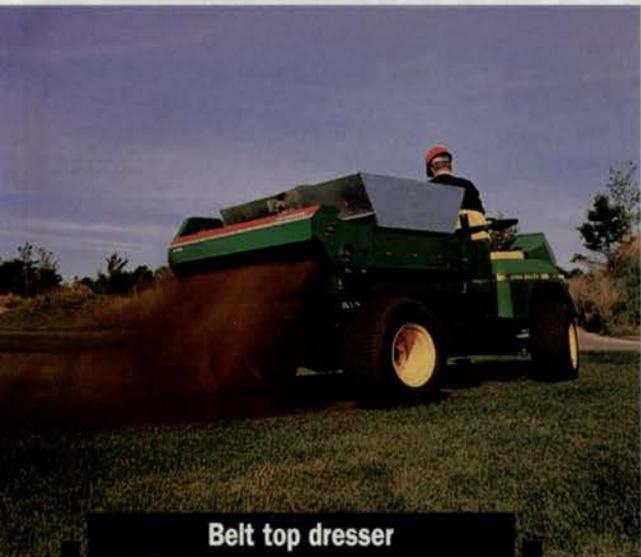
Dump option



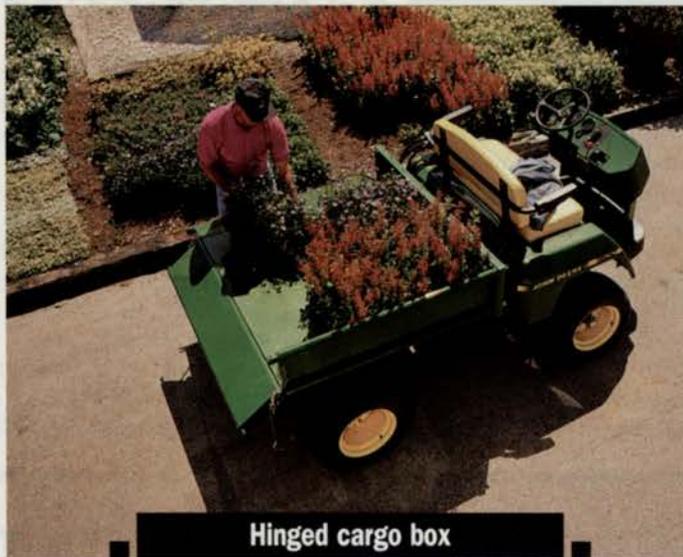
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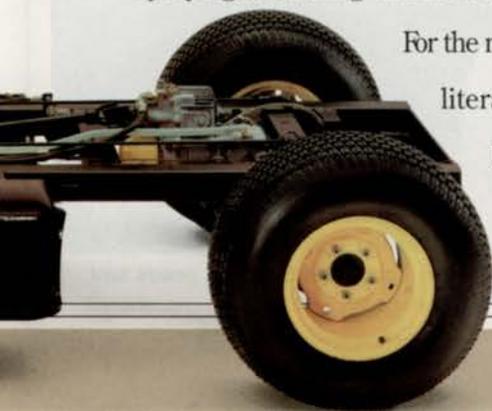
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**STILLWATER** from page 1G

We stay focused on everything involved."

Stillwater is an 18-hole private club founded in 1925 as nine holes. The second nine was built in 1959.

"I can honestly compare my course to the exclusive clubs," says Clunis. Prospective members have taken note, too. The club's membership cap is 415, but the waiting list is 400 names long, even though it was the last private club in Minnesota to admit females as stockholding members (1993).

Members must live within five miles of the golf course. Membership is just \$750 per year, and every penny of the club's membership dues (almost \$400,000) goes toward course maintenance.

"I get the dues money, and the clubhouse is set up to break even," notes Clunis. "Money from the pro shop, guest fees and golf car rental balances all other expenses."

Members—43 percent of whom are retired—"have done a lot of work for the club," Clunis observes. "Three times last

summer, they had 'seed & soil' days where they seeded fairways for me. They have a lot of equity in the club.

"Compliments are always wonderful. They go a long way toward getting me through the season."

Kevin Clunis is doing what he loves, and is happy and content being what he is. Every morning, he walks onto the course and watches the sun rise. "In 11 years, there has never been a day that I didn't want to go into work."

—Jerry Roche

## 'Unique' parks coax downtown rebirth

**Here's how one community used tropical gardens, floral mounds and fountains to draw people back to a long-slumbering downtown.**

■ Exciting parks can help reinvigorate a downtown. A perfect example is Sandusky, a lakefront city of about 35,000 in north central Ohio. Five acres of uniquely landscaped city gardens in the city's Washington Street Park seem to be coaxing its long-slumbering downtown to life again.

Its keeper is Tom Ott, parks and greenhouse director for the city. He and six other city employees design, plant and maintain parks that are as unique and inviting as you'll find in any city.

Ott is a self-admitted "plant" person. He and his family run a small commercial nursery specializing in evergreens on a farm outside the city, too. Although neither he nor any of his co-workers possess degrees in horticulture, he describes them as dedicated landscape professionals. "They really get into what they're doing. They care about really care about our parks."

In his early 40s, Ott is just old enough to remember when downtown Sandusky was the area's cultural and retail mecca. That's when families lined up in front of the city's two downtown theaters after shopping its two major department stores.

Or when teenagers "buzzed the ave." Sandusky Bay on Lake Erie anchored the north end of the downtown cruise; Washington Street Park, with its fragrant gardens, the southern. The kids gathered

at the Frisch's Big Boy Restaurant on balmy summer nights. They arrived in 'Vettes and souped-up Fords, but mostly family sedans. Merchants complained bitterly of the parade of brake lights and polished chrome. Friday night, after all, was a busy shopping night.

But the complaints dried up 20 years ago, as did downtown retail business—just after developers smeared a shopping mall over 40 acres of bean fields about five miles south of the city.

They left behind a shell of a downtown, and incredibly quiet summer nights there.

To hear Tom Ott tell it though, people *are* returning to downtown Sandusky although it'll probably never again be the retail center it once was. About 5,000 turned out for the 1994 July Fourth bash. Many thousands more visit the city's

annual Holiday of Lights celebration in the parks Thanksgiving through New Years. Ott and his small crew put up 35,000 lights in the parks.

Day-to-day evidence of the downtown's rebirth lies in the restored, ornate, 60-year-old State Theater; the trendy new apartments and condos along Sandusky Bay; the renovation of the former Lasalle's Department Store building into county offices. The building overlooks the park's gardens.

These parks are diverse and inviting with their lush gardens of tropical plants (palms, bananas, bird of paradise, elephant ears, castor beans), a Japanese-style sunken garden, succulent/cacti garden, fountains, intricate floral mounds. Many plants are used season after season, like several 75-year-old Phoenix palms.



**Tom Ott, Sandusky Parks/Greenhouse Director, spent just \$700 on seeds and plants this season in creating a downtown wonderland.**

Ott is thankful that the city has never abandoned its downtown parks.

This year Sandusky budgeted just over \$300,000 for its greenhouse and parks. "The city's been very fair with our budget. I've been real happy with the way they've treated us. Our division's never been cut," says Ott.

Parks include five acres downtown and smaller sites in other areas of the city, including flowers and beds at city offices and fire stations. Most of the budget goes for salaries. It's a bargain considering the dedication of his crew, believes Ott. "I keep getting better and better people," he says.

Realizing the budgets are always tight, Ott's crew saves money where it can.

"We only spent about \$700 on plants and seeds this season," says Ott. "We propagate almost all plants from seeds that we harvest ourselves or from cuttings. In fact, we probably couldn't even buy the amount of alternanthera (Joseph's coat) that we use."

By mid-August, co-workers begin taking cuttings of the dark-leaved alternanthera for 1995 beds. They usually prepare 400 flats—60,000 plants—used mostly as lettering or background in Washington Park's six floral mounds. Lighter green santolina forms the borders of these displays which proclaim significant events in the community—for instance, the 75th Anniversary of the American Legion. Or the 150th year of Emmanuel United Church.

"Some of the mounds are reserved up to the year 2018," says Ott, admitting that they take lots of maintenance. To climb onto the mounds without damaging the plants, workers use wooden "chicken ladders."

"We trim them every 1½ or 2 weeks. It takes all of us two days. Three of us take



Rick Choquette, left, and Tom Speir take obvious pride in Sandusky's fanciful mounds.

off with gasoline hedge shears. We've really gotten good with those shears. They can trim just about anything. And what we can't get with the gasoline shears, we get with manual shears."

In fact, if it weren't for power shears and string trimmers, Ott says he and his crew could never keep up with the maintenance.

"I'm actually kind of a plant rat. I hate to throw a plant out. Sometimes my co-workers get upset with me because we have to water, fertilize and spray everything. And it gets real tight in the greenhouse every winter."

Warm-weather specimens like the Phoenix, kentia and sago palms are gathered just before the first heavy frost in early November, trimmed (roots particularly), potted, then packed into the city's 20-year-old, 6,500-sq.-ft. greenhouse.

It gets very crowded in the city greenhouse through the winter, but the work goes on for the next season.

"The park system here started about 150 years ago and it's been growing ever since," says Ott. "I'm just trying to add something to it."

