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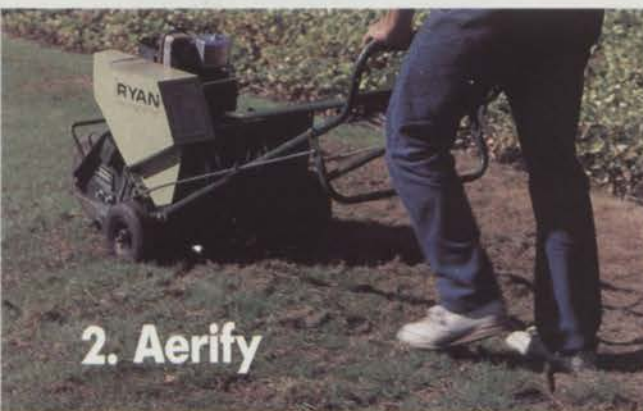
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VOLUME II, NUMBER II

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Cleveland, Ohio

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Editor's Focus

IT'S BEEN A long road for the organizers of the first Green Industry Expo. More than three years in planning, it's now time to sit back and see just what this joint trade show will offer the industry.

Will it be a success?

Will attendance reach predicted levels?

Is this show the answer to the non-golf segment of the green industry?

We'll have to wait and see.

But let's hope this is the start of a new level of cooperation among green industry organizations. There's no reason that maintenance operators have to cringe whenever a story appears on TV, radio or in their local newspaper.

It's time for the industry as a whole — applicators and maintenance operators, designers and landscape contractors and irrigation and tree professionals — to really join forces to make this service industry better understood.

A bigger and better trade show is OK for attendees, distributors, suppliers and association coffers, but what about the rest of the year? Why can't unreasonable regulation be stopped in its tracks? Why can't a group of maintenance professionals take the benefits of the green industry on the road, promoting aesthetic and environmental benefits just as effectively as Meryl Streep condemns the use of pesticides?

Thankfully there's some movement in this direction.

A new organization — Responsible Industry for a Sound Environment — is coming into focus. The group, founded by representatives from eight specialty chemical companies, purports to be a new entity which will pool its monetary and professional resources to promote and defend the industry.

RISE will be an important asset to the green industry — particularly as it emerges on the heels of the demise of the Pesticide Public Policy Foundation.

Although still a legal entity, 3PF is all but a token of its former self. Most of the board of directors have resigned as a result of lack of funding for the organization.

In any event, RISE recognizes that many individuals in the lawn and landscape maintenance industry have addressed and defended particular issues, they're just ready to band together and initiate a force in the industry.

So what's next? Speculation surround-



ing the possible alliance of one or more of the national associations is a positive move.

While no definite plans have come to light, the suggestion that associations can work together serving mutual interests is significant. Just think of the impact combined resources could bring the industry. If correctly established, an umbrella association could serve specialized needs as well as mutual concerns.

We'd like to hear from our readers on this topic. Would an alliance among national associations better serve you?

The concept is both new and old. More than a decade ago, some thought was given to uniting resources for one cause. That message got diluted along the way, but hasn't completely been lost.

We'll just have to wait and see. Let's just hope it isn't too long.

Along with this issue, you'll also find our second Issues Management Special Report. The special edition provides the readers of *Lawn & Landscape Maintenance* with an exclusive look into the business minds of some of the leading maintenance companies across the country.

Find out how they're addressing industry needs and concerns such as water conservation, economic matters, horticultural waste disposal and pricing for profit among others.

You'll also see how some of the industry's leading suppliers are diligently working to adjust their products to meet the needs of their customers.

Find out more by reading this special edition. — *Cindy Code* ■

Cindy Code
Editor

David Westrick
Assistant Editor

Charlotte Goerss
Art Director

Helen Duerr
Assistant Art Director

Tracy Green
Graphic Assistant

Jami Childs
Production Manager

Tracy Brubaker
Production Assistant

Richard J.W. Foster
President

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Publisher

Christopher W. Foster
Business Manager

Rosalie Slusher
Circulation Manager

Mark Fosse
Marketing/Research Manager

Fran Franzak
Office Manager

Maureen Mertz
National Sales
42480 Park Ridge Road
Novi, Michigan 48375

313/348-9636
Fax: 313/348-3719

Tim Kasperovich
Midwest Sales
4012 Bridge Avenue
Cleveland, Ohio 44113

216/961-4130
Fax: 216/961-0364

ADVISORY BOARD

Karl Danneberger, Tom Garber
Des Rice, Joe Vargas
Patricia Vittum, Richard White

EDITORIAL OFFICES

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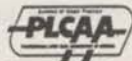
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News in Brief

NEWS DIGEST

ChemLawn Names New President

David Siegfried succeeds Michael Shannon as president of ChemLawn Services Corp., Columbus, Ohio.

Siegfried, formerly vice president, strategic development, will report to Shannon, who returned full-time to Eco-lab, ChemLawn's parent company. The transition was planned since Siegfried's arrival at ChemLawn in March.

Lesco, Echo Settle Restraint of Trade Suit

The five-month lawsuit between LESCO and Echo was dismissed following an undisclosed settlement agreement.

LESCO of Rocky River, Ohio, had filed a restraint of trade against Echo of Lake Zurich, Ill., and its distributors in an attempt to prevent Echo from breaching or interfering with its contract which enables LESCO to distribute Echo trimmers, brush clippers and blowers.

Expected Cash Infusion To Bolster Bunton Co.

After several months of speculation and rumors of filing Chapter 11, Bunton Co., Louisville, Ky., is in the last steps of finalizing an agreement to bring new investors into the company, said Stan Byers, company president and CEO.

Because the deal is not yet complete, Byers declined to name the investors.

Court: FIFRA Preempts Local Legislation

A late summer decision from the Sixth Circuit U.S. Court of Appeals in Cincinnati, Ohio, upheld a lower court's ruling that the Federal Insecticide, Fungicide and Rodenticide Act preempts local municipalities from regulating pesticide use. The issue may now be taken before the U.S. Supreme Court.

The ruling affects Kentucky, Tennessee, Michigan and Ohio.

Waste Management, ServiceMaster Merger Draws Speculation, Anticipation

ALTHOUGH THE dust hasn't even begun to settle surrounding the anticipated merger between Waste Management, parent company of TruGreen, and ServiceMaster, industry speculation and reaction is running amuck.

The deal combines Waste Management's lawn care and pest control businesses with ServiceMaster's complete line of consumer services, and will be known as ServiceMaster Consumer Services Limited Partnership. It will operate as a unit of ServiceMaster.

If accepted by both companies' boards of directors, TruGreen and variously named pest control businesses will join with ServiceMaster's residential and commercial lawn care, cleaning, pest control, maid service and home maintenance warranty services creating a company with annual revenues topping \$900 million.

Some view the venture between TruGreen, the long acknowledged number two lawn care firm in the United States, and ServiceMaster, the quickly growing franchisor, as further evidence of industry consolidation, while others see it as a non-event; simply an added benefit in ServiceMaster's attempt to obtain Waste Management's pest control businesses.

Still further speculation gives credence to rumors that TruGreen branches have been struggling for some time.

Details are expected to be unraveled some time before year's end, giving the new entity an opportunity to prepare for the 1991 maintenance season.

From a TruGreen perspective, news of the joint venture was welcome.

"People here are very excited; they're looking forward to the partnership between Waste Management and ServiceMaster," said Don Karnes, vice president of TruGreen's northern lawn care region. "TruGreen can only improve and grow."

Karnes said he expects TruGreen to retain its name and the firm to be run separately from ServiceMaster pest control businesses. Since the deal is so new, revealed to the public near the end of September, most details are sketchy.

Roger Ervin, vice president, financial relations for ServiceMaster, said the fate of the TruGreen name has yet to be determined.

"This is in the early stages and all the details have to be worked out," he said.

"TruGreen is second in the industry and ServiceMaster is somewhat smaller. We will probably use both names for a while before making any definite changes.

Ervin denies speculation that ServiceMaster was only interested in acquiring pest control businesses and not TruGreen. "We are interested in both; we wouldn't have taken it on otherwise."

The main attraction for ServiceMaster will be increasing market share. Currently, many of its lawn care branches and franchises are competing directly with TruGreen branches.

Deciding what to do in those areas and how to incorporate those operations will be one of the first topics of discussion after the agreement becomes definite, Ervin said.



(Source: Chicago Tribune/ServiceMaster Ltd. Partnership)

(continued on page 10)

Irrigation Association Announces 1991 Slate

The Irrigation Association has announced its slate for 1991 officers and directors.

Officers for the coming year will be: Bob Emmerich, Toro Co., Riverside, Calif., president; Thomas Kimmel, Hardie Irrigation, Laguna Niguel, Calif., president-elect; William Koonz, Koonz Sprinkler Supply, Springfield, N.J., vice president; Joe Goecke, Valmont Industries Inc., Valley, Neb., treasurer; Glenn Tribe, Cornell Pump Co., Portland, Ore. past president; and Robert Morgan, Escondido, Calif., IA historian.

Directors will include: Jack Buzzard, Rain Bird Sales Inc., Glendora, Calif.; Philip DeMarco, Aqua Flo Inc., Hammononton, N.J.; Sam Duke, Russel Daniel Irrigation, Athens, Ga.; William Gibson, AMS Irrigation & Pump Supply, Pensacola, Fla.; Tom Paterson, New Way Irrigation Ltd., Taber, Canada.

Other directors are: Philip LeBlanc, Hardie Irrigation, Sanford, Fla.; John Morgan, sales and marketing consultant, San Marcos, Calif.; Bart Nelson, Nelson Irrigation, Walla Walla, Wash.; Carol Colein, Colein & Associates, Rochester,

Mich.; Louis Toth, Aqua Lawn Inc., Fairlawn, Ct.; and Edward Newbegin, Wade Manufacturing Co., Portland, Ore.

PLCAA Announces 1991 Candidate Slate

Director candidates and officers for the Professional Lawn Care Association of America have been named for 1991. They are:

Neal DeAngelo, president, Lawn Specialties, Hazleton, Pa., as president; Bob Andrews, president, The Greenskeeper, Carmel, Ind., president-elect, first vice president; Ed Coia, vice president, Lawnmark, Hudson, Ohio, as secretary/treasurer; and Patrick Nibler, vice president, Pro-Grass Inc., Wilsonville, Ore., as second vice president. Rick Steinau, president, Greenlon Lawn Care Services, Cincinnati, Ohio, will serve as past president.

Seven nominees for four director slots are: Kenneth Clemmer, vice president, Moyer & Son; Greg Clendenin, vice president, Middleton Pest Control; Norm Goldenberg, vice president Waste Management Urban Services; Mark Linehan,


president Service Master Lawn Care, Salem, N.H.; Ed McGuire, president Lawn Company, South Dennis, Mass.; Patrick Norton, president, Barefoot Grass, and Chris Senske, president Senske Lawn and Tree Care.

PGMS Names 1991 Slate For Officers, Directors

The Professional Grounds Management Society has named its slate for 1991 officers and directors to be elected this month in Nashville, Tenn..

The officers will be: Thomas Smith, Spring Grove Cemetery and Arboretum, Cincinnati, Ohio, as president; John Abernethy Jr., Lenoir Cemeteries, Lenoir, N.C., as first vice president; John Michalko, Case Western Reserve University, Cleveland, Ohio, as second vice president; Robert Rubel, Rubel's Landscape Services, Fort Worth, Texas, as treasurer; and Theodore Shull, Kettering Medical Center, Kettering, Ohio, as past president.

Nominated for three director positions are: Charles Wilson, California State University at Los Angeles; Earl Wilson,

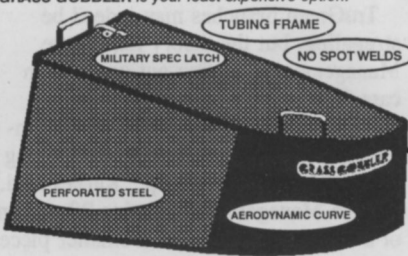


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Thornton-Wilson Inc., Maineville, Ohio; Teddi Davis, Garrick Corp., Cleveland, Ohio; and Jim Long, College of Holy Cross, Worcester, Mass. Directors serve two-year terms.

Merger

(continued from page 8)

Initial plans call for Waste Management to own 20 percent of the newly created company, while ServiceMaster will retain

the other 80 percent. In addition, Waste Management will have representation on the board of directors, but will not be involved in the daily operations of the company, according to Waste Management officials.

The two businesses that Waste Management brings to the venture boasted 1989 revenues of approximately \$170 million, while businesses under the ServiceMaster umbrella contribute more than \$750 million.

"It's a good situation for Waste Man-

agement; it gives them a chance to bail out of something they may not have a continuing daily interest in," said Joe Winland, a former group vice president with TruGreen. "It's a positive move, but it'll take some unsettling and change. TruGreen has been around for a long time and it'll continue to find its niche."

Although not surprised that TruGreen was sold, Steve Hardymon, vice president of environmental affairs and media relations for ChemLawn Services Corp., said he was somewhat surprised that it was ServiceMaster doing the buying.

"The pest control business fits nicely with Terminix, but TruGreen doesn't have the same kind of fit with ServiceMaster lawn care," he said. "It'll be interesting to see what a company that is mainly franchises does with a company that is all company-owned branches. The TruGreen name is much more recognizable. I'd think they would keep it."

Hardymon doesn't see the merger having an effect on industry leader ChemLawn, but sees a potential impact on the industry in general, and the Professional Lawn Care Association of America specifically.

"I have a feeling that Waste Management was disenchanted with TruGreen. I don't think they saw the potential and they probably don't anticipate the growth we do," he said. "It's not widely known, but Waste Management was quite supportive of PLCAA since buying TruGreen. They donated people, time, money and resources to the association."

"At the same time, ServiceMaster seemed to be pulling away from PLCAA. Now I would hope that ServiceMaster feels an obligation both to the association and to the industry. When you take over the second largest company in an industry, you also are taking on a leadership role. PLCAA's worked hard to reposition itself and become more active. It'd be a real blow to have a company of that size not take an active role."

TruGreen branches may indeed be struggling, but the theory that Waste Management is bailing out on its lawn care firm doesn't hold a lot of weight.

"They're maintaining a 20 percent interest; it's a *joint* venture. We're looking forward to the partnership," Karnes said. "Waste Management is getting 20 percent of a bigger company; it's a smaller piece of a bigger pie."

And while some suggest that Waste Management is cutting its losses and going back to its roots in the municipal garbage collection business, Hardymon disagrees.

"I don't think that argument holds water. Waste Management is a big com-



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pany with a lot of talented people," he said. "I think they could've figured it out or overcome that problem if they really wanted to."

Although he had some idea of what Waste Management and ServiceMaster were doing separately, Patrick Norton, president of Barefoot Grass, said he's not sure what impact the combined resources of the two will have on the lawn maintenance industry.

"I don't see it as having a huge impact; what was here before will be here afterward in a different style," Norton said.

"There were rumors that TruGreen was struggling, but they were improving operations and I expect that to continue."

Norton doesn't view the merger as consolidation or a major move in the lawn maintenance industry because ServiceMaster is a comparatively small company. Barefoot Grass, Worthington, Ohio, is the number three lawn care company in the United States.

Jerry Faulring, president of HydroLawn, Gaithersburg, Md., said the merger will have a favorable industry impact.

"It brings credibility back to this segment of the market; a lot of people have been disappointed with TruGreen," he said. "ServiceMaster is an outstanding organization. It all boils down to price, quality and service and ServiceMaster has all three to bring to the table."

While TruGreen and ServiceMaster have their operational differences — company owned branches vs. franchises — it's a real possibility that the venture may bring little change.

ServiceMaster franchisees operate under non-exclusive contracts, making it possible to have more than one franchise in the same market.

Mark Webb, a ServiceMaster franchise owner in Permian Basin, Texas, said he thinks ServiceMaster will move some owner/operators into TruGreen branches.

"I don't have a TruGreen competitor in my area, but I'd jump at the chance to get involved in one of their branches if I could," he said. "I think a ServiceMaster owner could really do something with the TruGreen customer base. They'd be able to add some substance and a high level of service after the marketing was finished. I think TruGreen operations could really be turned around with ServiceMaster owner/operators."

Green industry competitors aren't the only ones looking at the proposed merger with interest. Manufacturers and suppliers are keeping a sharp eye on developments as it relates to product sales to each of the companies — purchases which traditionally begin near fall's end.

"Because of the nature of TruGreen

and the size of Waste Management, everyone knows their business is up for grabs," said Tom Sayward, president of Tuflex Manufacturing, Pompano Beach, Fla. "Trade shows are going to be particularly important to them to find out who's breaking new ground, particularly with new products which are environmentally responsible.

"Anytime you have consolidation in the industry, everything's on hold while they evaluate personnel, equipment, etc. In decision is the biggest problem for us.

Tuflex has built a lot of tanks for TruGreen as well as some for ServiceMaster and Terminex, and Sayward hopes to continue his relationship with the new firm.

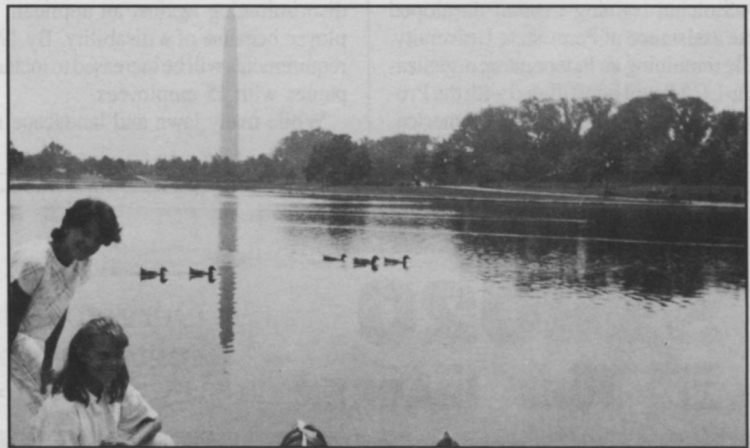
But as consolidation creates some redundancies in management, it also results in an abundance of equipment, an excess which could have a ripple effect.