—Ron Hall

## Bringing golfers back to your course

■ If you're interested in making sure that golfers who visit your course return some day soon, maintenance and design tricks can help guarantee repeat play. According to Laurence A. Hirsh, president of Golf Property Analysts, Harrisburg, Pa., here are some things to look for:

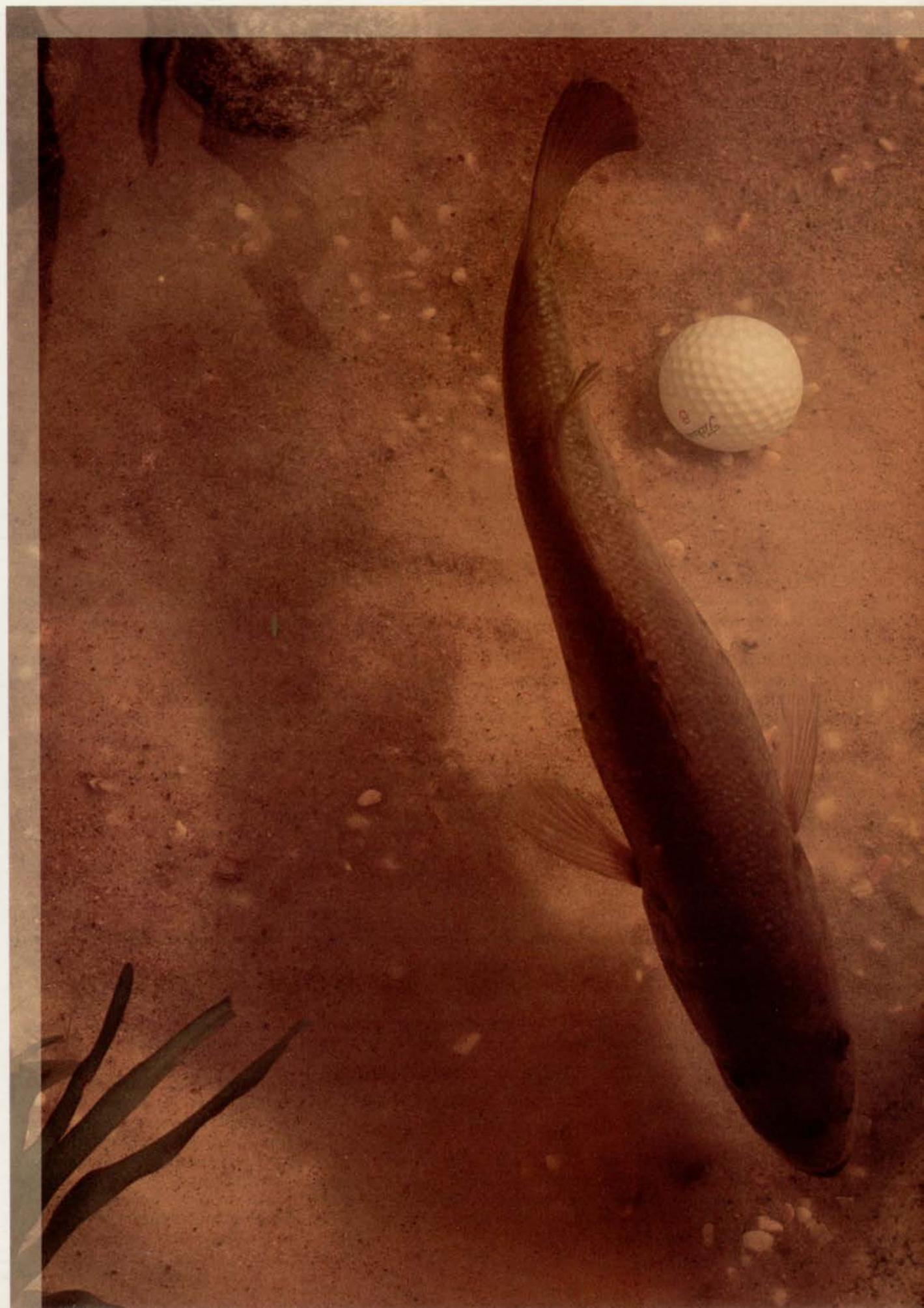
**1) Course conditioning:** are players inclined to return because greens are in great shape? Are fairways wide enough, or too wide? Has the course's appearance been enhanced with mulched beds, orna-

### Maintaining good conditions and integrity of design will keep those greens fees rolling in.

mental grasses and flowers? Do amenities such as tee signs, ball washers, benches and hole liners add to the course's overall image?

**2) Pace of play:** A brisk pace increases the enjoyment of most players. Large tees quicken the game, while providing adequate areas for all levels of players. Hazards should not penalize novice and average golfers too severely or constantly create bottlenecks. Rangers and yard markers also help keep the game moving.

**3) Maintenance:** Avoid difficult maintenance areas or outdated methods. Examine manual versus automatic irrigation, hand-mowed versus triplexed greens,





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And when applied in the spring to control billbugs and *Hyperodes* weevils,  
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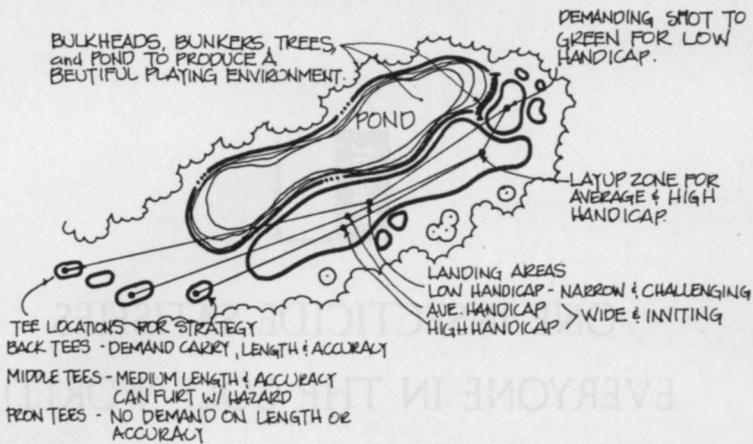
To find out more, contact Miles Inc., Specialty Products,

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Do it for those in golf who actually like landing in trees and  
splashing in water hazards.



**GOLF HOLE WHICH WILL PROVIDE A GOOD EXPERIENCE AND PROMOTE RETURN PLAY TO THE COURSE**



**A golf hole like this one encourages repeat play. It makes use of multiple tees and varied landing areas to test skill and strategy, plus bunkers, trees and a pond for a beautiful playing environment.**

rough maintenance and bunker appearance and consistency to see that you are providing as high quality as the budget will allow.

The key to promoting repeat play is developing a course that provides a challenge, maintains a player's interest and remains in peak condition, adds Tom Clark, former president of the American Society of Golf Course Architects.

"The courses that are able to meet these criteria are usually quite successful in attracting new golfers, developing long-term loyalty and generating strong revenues," Clark says. "They also offer an outstanding drawing card for the community or surrounding development."

When designing a course that encourages repeat play, architects use multiple tees and design greens large enough to

accommodate several pin settings.

"Using multiple tees and pin settings creates variety," says Clark. "The key is to make sure the golfer is not playing the same course every time."

A course in top condition promotes repeat play because golfers can depend on the course to be more playable more often than a course in less-than-peak condition.

"If golfers know a course is in good condition and will generally be open for play, they'll plan to return," says Clark. "For example, a course with good drainage will be open for play more often than a course that drains poorly. This is critical to the many dedicated golfers who want to tee off as soon as the rain stops.

"The architect, superintendent and golfer all share a role in keeping a course in top condition," says Clark.

## Controlling moss, algae in golf course turfgrass

by Gilbert Landry Jr., Ph.D.,  
University of Georgia

■ Moss and algae are found in turf areas because conditions are not good for growing dense healthy turf.

*Mosses* are small plants which have a mass of fine stems. *Algae* are thread-like green plants which form a thin dense green scum over the soil surface. Neither moss nor algae are thought to be parasitic to turfgrasses. The green scum formed by algae is relatively impermeable and once it

dries out, forms a tough black crust.

Factors favoring the growth of algae:

- wet or humid full sun locations;
  - compacted waterlogged fertile soils;
- and

- thin, weak turf.

Factors favoring the growth of moss:

- wet or humid shady conditions;
- acidic, infertile, poorly drained, waterlogged soils;
- excessive thatch; and
- thin, weak turf.

The only permanent control of moss and algae is to correct the conditions which reduce turf growth. The following cultural practices can accomplish this:

**1) Maintain good soil fertility.** Have the soil tested to determine proper lime and fertilizer needs.

**2) Improve drainage.** Soils which stay moist because of poor drainage should be contoured so that water will drain off the area. In some cases, tile drainage may be necessary to correct wet conditions.

**3) Increase light penetration and air circulation.** Trimming back low branched trees may allow for better light penetration and movement. In some cases, removing some of the least desirable trees may be justified. Areas surrounded by buildings and vegetation with limbs close to the ground require considerable effort to provide adequate air circulation and light penetration. Using a shade-tolerant grass such as St. Augustinegrass, zoysiagrass or tall fescue will help. However, if direct sunlight does not reach the ground during the day, a groundcover may be more appropriate.

**4) Cultivate compacted soils.** Aeration with a machine that removes plugs of soil will help reduce compaction. Drainage in fine-textured soils can be improved by cultivation and adding large amounts of organic matter and sand.

**5) Avoid excessive irrigation.** Keeping the surface moist will only increase problems.

Moss and algae problems will recur unless growing conditions are improved, even though you might elect to use the following chemicals:

- Copper sulfate: 2 to 3 oz./1,000 sq. ft.
- Hydrated lime: 2 to 3 lbs./1,000 sq. ft.
- Ferrous sulfate (moss): 4 to 7 oz./1,000 sq. ft.
- Ferrous ammonium sulfate (moss): 10 oz./1,000 sq. ft.
- Non-selective herbicide: apply only to spots covered by moss, according to label directions, and reseed or resod the damaged areas.

Once controlled, sodding is the recommended means of establishing turf under heavily-shaded conditions.

—Dr. Gilbert Landry Jr. is in the extension agronomy department at the University of Georgia. He is a former president of the Sports Turf Managers Association.



# **LANDSCAPE MANAGEMENT**

*New Products*  
**'95**

# LANDSCAPE MANAGEMENT

## MONSANTO

The proven weed control performance of Roundup® herbicide is now available in convenient, granular formulation in pre-measured packs that offer fast, easy and accurate mixing. Each packet of Roundup® Dry Pak contains enough herbicide for 1 gallon of finished spray solution and is ideal for use in backpack sprayers for applications around trees, along fence lines, around buildings and next to sidewalks. Roundup Dry Pak comes in boxes of 25 packs, making it convenient to store, transport and ration out to workers. For more info call 1-800-332-3111.

Circle No. 140 on Reader Inquiry Card



## AMERICAN CYANAMID

Pendulum® WDG herbicide eliminates labor intensive hand weeding and can be safely applied over-the-top of over 260 labeled ornamentals for up to 8 months of weed control. PENDULUM keeps weeds from emerging and keeps beds beautiful all season long. And now, it's also labeled for turf! PENDULUM can also be tank mixed with Roundup for bare ground applications.

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## MILES SPECIALTY PRODUCTS

MERIT 75 WSP insecticide is a new broad-spectrum, systemic insecticide that is extremely effective at very low use rates. It offers less risk to applicators, man and the environment. Imidacloprid, the active ingredient in MERIT, delivers superior season-long control of turf and

ornamental insects without the need for repeated applications.  
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## MILLCREEK

The Millcreek Topdresser / Spreader provides landscapers and grounds managers with a valuable production tool for numerous landscaping functions, including: topdressing athletic fields with sand-peat mixes, application of compost to landscaped areas and fields, building compost piles with grass clippings, leaves and wood chips, dispersal of grass clippings as a disposal alternative, application of de-icing materials on paved areas, spreading baseball infield mix, mulching large area planting beds, large area lime application, general bulk materials hauling and unloading functions and more.

Circle No. 145 on Reader Inquiry Card



## LOFTS

Crenshaw Creeping Bentgrass was formally introduced this year by Lofts Seed. It was developed at Texas A&M University where it was known as SYN 3-88. The research project was supported by the USGA and Bentgrass Research, Inc.