"It creates a double-edged sword for us," he said. "It won't just be the big guys not buying equipment, but the little guys, because they'll be getting good deals on used equipment." ■



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Association News

PENNSYLVANIA LAWN care operators are the latest to organize a state association — the **Lawn Care Association of Pennsylvania**. In its first general meeting, directors detailed their activities and discussed specific goals for various committees.

President Neal DeAngelo presented position statements to members for their comments and input. Issues addressed include prenotification and posting, integrated pest management and use of written contracts.

The new organization already has some tough battles to attack including two communities expressing interest in passing strict regulations against lawn care operators, according to Bill DeHaven, chairman of the government affairs committee.

Jamie Brueninger, chairman of the training and education committee, told members his committee had completed the first draft of a technician training manual developed with the assistance of Penn State University.

While remaining an independent organization, the LCAP will be affiliated with the Professional Lawn Care Association of America.

Where to Go for More Information

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Marietta, Ga. 30068-2112
404/977-5222

VNA

Route 4 Box 356
Christiansburg, Va. 24073
703/382-0943

Nevada

Cooperative Extension
S.T.&P. Bldg., Suite 207
953 E. Sahara Ave.
Las Vegas, Nev. 89104
702/731-3130

ALCA

405 N. Washington St.
Falls Church, Va. 22046
703/241-4004

AAN

1250 I St.,
Suite 500
Washington, D.C. 20005
202/789-2900

The Americans with Disabilities Act was signed into law by President George Bush in late summer.

Taking effect in July 1992, the law prohibits employers with 25 or more workers from discriminating against an applicant or employee because of a disability. By 1994, the requirements will be increased to include companies with 15 employees.

While many lawn and landscape maintenance

firms will be exempt because they have fewer than 25 workers in 1992, the **Professional Lawn Care Association of America** is reminding members that most states have laws prohibiting employment discrimination based on disabilities.

Because the law is expected to protect more than 43,000,000 disabled Americans, increased enforcement is likely, reported Richard Lehr, PLCAA general counsel.

SS8020 ZTR TURF TRACKER



Our zero-turing radius Turf Tracker puts you in control. The compact design and full hydrostatic drive provide complete maneuverability. It is capable of spreading and spraying 40,000 sq. ft. in less than 6½ minutes. The ZTR TURF TRACKER is possibly the greatest labor-saving machine in the green industry.

C & S TURF CARE EQUIPMENT, INC.
3425 Middlebranch Road N.E.
Canton, Ohio 44705
(216) 453-0770 1-800-872-7050



For more information contact the PLCAA.

The **Virginia Nurserymen's Association** research committee has awarded \$19,000 in grants to help fund research proposals at Virginia Tech in the plant pathology, physiology and weed science department as well as the horticulture department.

Another recipient will be the Hampton Roads Agriculture Experiment Station in Virginia Beach.

Committee members reviewed 15 proposals and granted money to 12. This was the largest amount the association has allocated for research projects. Since 1986 the research trust fund has maintained more than \$163,000, raised from plant auctions, yearly budget allocations and member contributions.

The **Associated Landscape Contractors of America** recently revised the organization's publications catalog which contains a complete listing of publications from the association.

Recently added to the list are videos and business-oriented publications tailored to meet the needs of exterior and interior landscape contractors such as: "Driving Straight Trucks Video," "Make the Magic Happen Career Video," "Safe Driving Techniques Video,"

"Starting and Operating a Business in Your State Video," "When Seconds Count ... Emergency Action Video," "Your Family Business," "100 Two-Minute Safety Talks," "Crystal Ball Report IX — Landscape Contracting Today and in the Year 2000" and "Safe Use of Pesticides in Interiorscapes Video."

The catalog lists the prices for all publications, contains order forms and gives a brief description of each publication.

To receive a free copy, contact the association's publications department.

Nominations and entries are being sought by the **American Association of Nurserymen** for its 23rd annual advertising awards program. A panel of advertising experts will review all entries and provide a written critique of each entered ad including ideas of how to improve it.

Entries that offer useful guidelines for other nursery and landscape advertisers will be recognized in AAN publications and at its February management clinic.

The program is open to any AAN member. All advertising must have been published or broadcast between Dec. 1, 1989 and Nov. 30, 1990. All printed entries must be mounted on a display board 16 by 20 inches or 20 by 28 inches.

The special category definitions are:

Spot Color. A second and/or third color

used sparingly to give emphasis or to add visual interest in a printed piece. The first color is usually black.

Four-Color Process. The use of colored printing inks to reproduce a colored original. The original artwork is divided into cyan, magenta, process blue and black by photographing with special color filters.

A Campaign. A series of ads in one or more media that covers a single theme and share some manner of resemblance. Entry must include three pieces.

A brief narrative stating the ad's intended objective, strategy and target audience must accompany each entry. A \$50 fee is required per entry, and they must be received by Dec. 1.

The Desert Turfgrass conference sponsored by the **Nevada Cooperative Extension** agency has announced that Dennis Underwood, commissioner of the Bureau of Reclamation, will present the keynote address.

Underwood's speech will concentrate on the adequacy of the water supply from the Colorado River for the Southwest turfgrass and landscape industries. His address will set the framework for the two-day seminar Dec. 13 and 14 at Bally's Resort Casino in Las Vegas.

Educational sessions will be held both days while a trade show will offer participants an opportunity to view the latest in equipment.

NEW SPREADER FILTER*

Prevents Clogging • Stops Streaking

- 100% filtering of product
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- only \$16.00**

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Jaun Tech

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THE ACCESSORY THAT COUNTS



Records True Engine
Running Time

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Minimum Investment
For Maximum Protection

- ★ NO BATTERY NEEDED ★
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Circle 51 on reader service card

Landscape News

COMPOSTING CAN BE A SOUND ALTERNATIVE TO LANDFILL DUMPING

MANY MIDWESTERN states, like Wisconsin, Michigan and Illinois, are facing restrictions on yard waste dumping in landfills. Illinois, in fact, banned such waste from its landfills on July 1.

Lawn and landscape maintenance contractors, accustomed to convenient tipping, were forced to look for alternatives. Many waste companies responded with "green" landfills, where yard waste is composted plowed under. Tipping, it appeared, was here to stay.

But a closer look at the economics of composting reveals some intriguing numbers which suggest that independent composting by landscapers can be a profitable alternative to costly tipping.

Numbers from DK Recycling Systems Inc.,

a large-scale composting operation in Lake Bluff, Ill., and Scott Byron & Co., a medium-sized landscape contractor also in Lake Bluff, will serve as examples.

DK manages two composting sites, one for the city of Lake Forest and the other for an associated company, LDK Composting Inc. Between the two sites, some 40,000 cubic yards of landscape waste are processed each year, producing roughly 10,000 yards of finished, salable compost.

DK runs the facilities with only three full-time machine operators who are responsible for processing incoming material, maintaining the machines and monitoring the composting process.

They work from March to November, av-

eraging 40 to 60 hours per week depending on the quantity of incoming material. Peak workloads come in May and June for grass and in October and November for leaves.

Before DK began composting, it went through a simple six-week Environmental Protection Agency permit application process. The two sites were partially paved to improve drainage and facilitate the operation of heavy earth-moving equipment.

DK acquired three machines, only two of which are necessary to produce high-quality compost within six months: A Jenz AZ 30 shredder and a Farwick Super sieve.

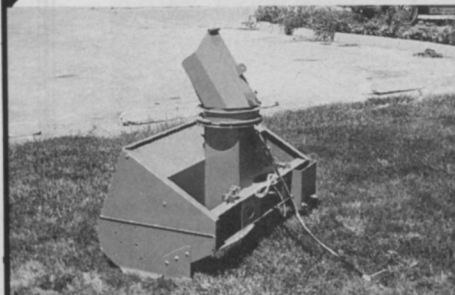
The shredder, which processes more than 100 cubic yards per hour, costs \$120,000, but

(continued on page 18)

**Move
Snow
Mountains!**

Olathe

**Model 150
Snow
Blower**



Outfront attachment to Toro GM300 and 220D tractors. Features 180 degree electric directional chute and driftbuster.

Call Your Nearby Olathe/Toro Dist. For Demo!

**100 Industrial Parkway
Industrial Airport, KS 66031
913-782-4396
FAX: 913-764-1473**

Circle 53 on reader service card

**Compact
and
Powerful!**

Olathe

**Model 182
Brush & Limb
Chipper**



20 or 24 HP disc chipper designed to reduce brush and limbs to 6" diameter. 170 degree chipper head rotation and 360 degree discharge chute.

Call Your Nearby Olathe/Toro Dist. For Demo!

**100 Industrial Parkway
Industrial Airport, KS 66031
913-782-4396
FAX: 913-764-1473**

Circle 54 on reader service card

Olathe

**Model 48HL
"High Lift"
Turf Sweeper**



Sweep wet or dry leaves and debris then deposit directly into a container or truck with the 5½ ft. self-dumping hydraulically activated dump. Features 1¼ cu. yd. hopper.

Call Your Nearby Olathe/Toro Dist. For Demo!

**100 Industrial Parkway
Industrial Airport, KS 66031
913-782-4396
FAX: 913-764-1473**

Circle 55 on reader service card

When Lawn Doctor franchises move up to TURFLON, broadleaf weeds take a fall.



"TURFLON is more effective on the broadleaves that the competition is missing."—

Russ Frith, president
Lawn Doctor,
Matawan, NJ

If "easy" weeds were the only ones cropping up in customers' lawns, 2,4-D would handle the job. But that's not the case. You need a tough product to keep tough weeds down. Maybe that's why you should move up to TURFLON® herbicide.

The real problem with lawn care.

"Weed control is the most important problem," explains Russ Frith. And as president of one of the nation's most successful lawn care franchisers, he ought to know. In explaining how TURFLON has worked for Lawn Doctor, Russ says, "It does a better job on the tough to control weeds."

Prove it for yourself.

How do franchisers who use it justify broadcast spraying TURFLON at about \$9.50 per acre? "Reduced callbacks," Russ says. He adds that independent Lawn Doctor operators select their own products. Most are skeptical of TURFLON until they prove for themselves that it does a better job of controlling tough weeds. "Many who use it full service started with spot (spraying)."

Finally, Russ says one word describes the experience Lawn Doctor franchises have had using TURFLON: "Excellent."

Isn't it time you moved up to a better herbicide for better weed control? Call us to find out more. 1-800-352-6776.

Move up to TURFLON



*Trademark of The Dow Chemical Company

Circle 6 on reader service card

Landscape News

(continued from page 16)

is well worth the investment for a number of reasons.

First, it dramatically reduces the volume of raw material to be composted. Second, it reduces tree branches and trunks to shredded twigs — such large material would otherwise take years to decompose.

Shredding also exposes a greater amount of surface area to microbial action, speeding the decomposition process. Third, it's mobile, so it can be positioned to eject material directly into clamps, saving the labor and fuel costs incurred by moving tons of material.

Finally, the machine ejects material in such a way that clamps are better oxygenated and break down more rapidly.

Decomposition speed is important for maximizing productivity. DK is able to convert fresh grass into salable compost in only 90 days. Such rapid breakdown allows a facility to handle a greater volume of raw material and produce more salable compost. Speed, in other words, means increased revenues. The Jenz, or a similar machine, is essential



The Farwick Super III separates large material from compost.

for the production of a quality, end product.

The second machine, the Farwick sieve, costs \$70,000 and is necessary for producing the grade of compost that landscaping demands. It can process 40 cubic yards per hour and produces a clean compost (maximum particle size 25mm) usable as a soil amendment or topdressing.

In addition to the site preparation, labor and equipment costs already mentioned, a facility must have a Bobcat or similar machine to organize/mix incoming materials, load the shredder and sieve and build clamps. Occasionally, a large-capacity payloader may be

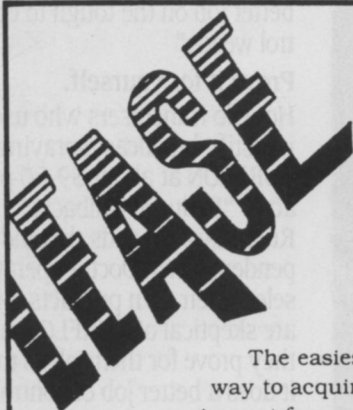
needed to reorganize the site.

The start-up and operating expenses for the first year amount to between \$250,000 and \$350,000. The numbers become much less intimidating considering the savings composting can generate.

For example, in 1988 alone, Scott Byron & Co. spent \$43,717 on tipping fees, \$14,400 on bark and \$21,406 on mushroom compost, a mixture of horse manure and straw. The total: \$79,523. In addition, Byron spent another \$55,000 in waste transportation, handling and subcontracting.

In-house composting would have spared them the cost of the tipping fees, three-fourths of the bark, the mushroom compost and 99 percent of the extra waste handling and transportation — in all, more than \$130,000. Add to that amount potential tipping revenues and compost sales — DK charges \$8 per cubic yard to tip and sell its compost for \$12 per yard — and it becomes clear that composting can pay for itself in two or three years. — Charles Pick and Robert Gillespie

The authors are a consultant and managing director with DK Recycling Systems Inc., Lake Bluff, Ill.



The easiest way to acquire equipment for your business is to lease it. We specialize in tailoring leases to lawn care professionals. Contact us to see how easy it is to expand your business.

FOR DETAILS CONTACT:
Mike Bush

BUSH & COOK LEASING, INC.

185 Park Dr.
Wilmington, OH 45177

(513) 382-5502 or
(800) 766-BUSH

Circle 68 on reader service card

THE
NEW!

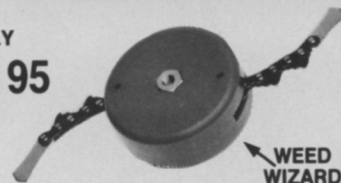
Weed Wizard®

ATTENTION:
LANDSCAPERS AND COMMERCIAL USERS

- No more trouble with trimmer line — **never buy line again!**
- Easy to install on **your** gas trimmer.
- Cuts through tough weeds, briars and grass.
- Keeps **your** rotary trimmer in business.
- **Guaranteed** to save you time!

TO ORDER CALL TODAY
1-800-262-5122
(Call for quantity pricing)

ONLY
\$2195



() VISA () M/C # _____ Exp. Date _____
() Check enclosed for \$21.95 plus \$3.00 postage and handling.

Your Trimmer Make _____ Model # _____

Name _____ Phone (____) _____

Street _____

City _____ State _____ Zip _____

Send to: **WEED WIZARD, INC.**, P.O. Box 275, Dahlonega, Georgia 30533

Circle 56 on reader service card

When Tim Doppel moved up to TURFLON, his bottom line followed.



"The first year we used TURFLON, we realized a \$1,200 savings on service call costs."—

Tim Doppel, president
Atwood Lawncare, Inc.
Sterling Heights, MI

Keeping a lid on expenses becomes more and more important as your business continues to grow. Do things right, and profits will rise while the cost of servicing each new customer falls. If that's the kind of lawn care firm you want to run, maybe it's time you moved up to TURFLON* herbicide.

When more is less.

"Even though the product costs more, I still end up saving money by using TURFLON," explains Tim Doppel. And he has three years' worth of documented results to prove it pays to broadcast spray TURFLON at about \$9.50 per acre. "The first and foremost advantage of using TURFLON is its effectiveness. It works."

Reducing callbacks and cancellations is the key.

"The first year we used TURFLON, we had a 20 percent reduction in callbacks and that has held steady over the years," Tim says. "We've also seen an increase in customer retention in the three years we've been using TURFLON."

And using TURFLON has one more advantage, Tim adds. It's the reason he's been able to reduce callbacks and cancellations: "My customers are happier."

Isn't it time you moved up to a better herbicide for better weed control? Call us to find out more. 1-800-352-6776.

Move up to TURFLON



*Trademark of The Dow Chemical Company

Circle 7 on reader service card

Focus on Trees

PLANT ACTIVISTS DENOUNCE IMPROPER PRUNING

IMPROPER TREE pruners and tree toppers, beware.

You could end up on the wrong side of a protest led by tree lover Cass Turnbull and her group Plant Amnesty.

Founded in 1987 by this vocal 11-year-veteran of the Seattle Parks and Recreation Department, the group's mission is to "end the senseless torture and mutilation of trees and shrubs."

To accomplish that the group uses some attention getting tactics:

- The Plant Amnesty Booth travels to home, garden and trade shows. It has large photos of improperly pruned trees, mal-pruned branch specimens and an actual dead-topped tree with a placard on it that reads, "Killed by Homeowner."

- A slide show of pruning horrors that is popular with garden clubs and horticulture classes. It amuses while educating on identifying the three major areas of improper pruning: topping, stripping and inappropriate shearing.

Education with a little humor thrown in is the Turnbull trademark.

"Seeing us travel to shows and fairs with the dead tree is kind of funny," she said. "Because it is such an extreme case, people's first reaction is to laugh and wonder how anybody could be foolish enough to do such a thing. Well, that just opens the doors for us to show them how to do it properly. We can point at the tree and say 'Instead of butchering it, you need to...'"

Nor does she shy away from media attention.