Crenshaw displays excellent heat resistance. It produces a bright green, dense, upright turf with less grain. Limited supplies will be available with the 1994 harvest.

Circle No. 142 on Reader Inquiry Card



## KUBOTA

The GF1800 front mower delivers a constant driving force and smooth power transfer to the wheels, even during sharp turns. The GF1800 4WD features an 8.4-mph maximum forward traveling speed and a 4.1-mph maximum reverse speed.

The GF1800 offers a choice of three shaft-driven, off-set mowers: a 48-inch mulching rear-discharge mower, 54-inch side-discharge mower or 60-inch side-discharge mower.

Circle No. 143 on Reader Inquiry Card



## WALKER MANUFACTURING

Walker introduces larger area mowing capability with a 62" side discharge deck. This is the largest deck offered for the mid-size Walker Tractor, fitting on either Model D (16.5-HP diesel) or Model T (20-HP gasoline). The deck is specifically designed for mowing rough areas as well as fine turf, using belt driven blades and reinforced deck housing to handle rough conditions. Also new for '94 is a Power Dump Option for the grass catcher.

Circle No. 146 on Reader Inquiry Card



# LANDSCAPE MANAGEMENT



## LESCO

Lesco's LCR-7400 commercial rotary mower finds steep hills or wet conditions no problem. The LCR-7400 features automatic or full-time four-wheel drive, powered by a proven and reliable Perkins 27 HP diesel and has two-speed transmission with differential lock. Independent turn-assist brakes allow tight radius turns with minimal turf damage. Its high-lift deck easily clears curbs and simplifies transport. Its 60- or 72-inch deck flips vertically, making it easy to service. Contact your LESCO Sales Rep or call (800) 321-5325 (in Cleveland, 333-9250).

Circle No. 147 on Reader Inquiry Card



## MELROE

The capability of utilizing several different attachments allows Bobcat® skid-steer loaders to handle a wide angle of snow-removal jobs. Choose a bucket for scooping and loading snow, an

angle blade for pushing snow several inches deep, an angle broom for sweeping a few inches of snow or a snowblower for clearing the real deep white stuff.

The loader's pivot turnability and 4-wheel drive traction make the machine great for snow removal. With its narrow width and good operator visibility, the Bobcat loader keeps lawns, shrubs, trees and fences safe from damage often caused by larger machines.

Circle No. 148 on Reader Inquiry Card

## THE GRASSHOPPER COMPANY

Grasshopper's new combo mulching deck also collects or side discharges. The new Grasshopper Quick-D-Tatch® Combo mulching Deck™, available for all Grasshopper outfront zero-radius mowers, switches from mulching to side discharge to collection using the Quick-D-Tatch Vac® grasscatching system on the 44", 48" and 61" decks. The 72" deck mulches or side discharges. A new

Quick-D-Tatch feature lets the operator change decks and attachments faster than ever before. Circle No. 149 on Reader Inquiry Card



## TORO

The Toro Company announced that it has added three-wheel drive to the industry's leading greens mower to create the new Greensmaster 3100-3WD model. The popular, riding greens mower now has broader applications with the ability to reach and mow the most challenging greens terrain improving playability and after-cut appearance throughout the golf course. Features include Toro's Turf Guardian® Leak Detector which prevents major turf damage by detecting small hydraulic oil leaks.

Circle No. 153 on Reader Inquiry Card

## JOHN DEERE

The new John Deere 220 Greens Mower features a new operator-presence safety system, smooth, aluminum traction rolls, loop-style handle bars, a more powerful engine, 11-bladed reel, machine-grooved front roller, and easier-to-reach controls. For the name of your nearest

distributor, or free literature, call (800) 537-8233.

Circle No. 150 on Reader Inquiry Card



Circle No. 151 on Reader Inquiry Card

## EXCEL

Fine grooming of large maintained areas requires the extra wide cut of the Hustler Range Wing™ attachment. With over 12 feet of efficient cutting in a single pass, you can mow as much as 60 acres in an eight-hour workday. You save time, labor, and money when you put a Hustler Range Wing to work!

## SPRAYING SYSTEMS, CO.

Announces a spray tip for custom applicators that combines the precision and uniformity of flat fan nozzles with the clog-resistant, wide-angle pattern of flooding nozzles. The patented Quick Turbo FloodJet® self-aligning spray nozzle, patterned after the popular Turbo FloodJet tip used by farmers, is now available in an array of sizes for custom applicators.

Quick Turbo FloodJet nozzles feature a molded coupling that makes for quick, easy nozzle changes and automatic spray pattern alignment with any quick-connect coupler and are available in standard sizes from 1.5 gal. per minute up to 12.0 gal. per minute.

Circle No. 152 on Reader Inquiry Card

## Turbo FloodJet



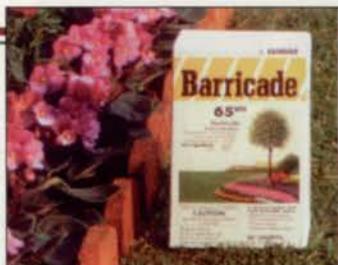
- Very uniform coverage along boom
- Pre-orifice design produces large droplets to reduce drift
- Nozzle spacing—20 inches
- Spraying pressure—10-40 psi

# LANDSCAPE MANAGEMENT

## SANDOZ AGRO, INC.

Sandoz Agro's Barricade® gives turf managers and landscapers season-long control of the most weeds of any leading pre-emergence herbicide — at rates much lower than other products. Available in water-soluble packets for sprayable applications, and in dry granulated fertilizer formulations, Barricade effectively controls weeds on turf and landscape ornamentals — with no staining concerns.

Circle No. 154 on Reader Inquiry Card



## TERRA®

Terra Thaloniil 90DF, Thaloniil 90DF WSP and Thaloniil 4L are proven, chlorothaloniil fungicides that fight even the toughest turf and ornamental plant diseases. In fact, major university tests prove that Thaloniil meets or beats the competition when comparing Dollar Spot and Brown Patch control. Ask for Thaloniil from your nearest Terra product representative.

Circle No. 155 on Reader Inquiry Card



## CIBA

Primo, a turf management tool from Ciba, reduces turf growth by 50% for up to four weeks. Labeled for warm-and cool-season grasses, Primo saves you time—mowing is faster and / or less frequent. Primo reduces clippings, makes grass denser and a darker color green. For more information, contact your local distributor.

Circle No. 156 on Reader Inquiry Card

## AGREVO

Finale is a broad spectrum nonselective herbicide that provides effective control of broadleaves, grasses, sedges, and woody species. Finale's unique Transmodal Action (TMA) provides both speed of activity and mode of action. Unlike burndown or slow acting herbicides, Finale's TMA provides fast, but long-lasting weed control.

Circle No. 157 on Reader Inquiry Card



## TORO

Whatever the mowing condition, the TORO ProLine Height-of-Cut feature on every ProLine deck adjusts to deliver a greener and healthier-looking lawn. Adjust the height-of-cut on your ProLine deck from two to five inches to get the same great

cut in deep, tall grass on tough terrain as you would expect under normal mowing conditions. Call 1-800-348-2424 for a free ProLine Products Brochure.

Circle No. 158 on Reader Inquiry Card

## DOWELANCO

Announces Dursban Pro insecticide to control chinchbugs, cutworms and a variety of other insects. Dursban Pro, an emulsifiable concentrate, was designed to provide turf and ornamental professionals with the same proven performance they've come to expect from Dursban in a new low-odor formulation.

Dursban Pro will replace other Dursban formulations including Dursban 2E, Dursban 4E and Dursban Turf Insecticide. Compared to previous Dursban formulations, Dursban Pro has: low odor, two pounds of active ingredient Chlorpyrifos per gal., an expanded label, and a "Caution" label. For information call 1-800-352-6776.

Circle No. 159 on Reader Inquiry Card



## THE ANDERSONS

Barricade® Plus fertilizer has "dial In" length of control. The active ingredient BARRICADE, offers turf managers the longest pre-emergence herbicide residual, with up to eight months of control. Based on applied rates, applicators can determine the length of control through a single application (follow Andersons recommendations by region).

Circle No. 160 on Reader Inquiry Card

## Plant growth regulators in turfgrass management



Some PGRs may cause discoloration of turf. The trade-off is in reduced labor costs. Spring fertilization can help improve color, but may also reduce PGR efficacy.

by Wayne Bingham, Ph. D.,  
Virginia Tech

■ The best plant growth regulator will reduce mowing requirements, improve turfgrass density, inhibit seedhead development, improve color and more.

The practical uses of turfgrass require that topgrowth be kept within specific heights, which may vary with the turf's purpose and function. So mowing management must take into account the detrimental effects upon the growth and long range health of the root system, as mowing reduces leaf area and the carbohydrate production necessary for ade-

quate root growth.

A general rule-of-thumb in mowing management is "mow frequently enough so as to remove no more than one-third of the foliage at any one time."

Cool-season turfgrasses have a peak period of shoot growth associated with spring green-up. Applying readily-available nitrogen at this time can stimulate excessive shoot growth.

Fall fertilization tends to improve root growth and does not stimulate this spring flush of leaf growth with excessive carbohydrate use.

However, a slow-release fertilizer may be needed in spring and is more acceptable

than soluble forms. Earlier spring green-up without lush peak growth occurs with fall fertilization.

**Inhibitors and suppressors**—Plant growth regulators (PGRs) are used to reduce excess shoot growth in spring while conserving energy in the crowns and roots of cool-season turfgrasses. After the initial effects, turfgrasses become darker green and generally contain high amounts of protein in the leaves.

Type I PGRs inhibit or suppress turfgrass growth. Inhibiting compounds are foliarly absorbed and require a period for uptake before irrigation or rainfall.

*continued on page 26*

Examples include maleic hydrazide (Slo-Gro) and mefluidide (Embark). These compounds inhibit cell division, meristem development and seedhead elongation.

Suppressor compounds are absorbed through crowns and roots. They work best with some rainfall or irrigation after application. Amidochlor (Limit) is root absorbed and requires rainfall or irrigation to achieve maximum suppression. The crown meristems appear to be the main site of action. Seedhead reduction will occur only if the product is applied before seedhead elongation. Root growth may continue while shoots are suppressed.

Inhibiting compounds reduce shoot growth within one week and are effective for 4 to 10 weeks. The number of mowings required are generally reduced during this time.

PGR injury symptoms may include foliar discoloration, reduced density and initially low quality, which appears to result from inadequate growth to replace senescing plant parts.

Spring fertilization, especially with nitrogen, may enhance the quality of turf

through reduced injury. However, in many instances the PGR effectiveness is also reduced.

Turfgrass thinning caused by PGRs may also be reversed by nitrogen application at the time of treatment. Even though fall fertilization is preferred for cool-season turfgrasses to reduce the peak shoot growth in spring, the effectiveness of PGRs may also be reduced.