"You know you can have someone read a proper pruning pamphlet 10 times and it doesn't sink in," she said. "But as soon as they see us on the evening news or in a newspaper column, we suddenly have a legitimate message and they seek out more information."

The evening news and local newspapers is



Plant activists hope organized protests will stop tree butchering.

where she was earlier this year when she organized the "Boyer Street Protest."

"Seven huge London Plane trees at a heavily-trafficked intersection were mutilated because a tree service company that was pruning for an adjacent property owner ignored the city's pruning guidelines," she said. "We organized a public informational protest during rush hour when there was a lot of traffic."

**Plant Amnesty
petitioned the
city to remove
the trees so residents
couldn't use
them as
an example for
their pruning.**

A 15-foot "Mutilated Trees" banner hung between two of the trees.

"Our intent was to draw attention to this desecration," she said. "That's why we chose rush hour to do it. The support from passers-by was tremendous."

Because the trees were on a right of way, Plant Amnesty even petitioned the city to remove the trees completely so people would not end up using them as an example of how to prune.

"Bad pruning habits really are contagious," she said. "We didn't want these trees to serve as an example for some else's pruning."

The city did not remove the trees, but Turnbull called the protest a success because it created a bit of a stir and gave people an example of what not to do.

Plant Amnesty members—called Plant Activists—number 500 in 27 states. They range from backyard gardeners to professional arborists. (In fact, it was a tree service who donated the banner for the protest.) The group even has members in several foreign countries with Plant Activists from Ecuador and the West Indies being the latest to join the flock.

When learning how to prune, it's helpful to watch a professional in action, Turnbull said. Local arboretums, county extension services and horticulture societies offer pruning classes.

In addition, numerous books are available on the topic.

If it seems customers are asking you to prune too much or too often, Turnbull suggested recommending alternate arrangements. Adding lower-story plants for contrast, enlarging beds and moving or removing overcrowded trees or shrubs can provide a longer lasting and less damaging solution.

For more information on pruning or joining Plant Amnesty, write to the group at 906 N.W. 87th St., Seattle, Wash. 98117; 206/783-9813. Membership is \$15 per year.

When Rick Steinau moved up
to the performance of
TURFLON, his customers
gave him a big thumbs-up.



"TURFLON* herbicides give us about 95% control of problem weeds. The standard three-way products give control in the 80-85% range."—

Rick Steinau, president
Greenlon Lawn Care Services
Cincinnati, OH

In the lawn care business, you know that exceptional performance reduces callbacks and cancellations—and costs less in the long run.

Less callbacks.

"We started using TURFLON three years ago," explains Rick Steinau. "TURFLON simply does a better job on the hard-to-control weeds like spurge, oxalis, ground ivy and wild violets. These are the problem weeds that customers usually complain about most. With TURFLON, we've seen a 25% reduction in weed-related callbacks and a 15% drop in cancellations."

More savings.

"We are definitely saving money by using a premium herbicide," continues Rick. "We know that a treatment with TURFLON costs about 50¢ more per lawn than a standard three-way herbicide, but we actually realize a 30% savings in our herbicide program."

Rick Steinau knows that the performance of TURFLON herbicide has made a big, big difference in his business. Just think what it can do for yours. Call us to find out more.

1-800-352-6776.

Move up to TURFLON



*Trademark of The Dow Chemical Company

Circle 4 on reader service card

Lawn & Landscape
MAINTENANCE

*Inside
the Green
Industry
Expo*

WILL STRENGTH IN NUMBERS PREVAIL?

JOE SMITH FROM Smith Landscaping was new at running a maintenance firm. He had been with the business for several years, but was unexpectedly thrown into the role of leading the firm, a function that made him uncomfortable.

Searching for answers, Smith picked up the phone and dialed the well publicized number to the national association office representing the green industry. After discussing his options with several division representatives, Smith decided to join a few divisions for a relatively small charge per year.

He was soon on his way to gaining business knowledge and networking with peers from across the country.

This scenario isn't out of the realm of possibility. Cooperation among green industry associations has taken form through state coalitions, environmental councils and through the creation of the Public Pesticide Policy Foundation — a now nearly defunct organization.

More recently, the Chemical Specialties Manufacturers Association formed a Commercial and Residential Services Division to represent companies providing products and services for such markets as lawn care and pest control. The division purports to be particularly strong at the national level.

So what's with all these associa-

tions? Are their interests divergent or can they mesh?

Various mergers to benefit members, suppliers and distributors have been debated for more than a decade — mostly behind the scenes — but too many agendas and specialized goals have brushed the notion out of the minds of the industry's leadership.

A spirit of cooperation is evident, in fact there's more harmony among associations now than ever before; still no one seems eager to cement a full-fledged relationship. Potential benefits are tremendous. One association hiring a lobbyist doesn't gain much clout, but if all those with mutual interests join together and collectively retain a lobbyist, it would have dramatic results.

Although not part of the original thought process surrounding the Green Industry Expo, sponsored by The Professional Lawn Care Association of America, the Associated Landscape Contractors of America and the Professional Grounds Management Society, the possibility of the three associations or another national organization working more closely together is not out



Professional Lawn
Care Association
of America



Professional Grounds
Management Society



National Arborists
Association



American Association of Nurserymen

of the realm of possibility, according to Jerry Faulring, PLCAA board member and one of the association's founding members.

"We're now recognizing that possibility. As the awareness level of more diverse memberships increases, so will working for their mutual interests and benefits," he said. "There's been no serious contemplation for a merger of associations or a marriage of some sort, but it's not necessarily out of the question."

In addition to extending the working relationship with PGMS and ALCA, further speculation includes a possible alliance with the National Pest Control Association.

"Identity is the central issue. That's one of the principal reasons we founded PLCAA because we didn't have an entity working for us exclusively," Faulring said. "The association is going through a significant transition, trying to find out who we are and who we serve. For the newer members, that (identity) might not be as critical because of diversification."

The American Association of Nurserymen successfully works with several organizations under its umbrella. When an industry professional joins AAN, he automatically becomes a member of one of three divisions: Wholesale Nursery Growers of America, National Landscape Association or the Garden Centers of America. The affiliation is related to each member's primary business.

Each division has its own board of directors, budget and program.

Ben Bolusky, AAN director of government affairs, said he sees a strong relationship among the divisions, presenting a united nursery/landscape front.

"We operate as one large family," Bolusky said. "On Capitol Hill, we represent ourselves as AAN, but we make it clear that we represent growers, landscape contractors and garden center retailers."

Faulring, who recently became



a member of the American Association of Nurserymen, said he was impressed with the group's representation and hoped to take some new ideas to the PLCAA board.

Ultimately, it should be up to the members of each association to determine the future of their organizations. But that apparently will have to wait.

In the meantime, the green industry will receive its first opportunity to show what can be accomplished together when the doors to the first Green Industry Expo open in Nashville.

It's been a long time in coming. In fact, a number of people predict that if it's a success, the next step of cooperation will be on the educational level.

PLCAA, ALCA and PGMS have joined forces to offer the turf industry's largest non-golf trade show to date; an exhibition featuring more than 250 exhibitors and a crowd anticipated to reach 2,000.

The three associations — totaling nearly 4,000 members — have agreed to a two-year trial relationship, one which undoubtedly will bring changes in finances, jurisdiction and general logistics before it reaches even its second show set for Tampa, Fla., in 1991.

Exhibitor demands for more trade show traffic were largely responsible for the merger.

When the contract was first signed in the fall of 1989, PLCAA was named show management handling all details of the trade

Illustration:
Bob Novak

show, including sales of booth space. For that, PLCAA receives a \$75,000 fee, and answers to a nine-member board — three representatives from each of the associations.

Remaining show funds are split equally among the three associations.

Early reports of the groups' opportunistic unification are respectable, but are subject to further contemplation when final reviews come in, including show management.

"A year ago, we kind of thought we were buying Jim Brooks; we knew his work. Nobody knows where PLCAA stands now," said Allan Shulder, executive director of PGMS.

To the same end, Terry Peters was executive director of ALCA when the merger was put through. Now Debra Dennis is at the helm.

"I think the current leadership (ALCA and PLCAA) is all for it, but we don't know how solid it is. We'll just have to wait for the results," Shulder said.

Brooks recently resigned after nearly eight years at PLCAA.

Ann McClure, new executive vice president of PLCAA said the advantages of working together are just now coming to fruition.

"The time is right. I've spoken with several other executive directors informally, and there seems to be a unified feeling that there's a lot we can do together. There's no doubt about it," she said.

THE PATH TO GIE. The show's concept goes way back; the subject of many hallway discussions between and among Ron Kujawa, past president of ALCA; Jim Brooks, former executive vice president of PLCAA; Shulder; Bob Brophy, manager, lawn care sales for Cushman; Dave Fuller, former director for PLCAA; and Terry Peters, former executive director of ALCA.

No matter who takes credit for it, the seed has long been planted for this show.

Kujawa said he found the idea attractive 10 years ago when he attended a landscape contracting exposition in which a number of industries had gotten together for the sake of a joint show. He didn't see why the Green Industry — ALCA, PLCAA, PGMS, NSTC, etc. — couldn't do the same thing.

"Special interests are important, but the technical aspects of

the green industry are very generic," Kujawa said. "We're all dealing with the same vendors. I decided to bide my time and wait and see."

Back in 1986 was the start. ALCA and PGMS joined together for the first Green Team show in Milwaukee, Wis. The show had 100 exhibitors in its first year and lots of energy, but momentum soon fell and organizers struggled not to lose site of what they perceived to be a good thing.

Brooks attended the Milwaukee show, but other than some mild discussion, the issue remained on the back burner.

By then, interest in a truly national show began to build from a variety of forces: association leaders, vendors and the trade press. Previous attempts such as the Pro Show — a highly promoted show which didn't see its second year because its intentions were wrong, according to Kujawa — failed.

"(GIE) should have happened a long time ago. But we continued to refine and change what had to be changed," Kujawa said. "If it was only monetary, it wouldn't work. That's why the Pro Show didn't work."

Shulder gives credit to Fuller for reviving efforts for the joint show in Orlando, site of the third Green Team conference. A member of PLCAA, he visited with the ALCA and PGMS boards and soon began working in earn-

**It behooves
other small groups
to come together;
bigger is better
and serves all
of us.**

est with Kujawa and Earl Wilson from PGMS, among others, to put the GIE show in place.

But the show didn't come together without controversy.

"Part of the problem is identity," Shulder said. "We cross every line imaginable, and some of our members are also members of

PLCAA and ALCA. But we didn't perceive it as a problem, that's one reason why we were pushing so hard."

Although a backer of GIE, Kujawa said, it's important to retain each association's special interests in education, camaraderie and networking, while convening collectively for a trade show.

"If we put aside other things and work closely on increasing attendance, everybody's a winner," he said. "It behooves other small groups of people to come together; bigger and better serves all of us."

It will take both years of the current two-year GIE agreement to see where the show is headed, but, Shulder said, he already sees a lack of interest from the nursery and irrigation suppliers.

"We're finding this year, that the nursery and irrigation people won't support the merger. I've talked with some of them who exhibited at past Green Team shows, but they don't know," he said. "Quite frankly, if this show is going to grow, we'll need their support. Jim's (Brooks) done a good job with the iron and chemical people, but we need irrigation and nursery to grow. ALCA and PGMS are going to have to work to this end."

Shulder said he's not talking about a tremendous amount of past support, nevertheless, it was important.

"It's a new concept, there's an awful lot of skeptics out there," he added. "I personally don't see how we can miss."

Despite his enthusiasm, Shulder said, he's disappointed in his members' lack of support. Low interest can be somewhat attributed to federal spending cuts since 40 percent of PGMS' members work with the government. Travel freezes have had a devastating effect, he said.

FUTURE MERGERS? Shulder hopes the spirit of cooperation between PGMS, ALCA and PLCAA can run deeper than the trade show, but doesn't think it will lead to a merger of one or more national associations.

"Our segment of the industry is so fragmented, it would cause too much of an identity crisis. We're more concerned about our own associations and working to provide our members with answers. Members don't want that

diluted," he said. "I think it's a viable idea. The turf industry (turfgrass associations) have talked quite a bit about it."

Shulder added that associations are still seen as centers of power or prestige.

"If we were to create one large national association, 75 percent of the members of all of the groups would never join. They feel it would be diluting their own segment of the industry," he said. "You take my membership for example, they don't care about clout in D.C. PLCAA is very involved in environmental issues, but our members feel like we're environmentalists."

Rick Steinau, president of PLCAA, said a merger of some sort is a good idea, but discussion, if any, would probably wait until PLCAA is on its feet and can better address issues of its own members.

"Personally, I don't think we should work so hard to survive, but instead look to other alternatives," he said. "It doesn't mean giving up your identity, but coming together for mutual interests."

Kujawa said he's opposed to the idea of ALCA merging with another association representing the green industry.

"It's a very remote possibility in any shape or form. We never had any intent to meld into a super association. It would be counter-productive to eliminate special interests," he said. "Large organizations are non-responsive. I'm personally against something like that. An association that's close to it's membership is the best for its members."

Kujawa said he'd rather see more emphasis placed on developing the political clout of coalitions. For example, the Landscape Environmental Resource Council — LERC — gets regular attendance from the president and executive director of nine or 10 related associations.

"Gestation is beginning to happen," he said. "This is significant because without special interests, we have no interests."

Bob Felix, executive director of the National Arborist Association, said there's already substantial networking among association leadership.

"Through meetings in D.C., and through an exchange of newsletters, we communicate," he said. "We marshal resources on

a need basis."

Through a premium, NAA also has direct access to the AAN computer for government affairs.

Felix said he's not willing to sacrifice identity for a few bucks of overhead.

"Those who vigorously pursue the interests of their members will always do so and do it well. Those who don't already, wouldn't do it right if they merged with someone else," he said. "If I need help, I go to them. We're active and they listen. OSHA works with us."

The NAA is confident it's serving the interests of its members and recently started its own tree industry magazine and trade show.

Although she'd like cooperation to continue, McClure said, now is not the time to initiate a merger among similar associations.

"I don't see that happening right now. Making one association wouldn't be solving many problems," she said. "We're in a constant state of flux; what solves the problems now won't necessarily solve them in the future. But we remain sensitive to the alternatives."

"If we can same time and money, there's no sense in reinventing the wheel. We don't all share the same problems, however, we have special concerns of our own."

One problem is transitory leadership. If legislation is not a big issue on a particular director's agenda, it's not pushed for.

"It should be an ongoing goal, however. It's an obvious area for people to cooperate," Kujawa said. "We want the government to understand if they want the true, objective truth — information away from emotionalism and sensationalism — they have to put credence in what we say. We're working toward it, but it isn't easy."

Faulring agrees that national associations need federal monitoring capacity. "There's so many things going on in D.C. we don't even know about. Someone needs to be there."

SMALLER POOL? Shulder disputes the notion that consolidation in the green industry will increasingly force associations to compete for members.

"We haven't even scratched the

surface. The economy, regulations and better educated people all help association membership," he said. "Normally speaking, membership increases during a slow economy because they start

"We certainly need to take a look from within. Numbers bring you clout, as does being better educated."

seeking help. Membership is going to improve for everyone in the next year."

National association membership has been volatile. Depending on who you talk with, it's been stable, dropping or slightly increasing. Some approximate

membership figures: ALCA, 1200; PLCAA, 1000; PGMS, 1700; NAA, 1100; American Society of Landscape Architects, 10,000; GCSAA, 10,000; and NPCA, 2500.

Many association directors said they would be satisfied if people in the industry would just join and support some organization whether it's local, state or national. "One of these days we'll promote national membership for any or all of the associations," Shulder said.

Just as the GIE show was tossed and kicked about before becoming reality, talk about associations coming together will surface and fade with changes in leadership.

"We certainly need to take a look from within," McClure said. "Numbers bring you clout, as does being better educated about the issues and being respected for the way you handle the issues. We're always hoping to take a more educated stance." — *Cindy Code*

The author is Editor of Lawn and Landscape Maintenance magazine.

NEW SPECIALTY COALITION 'RISE' TO THE OCCASION

THE SPECIALTY pesticide industry will soon receive a strong promotional and professional boost from a new organization called RISE — Responsible Industry for a Sound Environment.

Still in its infancy, the group was initiated by eight specialty chemical suppliers who want to develop a national support base to communicate the environmental, health and safety benefits of the proper use of pesticides.

For instance, when products are being questioned for use in a particular locality, RISE would help form a coalition to address the problem. "We'll help pull people together with the right leadership and talk with concerned people. If changes need to be made, we'll find out what's happening and address those changes," said Bill Culpepper, DowElanco commercial director.

The steering committee includes: DowElanco, Ciba-Geigy, Mobay, Monsanto, ICI, The Andersons, Lebanon and O.M. Scott & Sons.

RISE also hopes to address education and training needs. Although products are predominantly professionally applied, ongoing training — not specific to any one product — is needed, Culpepper said. A training program which is universally accepted is one possibility.



The group recognizes that many industry representatives are prepared to address and defend key issues, and wants to stimulate the resources of the specialty pesticide industry to address issues from a position of strength.

RISE wants to proactively educate local and university people, the EPA, USDA, OSHA and others who play a role in the use of pesticides. Culpepper said members would be prepared to discuss the benefits of pesticides and well-managed turf rather than just the hazards.

RISE has been in the works for several years, and the steering committee is now ready to address membership.

An initial membership drive will be presented to attendees at the Green Industry Expo in Nashville, Tenn.; the National Pest Control Association in Miami, Fla., and possibly those attending the Golf Course Superintendents Association of America.

RISE was patterned after the National Agriculture Chemipicals Association and will initially share facilities in Washington, D.C.

Manufacturers, formulators, distributors, associations, universities, all end-users and trade media are among those who fall within the interests of RISE.