**Weed control and PGRs**—Turfgrass density is generally low after inhibitor PGRs have been applied, and turfgrass is prone to weed invasion.

Annual grasses such as crabgrass, foxtail and goosegrass are found to invade and become very competitive in the thin turfgrass. Broadleaf weeds are quick to emerge and/or spread into turfgrasses following inhibitor Type I PGRs. In many cases, management programs include weed control treatments along with the PGRs for maintenance of improved turfgrass quality.

**Growth retardants**—Growth retardants reduce the height of plants by inhibiting biosynthesis of gibberellins which regulate cell enlargement in

plants. Growth retardants reduce the extent of cell elongation, resulting in the control of canopy height. They also inhibit subapical meristems rather than apical meristems as described for Type I PGRs.

Examples of Type II growth retardants currently in use in turfgrass management programs are flurprimidol (Cutless), paclobutrazol (Scotts Fertilizer with TGR) and trinexapac (Primo). These PGRs do not inhibit seedhead development to the extent obtained with Type I PGRs. Flurprimidol and paclobutrazol are absorbed by turfgrasses through roots and crowns while trinexapac is absorbed through the foliage. Biosynthesis of gibberellin is inhibited early in the synthesis cycle by flurprimidol and paclobutrazol and late in the cycle by trinexapac.

Although trinexapac is rapidly absorbed, there are some concerns about rainfall immediately after application.

Although not widely accepted, some research indicates that a small amount of mefluidide may be mixed with growth retardants to obtain improved seedhead control.

Stem height is reduced by Type II PGRs and seedheads of bluegrass and annual bluegrass may remain below the clipping height. In many cases, a trim-type mowing is used a week or so after application to improve quality by removing bluegrass and tall fescue seedheads.

The effects of Type I growth retardants can be reversed by gibberellic acid application. Nitrogen fertilization and gibberellic acid reverse the retardant effects and improve turfgrass quality and appearance. However, mowing is again required.

Increased tillering has generally improved the turfgrass density after using a growth retardant. Weed invasion is not as pronounced following the application of growth retardants. Growth retardants are used in golf course fairways to reduce mowing requirements, annual bluegrass encroachment and spring and summer color.

Basically, PGRs regulate turfgrass growth by inhibiting or suppressing cell division in apical meristems and crowns (Type I) and by interfering with gibberellin biosynthesis (Type II). Inhibitor PGRs reduce growth by interfering with cell division and reduced seedhead emergence.

—Dr. Bingham is a professor of weed science at Virginia Tech, and an extension weed scientist for turfgrass and aquatics.



After spring green-up, three sequential applications of trinexapac at four-week intervals resulted in the dark green Kentucky bluegrass fairway. Light green bluegrass was apparent beyond the treated area.



**IF THIS IS WHAT YOU THINK PRIMO DOES TO YOUR GRASS,**



**IT'S TIME WE SET YOU IN THE RIGHT DIRECTION.**

Lots of people know that Primo® regulates the growth of grass. But not as many understand how.

Primo doesn't stunt turf. Instead, it redirects the grass's growth.

Unlike other growth regulators, which actually stop cell division, grass treated with Primo will still be actively growing, producing the same amount

of new cells. Only now the cells will be smaller. Smaller cells mean a more compact plant.

Nutrients that otherwise would be needed above ground are now channeled into the roots, giving you a thicker stand, and up to 25% more root mass. So the grass can more efficiently take up water and nutrients.

And Primo is foliar-absorbed, so there's less risk of inconsistent uptake.

The result? The easiest-to-manage, best-looking turf you can imagine.

It's easy to see why all roads lead to Primo.



# HOT TOPICS

## Public wants pesticides used responsibly

**WASHINGTON**—There's no question in the minds of consumers about the benefits of specialty pesticides like those used on golf courses and home lawns. But there are concerns about their responsible use, according to results of a survey commissioned by RISE (Responsible Industry for a Sound Environment).

The survey, undertaken by Charlton Research of San Francisco, focused on attitudes of the general public rather than consumers who specifically purchase and use pesticides.

Eight focus groups were held in Pittsburgh, Seattle, Milwaukee and Birmingham. Each group was composed of 9-10 adults of mixed age, gender, area of residence and location.

Focus group information was combined with a national telephone survey of 1,000 adults.

"Our research shows that we need to help the public better understand several issues relative to the value of pesticides, as well as their responsible use," says Alan James, RISE's executive director.

"As the official voice of the pesticide industry, RISE will work with audiences (ranging) from government and industry influentials to the media and consumers, to increase understanding of the value of pesticides as pest management tools which help enhance the quality of life and the environment when used responsibly."

Several of RISE's planned initiatives are educating consumers on responsible pesticide use, promoting the benefits of pesticides, and increasing awareness about the training certified applicators must undergo.

### SURVEY REVELATIONS

- Many Americans are willing to balance their personal and environmental health and safety concerns with the perceived benefits of pesticides.
- Respondents think pesticides are used more by other people in their local government than by themselves or their neighborhood circles.
- Most people use some form of pesticides.
  - 64% use pesticides to control household insects/rodents
  - 48% use pesticides to control garden insects
  - 38% use pesticides on their home lawns
  - 10% currently use a lawn care company
- Controlling termites, insects and bacteria with pesticides is seen as an important personal health and safety protection issue. It is more important than having a beautiful lawn or the public cost of highway maintenance. *If a personal protection issue is at stake, a large majority of people will override their initial concerns about pesticides.*
- People strongly believe pesticides are safe when used as directed. But they are not certain if their neighbors are using pesticides safely. They also believe that professional applicators use stronger pesticides, but are trained to apply them safely.
- Only about 50% believe pesticides made available to the public are thoroughly tested.
- The most trusted source of pesticide information is from independent local government agencies like extension agents, poison control centers and health departments.
- "Maintaining public health" was the reason given by almost 80% of the respondents for applying pesticides to control pests and weeds in public areas.

### ELSEWHERE

**Sales up most in Eastern U.S., page 30**

**Scag writes thanks to LM, page 30**

**Olympic champ is featured speaker, page 30**

**Literature and industry events, page 32**

# PAYBACK TIME

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THINK OF IT AS A  
CUSTOMER APPRECIATION  
DAY THAT LASTS  
FIVE MONTHS.

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Be sure to check the January '95 issue.



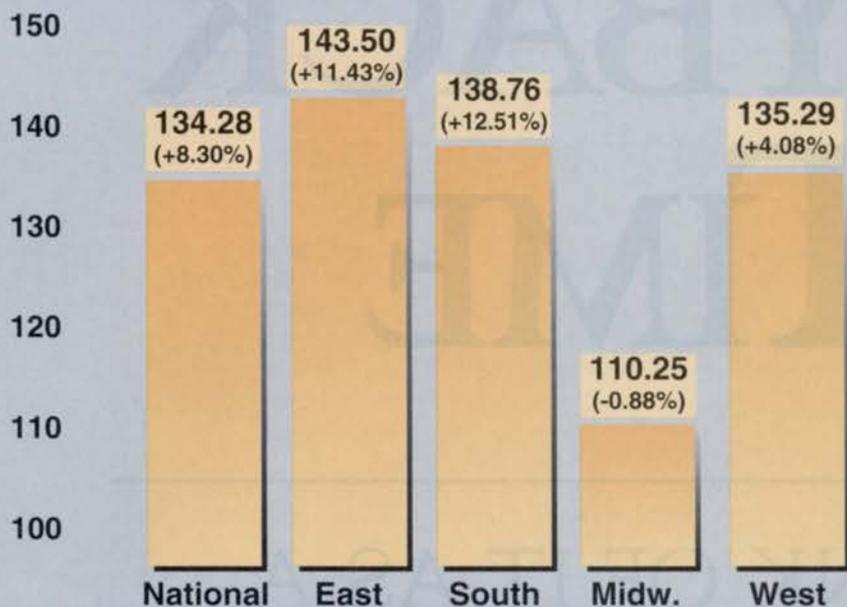
**CYANAMID**

Agricultural Products Division  
Specialty Products Department  
Wayne, NJ 07470

©1994

## SERVICE SALES IN THE U.S.

Second quarter, 1994 (First quarter 1992=100.0)



## Small business sales and profits healthy last spring

**ATHENS, Ga.**—Small businesses across the U.S. enjoyed a healthy surge in sales and profits during the second quarter (April-June) of this year, according to the most recent quarterly survey conducted by Padgett Business Services USA here.

Traditionally, second quarter numbers are the strongest for small business, and 1994 was no exception, the report notes. Overall sales were up 13.2 percent and profits showed a healthy 33 percent climb over first quarter numbers.

"Second quarter numbers generally tell us how the rest of the year will go," says Padgett chairman Dan Sautner. "This year looks better than 1993 or 1992 in this respect, but—more importantly—expenses are down and under control."

Small businesses are stretching their profits by keeping expenses down, the survey says. Reduced spending—up only 4.4 percent over last year—indicates that small business owners are watching their bottom line very closely.

The entire study is published as "Small Business—The Engine of Our Economy" by Padgett. Highlights:

- A 4.4% wage increase shows small

business is producing more jobs than other economic sectors.

- Inventories are up 12.7%.
- Nearly half of those polled believe now is not a good time to start a business.
- 72% said they don't think small business should be required to contribute any portion of the health care tab that was proposed during the survey's time frame.
- Not one person believes the Clinton administration has helped the situation for small business.
- The Midwest saw the greatest sales growth in the country, up 8% from the same period last year.
- The East didn't reach expected sales levels, posting the greatest increase in inventory over last year at 17.3%.
- The South showed the highest wage increase in the country at 8.8%, indicating confidence in the economy.
- The West was the only region in the country to experience a decrease in sales over last quarter.

For more information on the report, contact Padgett Business Services USA, 160 Hawthorne Park, Athens, GA 30606; (706) 548-1040.

## HOT STUFF

☞ **DANE SCAG** was happy with LM reader ratings of his mowers (LM, October). In a letter to LM, he wrote:

"I am flattered and pleased to see that my years of personal dedicated efforts in trying to please the commercial landscaper has been recognized and accepted."

"Until a few months ago, I was enjoying my third retirement. I now have a drafting pencil in hand and shortly, with the support of engineers and a major manufacturer, will be producing commercial lawn mowers with innovations exceeding my award-winning zero turn walk-behind.

"This is an exciting and challenging industry. I truly look forward to renewing the relationship with my many friends. And look forward to the opportunity to offer them something new and simply better than available today."

☞ **WINNERS OF CD PLAYERS** at the Green Industry Expo were **Gina Neher**, manager of Lawn Pride, Inc., Indianapolis, and **Bobby Snook**, owner of Snook Lawn & Landscape, Oologah, Okla.