ACCURATE ESTIMATING, PRICING STEMS FROM A SOLID BUDGET

Proper estimating is actually creating budgets for labor, supplies, materials and equipment.

THE ORIGINAL intent of this article was to compare and contrast estimating systems used by successful landscape maintenance firms around the country. However, after talking with a number of representative companies, it became clear that there is a standard approach.

It appears that estimating landscape maintenance services is a logical process closely related to the company's budget, and focused on an accurate forecast of labor hours. Labor is marked up to cover overhead costs and produce budgeted profitability.

Job supplies, materials and equipment must be accounted for in the estimate, but are secondary to the cost of labor. Knowing and applying budgeting skills is the key to successful estimates and prices.

BUDGETING AND THE BUDGET. The company's budget is the foundation for knowing how to estimate and price maintenance services, and includes three main components: the cost to produce the service, the overhead required to support the producing of the service and the profit which justifies the production of the service.

A good job estimate will accurately predict the "direct costs" involved in producing landscape maintenance services. A good

Monthly variations, turfgrass cutting heights for instance, need to be taken into consideration when budgeting.

contract price will cover the costs of producing the service as well as contributing to the company's overhead and profit commitments.

The budget is a statement of the company's financial commitments to production, overhead and profit.

It is assumed that each maintenance job can pay for the costs related to production. But each job should also provide its fair share of revenues to cover overhead costs and budgeted pro-

fitability. When this doesn't happen, other jobs are forced to carry unrealistic financial responsibilities.

Establishing a company budget can be a difficult process. Help provided by consultants, seminars and especially peers in the industry can be useful. The effective use of the budgeting process is a learned skill requiring knowledge, guidance and practice.

Budgeting is the process of combining history with current knowledge to arrive at accurate

predictions of what will happen. "Last year we spent \$10,000 to maintain 10 trucks. We are adding one more truck. This year our budget needs to be \$11,000." This marriage of the past to the present is the essence of budgeting for the future.

The budgeting process is critical to estimating and pricing landscape maintenance services. Good estimating is really the establishing of job budgets for labor, supplies, materials and equipment use. The estimate estab-



SAMPLE: JOB BUDGETING

FUNCTIONS	MOW	EDGE	PRUNE	TURF FERT	LITTER PU	TOTAL
April	30	10		5	13	58
May	40	10	20		13	83
June	40	10		5	13	68
July	40	10	20		13	83
August	40	10		5	13	68
September	40	10			13	63
October	20	10		5	13	48
November					13	13
December			20		13	33
January					13	13
February					13	13
March					13	13
Total	250	70	60	20	156	556
Labor Rate	7	7	8	8	7	7.14
Total Labor	1750	490	480	160	1092	3972
Labor & Burden	1925	539	528	176	1201	397
Overhead						
Contribution	3850	1078	1056	352	2402	4369
Profit	4278	1198	1173	391	2669	971
Material Costs	125	70		400	104	699
Material + Mark-up				200		200
Job Equipment						
Costs	2500	210	180	40		2930
Equipment						
Mark-up						0
Revenue (Price)	6903	1478	1353	1031	2773	13538

Note: All numbers are for illustration only.

lishes the cost of producing the service; a cost which is then marked up to provide revenues to cover overhead and profit.

ESTIMATING. Estimating is the process of applying budgeting skills to a particular job in order to predict the costs of labor, supplies, materials and equipment.

Successful landscape maintenance companies endeavor to make the estimating process as objective as possible. Turf and bed areas are measured carefully, trees and shrubs are counted individually and walks and drives are measured carefully for edging requirements.

This is not to say that experienced professionals don't, or shouldn't estimate apart from objective measurements. Some people have a "gift" for estimating and "gut" feelings are often valid. But these "gifts" and "guts" are not easily passed on to others.

Most companies measure and count in the interest of standardizing the estimating process. It's for this reason that "guesstimating" isn't allowed.

When the objective data has been gathered, known company factors are applied. These known factors are gleaned from the company's historical experiences. For instance, 10,000 square feet of turf on even grade takes 20 minutes to mow, but 10,000 square feet of turf on moderate hills requires 40 minutes.

Known factors allow estimators to modify measurements with actual company experiences. Virtually every company interviewed for this article indicated that they used difficulty factors to modify objective data. Once again, the present is combined with the past to produce a prediction for the future.

The modified objective data is now interfaced with job functions. Every job can be subdivided in-

to specific work functions that are normally determined by the contract specifications. These functions are usually identified as mowing, edging, pruning, etc. It's important to account for all job functions that will require the use of labor. The object is to arrive at a "time per function" figure. Once these figures are established, the job labor budget can be developed.

JOB LABOR BUDGETS. Measurements, factored and functions are the building blocks of the job labor budget, and well-conceived labor budgets provide the basis for effective job performance, customer satisfaction and financial success. A job budgeted to meet and even exceed customer expectations is nice, But a job that does all this and produces adequate revenue for overhead and profit is even better.

One way to proceed toward this end is to budget labor hours using the "time per function" figures as the basis for establishing both monthly and annual job labor budgets:

Function = Mow Turf
Measure = One Acre
Factor = 3 Hours/Cut

FUNCTIONS

1. Mowing 25 times
2. Edging 14 times
3. Pruning 3 times
4. Turf Fert 4 times
5. Litter Pick-up 52 times

FACTORS

- 10 Hrs/Mowing
- 5 Hrs/Edging
- 20 Hrs/Pruning
- 5 Hrs/Fert
- 3 Hrs/Pick-up

JOB MATERIALS

1. Mowing Supplies
2. Edger Blades
3. Bags Fert
4. Trash Bags

MARK-UP

- \$5/Mowing
- \$5/Edging
- 50 at \$8/Bag
- \$2/Pick-up

EQUIPMENT

1. Mower use
2. Edger use
3. Spreader use
4. Pruning Equipment use

Functions, job materials and equipment and the number of time job is repeated is necessary to track costs.

Time/Function = 9 Hours
Monthly Budget = 13 Hours
 (4.3 Cuts x 3 Hours)
Annual Budget = 91 Hours
 (13 Hours x 7 Months)
Number of Cuts = 30 cuts
 (4.3 Cuts x 7 Months)

This approach can be modified to reflect monthly variations that are determined by geography and weather. For instance, bluegrass grows at a faster rate in May than it does in September. It's important to take these monthly variations into account when budgeting for labor:

MONTH	HRS MONTH	CUTS	HRS CUT
April	5	2.5	2.0
May	17	4.3	4.0
June	17	4.3	4.0
July	15	4.3	3.5
August	13	4.3	3.0
Sept.	12	4.3	2.75
October	7	3.0	2.33
ANNUAL TOTAL	86 Hours	27.0 Cuts	

Note: The estimate can be both accurate and more competitive.

TRACKING YOUR COMPANY BUDGET

By budgeting carefully, both customer and company benefit. The earlier approach indicated that this function would require 90 labor hours.

The main objective of the labor budget is to provide critical information regarding job costs. But an important by-product is that the estimating process produces a labor budget for field personnel. Field production crews are more likely to achieve job labor budgets if they know what they are: the job labor budget provides key information for both prices and producers.

JOB SUPPLIES AND MATERIALS. It's important to keep job supplies and materials like fertilizer and chemicals in proper perspective. Their cost as a percentage of labor will normally be minor, but they must be accounted for in the estimate since they are used on a specific job and are not considered overhead.

If the use of supplies and materials can be attributed to a particular job, they probably should be charged to that job. Bags of fertilizer, gallons of chemicals and edger blades can be assigned to certain jobs. Mower blades and tires cannot be assigned to a job and should be considered as overhead items.