Each of the attendees won a Radio Shack Tandy portable compact disc player from *LANDSCAPE MANAGEMENT* magazine. LM held two drawings—one each day—during the trade show, held in St. Louis, Nov. 13-17. Two hundred show visitors entered the contest.

Neher and Snook both enjoyed the show as well as winning our drawing. "It was the best I attended," said Snook. "And the outdoor equipment demonstrations were great." This was Neher's first GIE show. She told us she found the seminars to be helpful. "Anyone who attended had something to see," said Neher.

☞ **TESTS GIVEN** by the Outdoor Power Equipment Technician Certification Testing program now number more than 2,000, according to **Virgil Russell**, director of certification for the Service Dealers Association.

"The addition of testing on compact diesel engines has created considerable interest in the commercial cutter and golf course industries," says Russell. For more information: OPE Certification, 1946 IH 35, Suite 100-A, Austin, TX 78704; (512) 443-7999 or fax (512) 443-7997.



Ohhh...you

# ANIMAL!

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Circle No. 104 on Reader Inquiry Card



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# INFO CENTER

## Useful literature and videos for the green industry

**HIRE & FIRE WITHOUT FEAR...***Rightful Termination: Defensive Strategies for Hiring and Firing in the Lawsuit-Happy 90s* was written to help employers and business owners regain control of their businesses with proven techniques for hiring and firing. The book is written by James Walsh. To order, contact Nolo Press, at (800) 992-6656.

**GOLF & THE ENVIRONMENT...**RGF Environmental Systems, Inc. is offering a free booklet entitled *Environmental Guidelines for Golf Course Maintenance Facilities*. The booklet is offered as a public service to golf course superintendents. It includes information on how to reduce the risk of contaminants entering the environment: EPA laws, maintenance shop house-keeping, mix & load operations, storm water run-off, managing hazardous waste on site and pollution solutions. Contact RGF at 3875 Fiscal Court, West Palm Beach, FL 33404; (800) 842-7771.

**ARCHITECT LISTING...**The American

Society of Golf Course Architects' 1994-95 membership list features all the names, addresses, telephone and facsimile numbers of the 122 members. To receive a free copy of the list, send a stamped, self-addressed business-size envelope to The American Society of Golf Course Architects, 221 N. LaSalle St., Chicago, IL 60601.

**KNOW THE PLAYERS...**The Associated Landscape Contractors of America (ALCA) has published its 1994 directory, *Who's Who in Landscape Contracting*. The directory is a reference source for landscape contractors, landscape designers, building owners and managers, facilities managers and more. It contains a complete listing of ALCA members and other industry-related contacts. For a copy, contact ALCA, 12200 Sunrise Valley Dr., Suite 150, Reston, VA 22091; (703) 620-6363.

**IPM GUIDE TO PESTS...**The University of California has published *Pests of Landscape Trees and Shrubs*. Included is

emphasis on IPM methods of pest controls, hundreds of illustrations, and 50 pages of tables. Cost is \$32. Contact ANR Publications, 6701 San Pablo Ave., Oakland, CA 94608-1239; (510) 642-2431.

**SOIL & PLANT ANALYSIS...***The Handbook on Reference Methods for Soil Analysis* is a laboratory technique manual for the more common soil testing procedures. The latest edition includes several new procedures and new sections on nitrate and heavy metals. Cost is \$49.95, and is available from St. Lucie Press, 100 E. Linton Blvd., Suite 403B, Delray Beach, FL 33483; (407) 274-9906.

**IRRIGATION MANUAL...***Troubleshooting Irrigation Control Systems*, by irrigation consultant Bill Derryberry, covers electricity, meters and valve operation, simple electricity, how meters work and how they are used to diagnose typical problems. Contact Irrigation Publishers, 5818 East Oak St., Scottsdale, AZ 85257; (602) 423-0542.

## GREEN INDUSTRY EVENTS

### What's going on in the industry

#### JANUARY

**2-5: Northeastern Weed Science Society Annual Meeting**, Boston Marriott Copley Place. Phone: Jeffrey Derr, (804) 363-3912.

**5: GrowerExpo**, Business Conference '95, Sheraton Chicago Hotel. Phone: (800) 456-5380.

**5: Cook College/Rutgers Cooperative Extension Short Course: Pest Management of Landscape Turf**. Phone: (908) 932-9271.

**9-11: Nebraska Turfgrass Foundation Annual Conference**, Holiday Inn, Omaha, Nebraska. Phone: (402) 463-5418.

**9-12: Eastern Regional Nurserymen's Association Trade Show**, Concord Hotel, Kiamesha Lake, N.Y. Contact: ERNA, P.O. Box 117, Vernon, CT 06066.

**10-12: Eastern Pennsylvania Turf Conference & Trade Show**, Valley Forge Convention Center, King of Prussia, Pa. Phone: Pennsylvania Turf Council at (814) 863-3475 or Scott Guiser at (215) 345-3283.

**11: Northern California Turf & Landscape Council**, Turf & Landscape Expo 1995, Santa Clara Convention Center. Phone: (510) 490-6282.

**12: Cook College/Rutgers Cooperative Extension Short Course: Pest Management of Ornamental Landscape Plants**. Phone: (908) 932-9271.

**16: University of Massachusetts Cooperative Extension System Green School**, Sturbridge Host Hotel & Conference Center. Contact: UMass Cooperative Extension System, French hall, Box 32910, Amherst, Mass. 01003.

**17-18: Nevada Landscape Association Conference & Trade Show**, Reno-Sparks Convention Center. Phone: Brian Dean, (702) 852-6349.

**17-19: Michigan Turfgrass Conference**, Holiday Inn South Convention Center, Lansing, Mich. Phone: Kay Patrick, (517) 321-1650.

**18: Professional Turf and Landscape Conference**, Westchester County Center, White Plains, N.Y. Phone: Carol Mueller, (914) 636-2875.

**19: Tropical Plant Industry Exhibition**, Broward County (Fla.) Convention Center. Phone: (407) 345-8137.

**22-25: Associated Landscape Contractors of America Executive Forum**, Disney Grand Floridian Beach Resort, Orlando, Fla. Phone: (800) 395-2522.

**23-24: National Golf Course Owners Association Trade Show**, Orlando, Fla. Phone: (900) 933-4262.

**23-25: Ohio State University Nursery Short Course**, Greater Columbus Convention Center, Columbus, Ohio. Phone: Holly Bartholomew, (614) 292-7691.

**23-25: Iowa Sports Turf Managers Convention**, Des Moines. Contact: Gary Peterson, (515) 791-0765.

**23-26: Professional Horticulture Conference of Virginia**, Virginia Beach, Va. Phone: Polly Carden, (804) 523-4734.

**25-27: Utah Green Industry Conference & Trade Show**, Salt Lake City. Phone: Stephen Linde, (801) 797-2255.

**26: Sacramento Valley Landscape & Nursery Expo 1995**, Sacramento Community Convention Center. Phone: Margo Jonsson, (916) 442-4470.

**27-28: Professional Landscape Service Association Trade Show & Equipment Expo**, Greater Jacksonville Fairgrounds, Jacksonville, Fl. Phone: Kirk Rust, (904) 778-9632.

**31-Feb. 2: Professional Lawn Care Association of Mid-America Convention**, Kansas City, Mo. Phone: (816) 561-5323.

# JOB TALK

## 'Living' wall a nice landscaping niche

**Milwaukee's Kuehne Co. beautifies unique traffic barrier with landscape plants.**

By Ron Hall, senior editor

■ The *Milwaukee Journal* described the unusual landscape project along I-94 as a huge "Chia Pet." That description of a "living" highway noise barrier is pretty accurate.

The job of constructing this barrier, and then of making it both green and flowering, belongs to the Kuehne Co. (formerly the Kuehne Landscape Co.), Oak Creek. The project is unique in the Midwest, although a similar noise barrier was built in New Jersey. Another in Colorado should be done next spring.

This fall, Kuehne workers built the 515-foot-long soil wall out of huge, notched, A-shaped plastic sections. Beams were placed in



Kuehne Company built this 22-foot-high traffic noise barrier using triangular-shaped frames of recycled plastic called Recy-walls by Sanders Enterprises Inc.



Each of 5,300 built-in flower boxes is hand planted: shade-loving plants on the north, an assortment of shrubs and flowering plants facing the freeway.

the notches to give the structure strength. The wall stands 22 feet tall and is 7½ feet wide at its base, tapering to 18 inches across at the top. They filled it with earth and top soil.

Then they beautified its 5,318 built-in, terraced flower boxes with more than 14,000 plants. They planted the north side, which faces a neighborhood, with shade-loving hostas. The south side along I-94 contains a striking assortment of creeping evergreens, small deciduous shrubs, prairie plants, groundcovers and wildflowers.

Kuehne will maintain the plants for the next two years, replacing those that die. The company, whose main offices are nearby, will water the plants from water tank trucks. After two years, the plants—a vegetative support for the wall—are on their own.

How do you bid such a job?

"You estimate your labor," Kuehne President Charles Johanneck tells *LANDSCAPE MANAGEMENT*. "You know what the price of your materials are. That's a given. Then you take an educated guess, based on past experiences on others jobs, and you figure it from there."

Johanneck started with the Kuehne Co. in 1968. He and two other veteran employees, Andy Nalewajko and Charles "Chuck" Wolter, bought the company in 1992. Actually, it was known as the Kuehne Landscape Co. then. "We took the word 'landscape' out. It didn't accurately describe all that we do any more," he says.

The company does a lot of work for the Wisconsin Department of Transportation, but it takes on other large jobs too. It's built several soccer fields and, more recently, several outdoor volleyball courts too.

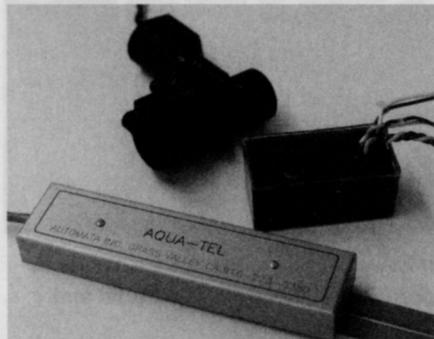
"You have to be ready to accept new ideas, otherwise you're left by the wayside," says Johanneck. "It's hardly ever dull around here because you never know what you're going to be involved with next."

# PRODUCT REVIEW

## Soil moisture sensor helps plan irrigation needs at low cost

The Horizon irrigation controller from Automata is based on soil moisture measurements.

Irrigation takes place on demand, in all types of soils at all moisture levels.



Horizon uses the Aqua-Tel soil moisture sensor for monitoring soil moisture content. It has an integral set point adjust. When the moisture level drops below the set point, it closes a relay which allows irrigation to take place.

The relay may be used to directly energize a valve to irrigate on demand, or it may be put in series with a timer or controller to limit the time of day an irrigation may take place.

**Circle No. 191 on Reader Inquiry Card**

## Cutting head adapts to existing equipment for heavy brush

Tuff Kutt is a brush cutting head that doesn't dull or snag, is versatile, and can handle heavy duty projects.

East Hill Manufacturing of Rutland, Ver., says Tuff Kutt blades do not dull, and reduce clearing time by half.

The high-tech alloy tool cuts along stone walls, boulders and rocks. Brush and stumps can be cut flush to the ground or recessed.

The Tuff Kutt works on all types of vegetation, from grass to small trees.

Tuff Kutt fits on to the head of most brands of brush cutters, 25cc or larger.

Three blade types are available. Each Tuff-Kutt is equipped with a #2 set of general purpose blades. The #1 set is designed for cutting larger diameter saplings (up to 4 inches in diameter). The #3 blade is used to clear light-to-heavy brush.

**Circle No. 192 on Reader Inquiry Card**

## Tackifier applicator needs no hydroseeding gear

The new TA-150 tackifier applicator from Reinco can be used with a garden hose to apply tackifier to hay or straw.

The TA-150 sprays virtually any powdered or liquid tackifier up to 180 feet from the machine to stabilize soils, hold seed in place and bring remote plantings into easy reach for watering.

With a 150-gallon tank, the portable TA-150 provides the maximum capacity allowed by law for transport and operation with most common half-ton pickups.

**Circle No. 193 on Reader Inquiry Card**



## Boring attachment installs irrigation and sprinklers

A new boring attachment from McLaughlin attaches to skid-steer loaders.

The M-4500 is designed for use by landscape and general contractors for irrigation pipes, sprinkler systems, CATV and utility lines under landscape areas, lawns, sidewalks and other areas where surface restoration is time-consuming and costly.

The tool slides into a mounting plate attached to the inside surface of the skid-steer bucket and is pinned into place. Hydraulic lines with quick-disconnects from the loader are attached.

**Circle No. 194 on Reader Inquiry Card**

## Products improve water, pesticide movement in soil

New from United Horticultural Supply comes Turfgo LI 700, a premium penetrating surfactant that maximizes pesticide efficacy in turf; and Turf Wetter, a water wetting surfactant.

According to UHS, Turfgo LI drives control products through a plant's natural protective barriers. This, says the company, results in better and more consistent pest control.

Turfgo LI can be used as a wetting agent to give uniform coverage of a plant's surface area. It is also effective as a pH adjuster for those products that are sensitive to high pH water.

It adjusts the pH level of alkaline water to prevent pesticide loss and improve compatibility.

The Turf Wetter enhances water flow through the small pores of finer textured soil, resulting in deeper water penetration and better root development.

**Circle No. 195 on Reader Inquiry Card**

## Electric trimmer comes in three sturdy blade lengths



Little Wonder electric hedge trimmers are available in 16- 24- and 30-inch blade lengths and are guaranteed to cut any growth up to 1/2 inch thick.

The double-insulated motor is sealed in a metal gear box and is surrounded by high impact material to increase the durability of the product.

The double-reciprocating blades are activated by dual-action switches located in each handle to automatically stop when either handle is released.

**Circle No. 196 on Reader Inquiry Card**

# SHOWCASE

## PRODUCT REVIEW

### Walk-along trencher available with two engine options, Honda or Kohler

The Model 1220 walk-along trencher from Ditch Witch comes with two 12-hp engine options: a Honda GX390 and the Kohler Command CH12.5.

Both engines are quiet, fuel-efficient and meet all current California emission standards.

The 1220's standard outboard bearing support and longer head shaft help make the 1220's digging drive assembly more rugged and trouble-free. The trencher also features a new ground drive gearbox that's integrated with the engine, to eliminate mounting and coupling parts.

The gearbox features larger gears, O-ring cover seals and increased capacity.

There is no drive chain to adjust and there are only three grease service points, for easy routine maintenance.

**Circle No. 197 on Reader Inquiry Card**

### Software tells which regs apply to your inventory

Gaia Systems of Menlo Park, Calif. now has a PC-based ChemCheck computer software program. The program lets environmental, health, or safety professionals to determine which federal and state environmental regulations may apply to their own hazardous materials inventories.

ChemCheck 2.0 cross-references user-created chemical inventories to more than 10,000 hazardous chemicals listed in federal and state environmental regulations. The user can also select a particular regulation to view the list of chemicals covered by that regulation.

In the new release, the number of chemicals has been expanded and the number of regulatory lists increased from 30 to 48. The program now includes parameters for regulations—exposure limits, reportable quantities, threshold planning quantities and federal waste codes.

**Circle No. 198 on Reader Inquiry Card**

### Root growth regulator improves root quality, reduces shock

Spin Out root growth regulator from

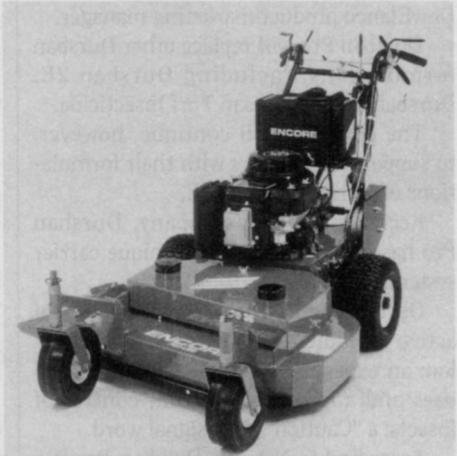
### Walk-behind has 14 hp engine, high lift blades

Encore's Eliminator walk-behind mower 36- and 48-inch models with gear-drive and 14 hp Kawasaki engines.

These mowers offer many standard features:

- five-speed transmission with reverse assist;
- heavy-duty reinforced steel decks and high-lift blades;
- matching dual V-belts and taper lock pulleys;
- yoke-style casters; six-inch brake drums; parking brake.

**Circle No. 199 on Reader Inquiry Card**



Griffing Industries of Houston, Texas can be used by wholesale and retail nurseries to produce a higher-quality nursery stock, reducing risk of plant loss.

Spin Out is a liquid formulation applied to the inside of plastic nursery containers. As the plant grows, Spin Out prevents root spiraling and matting, which can cause contain-grown plants to become root-bound, increasing the risk of plant death once they are transplanted.

Plants grown in pots treated with Spin Out begin growing almost immediately after transplanting because their root systems are healthy, more fibrous and ready to move into "new soil."

This fibrous root system allows the plant to absorb water and nutrients more efficiently and establish themselves in a garden quickly.

**Circle No. 200 on Reader Inquiry Card**

### New boring attachment for landscape sets up quick

A new boring attachment for skid-steer loaders comes from McLaughlin, of Greenville, S.C.

The M-4500 is designed for use by landscape and general contractors to install irrigation pipes, sprinkler systems, CATV and utility lines under landscaped areas, lawns sidewalks and areas where surface restoration is time-consuming and costly.

The M-4500 bores clean, compacted holes from 1¼ inches to 4½ inches in diameter.

**Circle No. 201 on Reader Inquiry Card**

### Mask pesticide odors with wintergreen spray scent

Terra International, Inc. has introduced Riverside Spray Scent W to the green industry.

Spray Scent W features a "wintergreen" scent that can be added to weed and brush sprays to mask objectionable pesticide odors.

Spray Scent W can be used in ditch banks, and around residential and industrial areas. The product is packaged in one-gallon jugs.

Terra recommends 2 to 4 ounces of Spray Scent when used with a water carrier and 8 to 10 ounces per 100 gallons of oil or oil emulsion.

**Circle No. 202 on Reader Inquiry Card**

### Insecticide soon available in a new low-odor formulation

DowElanco Specialty Products announces the introduction of Dursban Pro insecticide to control chinchbugs, cutworms and a variety of other insects. Dursban Pro, an emulsifiable concentrate, was designed to provide turf and ornamental professionals with the same proven performance they've come to expect from Dursban in a new low-odor formulation.

"By using Dursban in a new, state-of-the-art formulation, turf and ornamental professionals can continue to rely on the effectiveness they've come to expect from Dursban and still respond to public desire

# PRODUCT REVIEW

for low odor, says Mark Neterer, DowElanco product marketing manager.

Dursban Pro will replace other Dursban formulations, including Dursban 2E, Dursban 4E and Dursan Turf Insecticide.

The company will continue, however, to support formulators with their formulations of Dursban 2E and 4E.

According to the company, Dursban Pro has low odor due to its unique carrier system.

Other benefits include two pounds of active ingredient—chlorpyrifos—per gallon; an expanded label, allowing for more uses and a broader-spectrum control of insects; a "Caution" label signal word.

According to Neterer, Dursban Pro is a more effective product, but is safe to use near sensitive plants outside the application area. There are also improvements in Department of Transportation compliance,

which makes it easier to transport to the job site.

Dursban Pro is slated to be released in February.

**Circle No. 203 on Reader Inquiry Card**

## New bentgrasses feature better heat tolerance

From E.F. Burlingham & Sons comes Syn92-1 and 92-5, varieties developed at Texas A&M's breeding program in conjunction with the USGA and Bentgrass Research, Inc.

Syn92-1 has a moderately fine leaf texture with very good genetic color. It is anticipated that it will be an excellent performer in golf greens as far as the transition southern zone. The parents' root systems of both varieties were screened for survival at temperatures of 120 degrees

Fahrenheit for heat tolerance.

**Circle No. 204 on Reader Inquiry Card**

## Expanded label broadens herbicide use to 70 plants

The Environmental Protection Agency has approved an expanded label for Pendulum WDG herbicide from American Cyanamid.

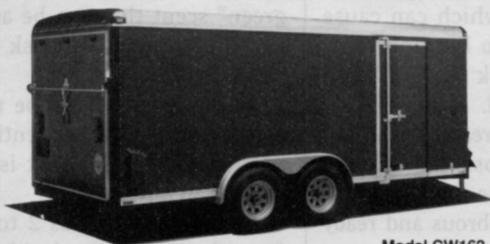
The new label enables landscapers, nursery growers, lawn care operators and golf course superintendents to use the product over the top of an additional 70 species of ornamental plants.

With the new label, Pendulum WDG herbicide may be used to control grasses and broadleaf weeds in more than 260 species of trees, shrubs, flowering beds and ground covers.

**Circle No. 205 on Reader Inquiry Card**

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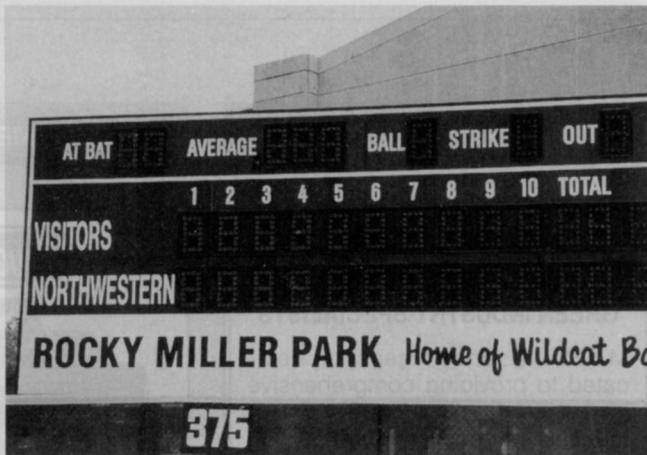
# PRODUCT REVIEW

## Fence guard protects against injury, looks good

Athletic field managers at Northwestern University have installed Fence Guard, by Oly-Ola Recreational Edgings, Villa Park, Ill. on the fence at Well's Baseball Field and Anderson Softball Field.

Fence Guard, a yellow vinyl safety cover, is attached to the top of the chain link fence surrounding the fields. The product protects against possible injury to a player who leaps for a fly ball, and adds to the aesthetics of the field.

Fence Guard is available in three col-



ors—yellow, orange and white—and is easily installed in 8-foot sections.

Circle No. 206 on Reader inquiry Card

## Pipe, cable locator tells placement of buried lines

The new Spot D Tek II Pipe & Cable Locator by McLaughlin pinpoints buried utilities to avoid the often devastating consequences of accidentally cutting through electrical lines, fiber-optic telephone cable, gas and water lines or other existing services.

This microcomputerized detection system takes the guesswork out of locating buried utilities, and even non-metallic PVC pipe with the use of a remote probe. You can quickly determine the precise location of services at depths to 14 feet below the surface, using any of four active detection frequencies. Live power and telecommunication lines are located without the need of a transmitter in any of three passive modes.

Circle No. 207 on Reader inquiry Card



*"PLCAA has amazed me. I belong to two other lawn care associations but PLCAA is the best by a wide margin. In terms of professional development and consumer-oriented information pieces, they are outstanding."*

—Les Stewart,  
Nutri-Lawn

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Phone: 1-800-458-3466  
FAX: (404) 578-6071

Yes! Send me more information on PLCAA.

Name \_\_\_\_\_  
 Title \_\_\_\_\_  
 Company \_\_\_\_\_  
 Address \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
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# MARKET SHOWCASE

For all ads under \$250, payment must be received by the classified closing date. We accept VISA, MASTERCARD and AMERICAN EXPRESS. Credit card orders are accepted by phone. Send ad copy with payment to: Bill Smith, LANDSCAPE MANAGEMENT, 7500 Old Oak Blvd., Cleveland, Ohio 44130, or call (800) 225-4569 ext. 670 outside Ohio; (216) 891-2670 inside Ohio; FAX (216) 826-2865.

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Real Green Computers  
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New York Botanical Garden offers a two year program of practical field work and academic classes in BOTANY • HORTICULTURE • LANDSCAPE DESIGN

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School of Professional Horticulture,  
New York Botanical Garden, Bronx, NY 10458  
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\*Magnets \*Mugs \*Key Chains \*Pens \*Calendars  
CALL FOR FREE CATALOG, QUOTE OR TO LOCATE A SPECIFIC PRODUCT!

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### COMMERCIAL INSURANCE FOR LAWN CARE FIRMS "GREEN INDUSTRY SPECIALISTS"

M.F.P. Insurance Agency is dedicated to providing comprehensive insurance programs to the Green Industry at competitive prices. We back up this dedication with a staff of professionals who understand every facet of your business, from marketing to customer service. We know how to properly insure your company whether you're a sole proprietor or a multi-state operation.

Just as your customers look to you for lawn care advice, people come to us for insurance advice because they do not want to become insurance experts themselves. If you want good advice, the right coverage, and competitive rates, please contact:

Richard P. Bersnak, President

Jill A. Leonard, V.P.

1-800-886-2398

FAX: 614-221-2203

M.F.P. Insurance Agency, Inc.  
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\$6,798

Build it yourself and save money. 5,000 sizes, all steel.  
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For FREE brochure, call toll free 24 hr.  
1-800-755-3867  
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## LANDSCAPE MANAGEMENT

MARKET SHOWCASE &  
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| ISSUES   | CLOSING DATES |
|----------|---------------|
| January  | 12-6          |
| February | 1-10          |
| March    | 2-9           |
| April    | 3-9           |
| May      | 4-11          |

(Call rep for date confirmation.)

SEND AD COPY WITH PREPAYMENT TO:

Bill Smith  
Landscape Management  
7500 Old Oak Blvd.  
Cleveland, OH 44310

for more information, call Bill:  
1-800-225-4569 or 216-891-2670  
Fax: 216-826-2865

For all ads under \$250, payment must be received by the classified closing date. We accept Visa, Mastercard & American Express. Credit card orders are accepted by phone. Send ad copy with payment to Bill Smith, LANDSCAPE MANAGEMENT, 7500 Old Oak Blvd., Cleveland, OH 44130 or call 216-891-2670. Fax Number 216-826-2865.

**BOX NUMBER REPLIES:** Mail box number replies to: LANDSCAPE MANAGEMENT, Classified Ad Department, 131 W. 1st St., Duluth, MN 55802-2065. Please include box in address.

**HELP WANTED**

**Lawn Technician and Salesperson** - join fast growing company in start-up of a new outlet in Central N.J. College Town. Must be self starter, motivated, sales oriented and field experienced. \$40k plus field benefits. Send resume to Mr. Bellis, P.O. Box 158, Mt. Freedom, N.J. 07970. 12/94

Key positions available with an expanding full-service award winning landscape operation in Cleveland, Ohio. Designer, Salesperson, Supervisor and Branch Manager opportunities. Send resume to: Yardmaster, Inc., Landscape Architects & Contractors, 1447 North Ridge Road, Painesville, Ohio 44077, Phone (216)951-9100, Fax (216)357-1624. 12/94

**LANDSCAPE MAINTENANCE & GENERAL SUPERINTENDENT:** Largest landscape maintenance company in the nation seeking individuals with 3-4 years experience. Must be able to make decisions, be creative, self-motivated, organized with strong supervisory skills. Also hiring Supervisory trainees. San Francisco Bay Area location. EOE. Please send resume to: Environmental Care, Inc., 825 Mabury Road, San Jose, CA 95133. Fax 408-437-1817. 1/95

**PRODUCTION/OPERATIONS MANAGER:** One of Atlanta's leading full service landscape management companies has an immediate need for experienced commercial maintenance managers. Environmental Design Group was established in 1978 and is one of the largest firms in the region. We seek a candidate with a great eye for detail and strong organizational and leadership skills. We provide a stable environment, formal training and competitive salary and benefits. Please fax (404)242-1745 or send resume to EDG, Human Resources Dept., P.O. Box 1302, Norcross, GA 30091. EOE/Drug Free Workplace. 12/94

**MAINTENANCE MANAGERS & SUPERVISORS:** One of the nation's largest and fastest growing full service landscape companies has an immediate need for experienced maintenance managers and superintendents, as well as entry level maintenance supervisors in the Midwest, Southwest, Mid-Atlantic, Northeast and Southeast states. The company seeks energetic, team oriented college graduates with proven leadership, communication and interpersonal skills. The company offers full-time positions, excellent advancement opportunities and exceptional compensation and benefits with an industry leader celebrating 54 years of uncompromising customer service. For immediate confidential consideration, please send or fax your resume to: The Brickman Group, Ltd., Corporate Office, 375 S. Flowers Mill Road, Langhorne, PA 19047, 215-757-9630, EOE 12/94

**LANDSCAPE MAINTENANCE** Large Delaware company has opening for aggressive self-motivated individual to work directly with owner. Position responsibilities would involve all aspects in maintenance, scheduling and customer interaction. Agronomic/horticultural degree or equivalence required. Please send resume to LM Box 515. 12/94

**GROUNDS MANAGEMENT SALES:** Central N.J. area, Background in sales to corporate clientele. Strong motivation, proven sales experience. Must be articulate, organized, aggressive. Duties: prospecting, estimating, sales. Send resume. Control Services, 737 New Durham Road, Edison, NJ 08817. Fax (908)548-4359. 12/94

**Ornamental Horticulture Instructor.** Primary duties include landscape construction and design, irrigation systems, turf management, and soils and fertilization. Secondary includes disease and insect control, plant pathology, entomology, weed control, plant identification, greenhouse, nursery management, and botany; student recruitment, and fund raising activities. Act as liaison between the college and professional organizations. Coordinate maintenance of horticultural facility and equipment, community advisory committee, and program schedule; curriculum development. BA required, or equivalent. MA preferred. Degree in Horticulture or related field is preferred. Two years occupational related experience. Application and complete job description may be obtained from: Employment Services, Foothill-De Anza Community College District, 12345 El Monte Road, Los Altos Hills, CA 94022. A vita or resume may not be substituted for a completed application. Open until filled with a first review date of January 6, 1995. Announcement #95013. AA/EOE. 12/94

**OPERATIONS MANAGER** - Horticultural Services Division. Our continued growth has necessitated us to create this new position. We are seeking to hire a top notch individual to manage operations of our commercial **Horticultural Services Division**. Our reputation is second to none for quality and service in our market area. This individual would be responsible for: directing and overseeing project managers; scheduling; hiring, training and motivating personnel; coordinating all resources including arborist, chemical applicators, mowing crews, special service crews, etc. If you are the type of individual that thrives on responsibility and challenges, and can operate with little direction, we would like to hear from you. Please submit or fax your resume to: Torre and Bruglio, Inc., 850 Featherstone, Pontiac, MI 48342, Attn: Stuart Pohl, Fax: (810)452-9293. Equal Opportunity Employer. 12/94

**Landscape Maintenance Foreman-KT Enterprises, Inc.,** a large Northern VA landscaping firm, is currently seeking highly qualified individuals to supervise within our commercial maintenance division. Candidates must have strong supervisory skills, solid horticulture background. CDL licensing and certified pesticide applicator license. Excellent wages, complete benefit package, 401(k) retirement plan and unlimited advancement. Submit resume with salary history to: Human Resources Department, 4001 Westfax Drive, Chantilly, VA 22021. (703)222-0449, fax (703)222-0578. EEO/AAP 12/94

**Manager of Grounds and Horticulture.** Monmouth College seeks individual to direct, plan, coordinate and supervise all grounds functions, with special care to be given to formal gardens and athletic fields. The manager will be responsible for overseeing landscaping projects, turf management, maintenance of vehicles and equipment, recyclables collection and removal. In addition, the successful candidate will be responsible for coordinating all work as well as training and supervising all grounds personnel. The manager will be responsible for purchasing, budget development, maintenance of inventory, identification of vendors, operation and maintenance of irrigation systems, delivery of equipment and furniture and snow removal. Ensure compliance with all federal, state and local codes and regulations related to grounds management. Successful candidate must be able to lift loads at up to 50 pounds. Must be able to effectively lead members of this department. Familiarity with equipment operation and maintenance to ensure safe and effective use of vehicles and equipment required. Minimum of seven years experience in horticulture and grounds management with at least five years in a supervisory capacity. Valid New Jersey Automobile Driver's License required. Candidate must hold or be able to obtain an NJ Pesticide Applicator License. Bachelor's degree in Ornamental Horticulture preferred. Excellent interpersonal, organizational and communication skills required. Excellent fringe benefits, including tuition waiver for employee, spouse and IRS dependent children. Applicants should forward a current resume no later than December 16, 1994 to Kathleen Hauck, Personnel Officer, Monmouth College, Cedar Avenue, West Long Branch, NJ 07764. An Equal Opportunity/Affirmative Action Employer. 12/94

**FALL/WINTER CATALOG**

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**USED:** 6 Spyder Forklifts \$7500.00 ea.; 1 Brouwer 18" Rollup Sod Harvester \$15,000.00, 719-683-2599. 12/94

**Lawn Spraying Rig.** 1000 gallon Pleasure Products, white fiberglass, 2 compartments (750/250) tank; 2 Hanney reels; (1) 8hp Honda engine with Hypro roller pump; (1) 5hp Briggs engine with Hypro roller pump; (1) 5hp Briggs engine with Ace transfer pump; (1) stainless steel frame Lesco fertilizer spreader; (2) 3 gallon pressure sprayers with holders. Complete lawn spraying unit used 2 seasons. On '75 Chevy 1-ton truck. All for \$2999.00! Cedar Rapids, Iowa (319)396-3900. 12/94

3-1991 JOHN DEERE AMT-622. Hydraulic cargo lift, new tires, completely serviced. Excellent condition! \$2,995.00 each. Jeff Evans (813)922-4345. 12/94

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**BUCKET TRUCKS:** Straight Stick, Corner Mount and Knuckle Boom Cranes. Brush Chippers: New Morbark Disc and Drum Style. New Rayco Stump grinders. Best prices anywhere. Used Chippers: Asplundh, Morbark, etc. 2 to 8 usually in stock. Sprayers, Dumps, Stakes, Log Loaders, Crew Cab Chip Box Dumps, Railroad Trucks, 50 in stock. Sold as-is or reconditioned. We also buy your surplus equipment. Opdyke's, Hatfield (Philadelphia Area). 215-721-4444. 12/94

**FINN HYDROSEEDERS AND MULCH BLOWERS- NEW AND USED LARGE PARTS INVENTORY- SAME DAY SERVICE. (BALTIMORE AREA) WOLBERT & MASTER, INC. 410-335-9300. 12/94**

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**FOR SALE**

**BUCKET TRUCK:** Hi Ranger 65', 57', 50'. Skyworkers with chip boxes. Asplundh bucket trucks with chip boxes. Asplundh brush chippers. Bean 55 gal. sprayers. Pete Mainka Enterprises, 633 Cecilia Drive, Pewaukee, WI 53072. 800-597-8283. 12/94

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**WANTED:** Old SPYDER forklifts and/or forklift frames. Mobile Lift Parts, Inc., 5402 Edgewood Rd., Crystal Lake, IL 60012. (800)397-7509. 12/94

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2. Start with (month) \_\_\_\_\_ issue.
3. Amount enclosed: \$ \_\_\_\_\_  
 (To keep our rates as low as possible, payment must accompany order)

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TITLE \_\_\_\_\_  
FIRM \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
CITY \_\_\_\_\_  
STATE \_\_\_\_\_ ZIP \_\_\_\_\_

TELEPHONE ( \_\_\_\_\_ ) \_\_\_\_\_

FAX NUMBER ( \_\_\_\_\_ ) \_\_\_\_\_

HAVE A SALES REP CALL ME 18  (A)

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 101 | 118 | 135 | 152 | 169 | 186 | 203 | 220 | 237 | 254 | 271 | 288 | 305 | 322 |
| 102 | 119 | 136 | 153 | 170 | 187 | 204 | 221 | 238 | 255 | 272 | 289 | 306 | 323 |
| 103 | 120 | 137 | 154 | 171 | 188 | 205 | 222 | 239 | 256 | 273 | 290 | 307 | 324 |
| 104 | 121 | 138 | 155 | 172 | 189 | 206 | 223 | 240 | 257 | 274 | 291 | 308 | 325 |
| 105 | 122 | 139 | 156 | 173 | 190 | 207 | 224 | 241 | 258 | 275 | 292 | 309 | 326 |
| 106 | 123 | 140 | 157 | 174 | 191 | 208 | 225 | 242 | 259 | 276 | 293 | 310 | 327 |
| 107 | 124 | 141 | 158 | 175 | 192 | 209 | 226 | 243 | 260 | 277 | 294 | 311 | 328 |
| 108 | 125 | 142 | 159 | 176 | 193 | 210 | 227 | 244 | 261 | 278 | 295 | 312 | 329 |
| 109 | 126 | 143 | 160 | 177 | 194 | 211 | 228 | 245 | 262 | 279 | 296 | 313 | 330 |
| 110 | 127 | 144 | 161 | 178 | 195 | 212 | 229 | 246 | 263 | 280 | 297 | 314 | 331 |
| 111 | 128 | 145 | 162 | 179 | 196 | 213 | 230 | 247 | 264 | 281 | 298 | 315 | 332 |
| 112 | 129 | 146 | 163 | 180 | 197 | 214 | 231 | 248 | 265 | 282 | 299 | 316 | 333 |
| 113 | 130 | 147 | 164 | 181 | 198 | 215 | 232 | 249 | 266 | 283 | 300 | 317 | 334 |
| 114 | 131 | 148 | 165 | 182 | 199 | 216 | 233 | 250 | 267 | 284 | 301 | 318 | 335 |
| 115 | 132 | 149 | 166 | 183 | 200 | 217 | 234 | 251 | 268 | 285 | 302 | 319 | 336 |
| 116 | 133 | 150 | 167 | 184 | 201 | 218 | 235 | 252 | 269 | 286 | 303 | 320 | 337 |
| 117 | 134 | 151 | 168 | 185 | 202 | 219 | 236 | 253 | 270 | 287 | 304 | 321 | 338 |

### LANDSCAPE MANAGEMENT

DECEMBER 1994  
This card is void  
after February 15, 1995

#### 1. BUSINESS & INDUSTRY

MY PRIMARY BUSINESS AT THIS LOCATION IS:  
(PLEASE MARK ONLY ONE IN EITHER A, B OR C)

#### A. Landscaping/Ground Care at one of the following types of facilities:

- 01  0005 Golf courses  
02  0010 Sports Complexes  
03  0015 Parks  
04  0025 Schools, colleges, & universities  
05  Other type of facility (please specify) \_\_\_\_\_

#### B. Contractors/Service Companies/Consultants:

- 06  0105 Landscape contractors (installation & maintenance)  
07  0110 Lawn care service companies  
08  0112 Custom chemical applicators  
09  0135 Extension agents/consultants for horticulture  
10  Other contractor or service (please specify) \_\_\_\_\_

#### C. Suppliers:

- 11  0205 Sod growers  
12  Other supplier (specify) \_\_\_\_\_

Which of the following best describes your title:  
(mark only one)

- 13  10 EXECUTIVE/ADMINISTRATOR  
14  20 MANAGER/SUPERINTENDENT  
15  30 GOVERNMENT OFFICIAL  
16  40 SPECIALIST  
17  50 OTHER TITLED AND NON-TITLED PERSONNEL (specify) \_\_\_\_\_

I would like to receive (continue receiving)  
LANDSCAPE MANAGEMENT each month: YES  NO

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

NAME \_\_\_\_\_  
TITLE \_\_\_\_\_  
FIRM \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
CITY \_\_\_\_\_  
STATE \_\_\_\_\_ ZIP \_\_\_\_\_

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| 104 | 121 | 138 | 155 | 172 | 189 | 206 | 223 | 240 | 257 | 274 | 291 | 308 | 325 |
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LANDSCAPE MANAGEMENT each month: YES  NO

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

NAME \_\_\_\_\_  
 TITLE \_\_\_\_\_  
 FIRM \_\_\_\_\_  
 ADDRESS \_\_\_\_\_  
 CITY \_\_\_\_\_  
 STATE \_\_\_\_\_ ZIP \_\_\_\_\_

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- 11  0205 Sod growers
- 12  Other supplier (specify) \_\_\_\_\_

Which of the following best describes your title:  
 (mark only one)

- 13  10 EXECUTIVE/ADMINISTRATOR
- 14  20 MANAGER/SUPERINTENDENT
- 15  30 GOVERNMENT OFFICIAL
- 16  40 SPECIALIST
- 17  50 OTHER TITLED AND NON-TITLED PERSONNEL (specify) \_\_\_\_\_

I would like to receive (continue receiving)

LANDSCAPE MANAGEMENT each month: YES  NO

Signature: \_\_\_\_\_ Date: \_\_\_\_\_



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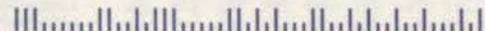
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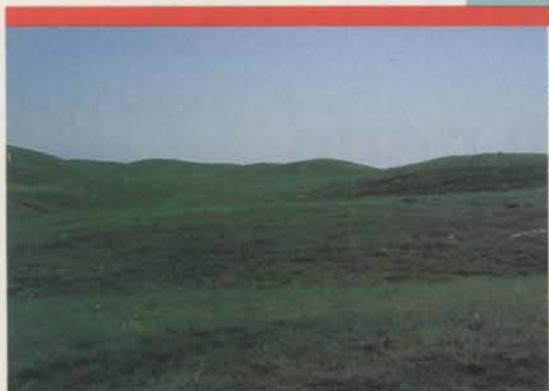
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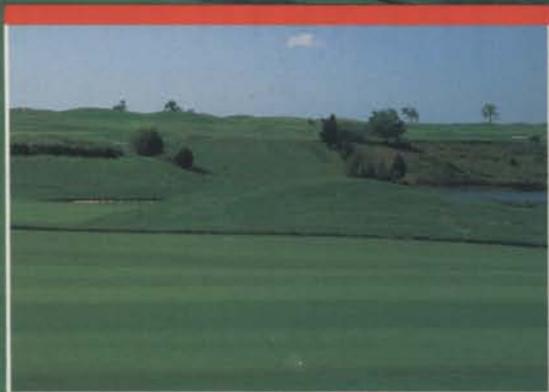
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