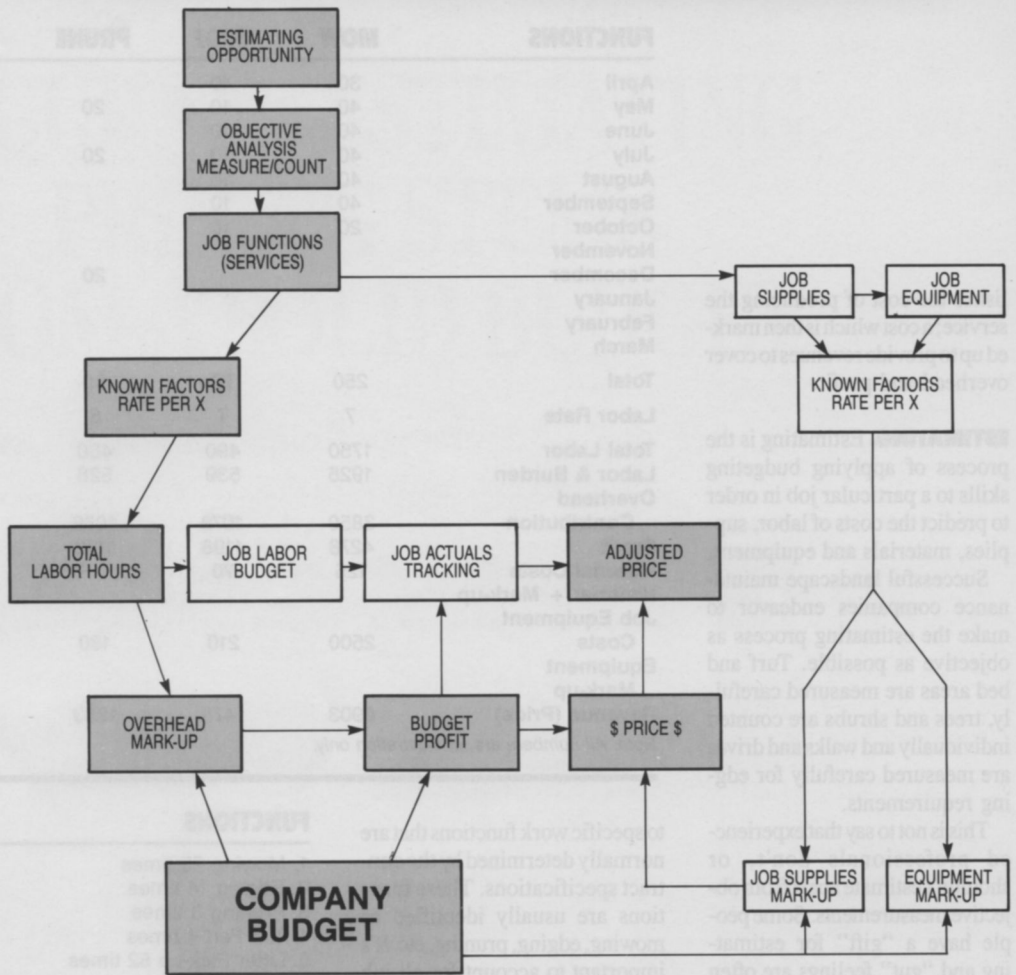
Most companies deal with supplies and materials in relation to known square footage measurements — X (dollars) per 1,000 square feet of turf. Other companies attach a cost of supplies to each particular function.

Equipment costs should be recovered on each job. Companies are divided on how this is done. Some apply known unit costs for each function, e.g.:

Function: Mowing (36" Mower)
Total Hours: 75 per Season
Hourly Rate: \$10/Hour
Equipment Cost: \$750

The other method is to recover equipment costs on the overhead mark-up rate. When equipment is accurately accounted for in the budget, the mark-up rate can recover these costs.

Respected industry consultant, Frank Ross, Ross-Payne & Associates of Chicago, Ill., said that it's important for companies to recover seven equipment costs: Depreciation (ownership), replacement, major overhaul, preventive maintenance, insurance,



fuel and shop overhead — mechanics, supplies, utilities.

"It's best to recover these equipment costs on the job rather than as an overhead item," Ross said. "The company's budget should indicate what equipment costs will be. The individual job should pay its share of company equipment costs."

BUDGETING FOR PRICE AND PROFIT.

A good working knowledge of the budgeting process leads to accurate estimating. Good estimates allow companies to operate from well-conceived job budgets, so it's important to focus on budgeting for job costs from the start. Now it's time to price the service and plan for profit.

The company's budget determines the mark-up. Example: Company XYZ is budgeted to spend \$100,000 to produce its services. The budget anticipates overhead to be \$100,000. The company budget indicates that job

costs need to be marked up by 100 percent in order to cover overhead commitments. The budget will also address profitability, but this is done after all costs are covered.

Since labor is the largest cost, it's important to focus on the rate at which it is marked up to cover overhead. According to Ross, labor costs account for between 25 percent to 35 percent of landscape maintenance revenues. And, since the cost of labor may vary from one job function to another, it is important to mark-up each function individually rather than as a whole.

Understanding the relationship between company functions and how they relate to your budget.

Many companies use established labor rates for each function. These rates are designed to cover all job and overhead costs and to provide the necessary profit as well. These rates range from \$18 to \$26 per hour depending on location and job function.

The important thing to remember is that labor is marked up to provide revenue for overhead and profit. If the cost of labor rises,

XYZ COMPANY

Function	= Mowing	Function	= Irrigation Management
Labor Cost	= \$7/Hour	Labor Cost	= \$10/Hour
Mark-up	= 100%	Mark-up	= 100%
Total	= \$14	Total	= \$20

the price will rise accordingly. The cost of labor is the key factor.

PRICING. The cost of supplies, materials and equipment allocated to a specific job needs to be recovered. That is not to say that they need to be marked up. The important thing is to account for their cost to the company in the price charged for a particular job. Whether they are marked up or not will be an individual company decision.

Landscape maintenance companies will derive the majority of their revenues from the mark-up on labor in any case. Ross recommended that companies develop a "dual overhead mark-up system." For example, XYZ Company may mark-up labor by 100 percent and all other job costs at a 50 percent rate.

The methodology for arriving at appropriate mark-up rates is beyond the scope of this article. The bottom line is that when the cost to produce the service is marked up, company overhead must be completely addressed — Cost to Produce Service x

Markup Rate = Break-Even Point.

When all job costs have been marked up to cover all company overhead commitments we have reached the break-even point. But what about profit? According to Ross, the average net profit for landscape maintenance firms is less than 3 percent. However, 25 percent of the companies he analyzed in 1988 consistently achieved a 10 percent or higher net profit. Companies that make a 10 percent net know how to plan, price and budget for profit.

When planning for profit it's important to divide rather than multiply as in the illustration.

MULTIPLY FOR PROFIT		DIVIDE FOR PROFIT	
Breakeven Price	\$100,000	\$100,000	Breakeven Price
Multiply for Desired Profit	x 10%	÷ .9	Divide for Desired Profit
Job Price	\$110,000	\$111,111	Job Price
Net Profit	10,000	11,111	Net Profit
Net Profit as % of Total	9.099%	10%	

To determine the correct dividing number, subtract the desired profit margin from 100%:

$$100\% - 10\% = .90$$

$$100\% - 5\% = .95$$

$$100\% - 7.5\% = .925$$

Profitability is essential for financial stability and to fuel growth when necessary.

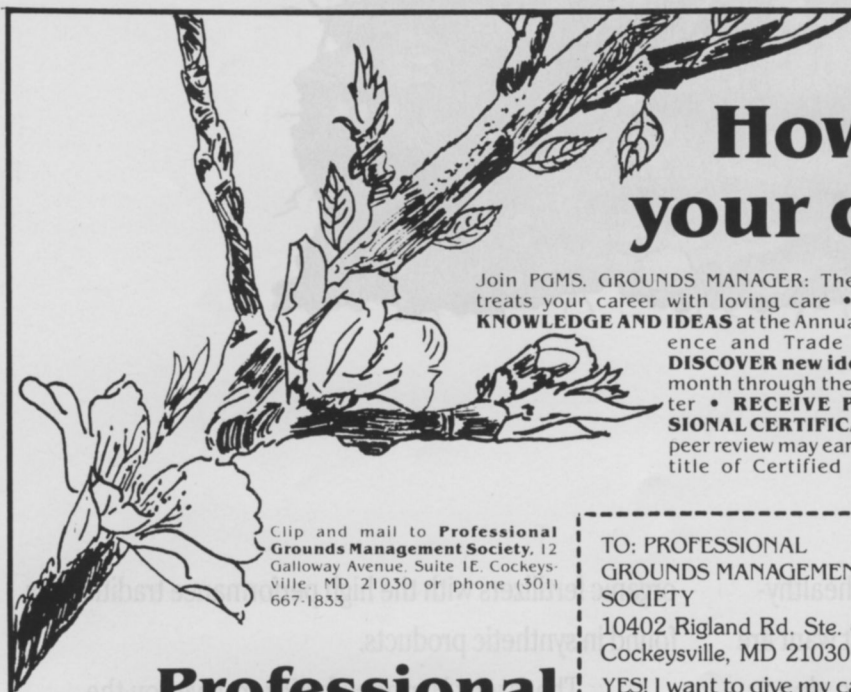
An estimate is a prediction of what should happen. It's important to track each job for what did happen. Most companies track job performance on a weekly, monthly and yearly basis. This commitment to job tracking is important for two reasons. Field personnel want to know how their

job performance compares to the job budget (estimate), and the job price can only be adjusted up or down when actual results are compared to original estimates.

BUDGETING/ESTIMATING/PRICING CYCLE. Financially responsible estimating is grounded upon a firm knowledge and understanding of company overhead and profit commitments.

Good job estimates are based on objective measurements and established work-function factors. Labor is the major component (cost) of the estimate and is marked up to cover known company overhead costs. Job labor budgets are produced from accurate estimates. As such, jobs should be tracked weekly, monthly and yearly in order to compare actual performance to estimated performance. — Tom Garber ■

The author is president of Colorado Landscape Enterprises, Arvada, Colo., and is ALCA's vice president of finance and treasurer of ALCC.



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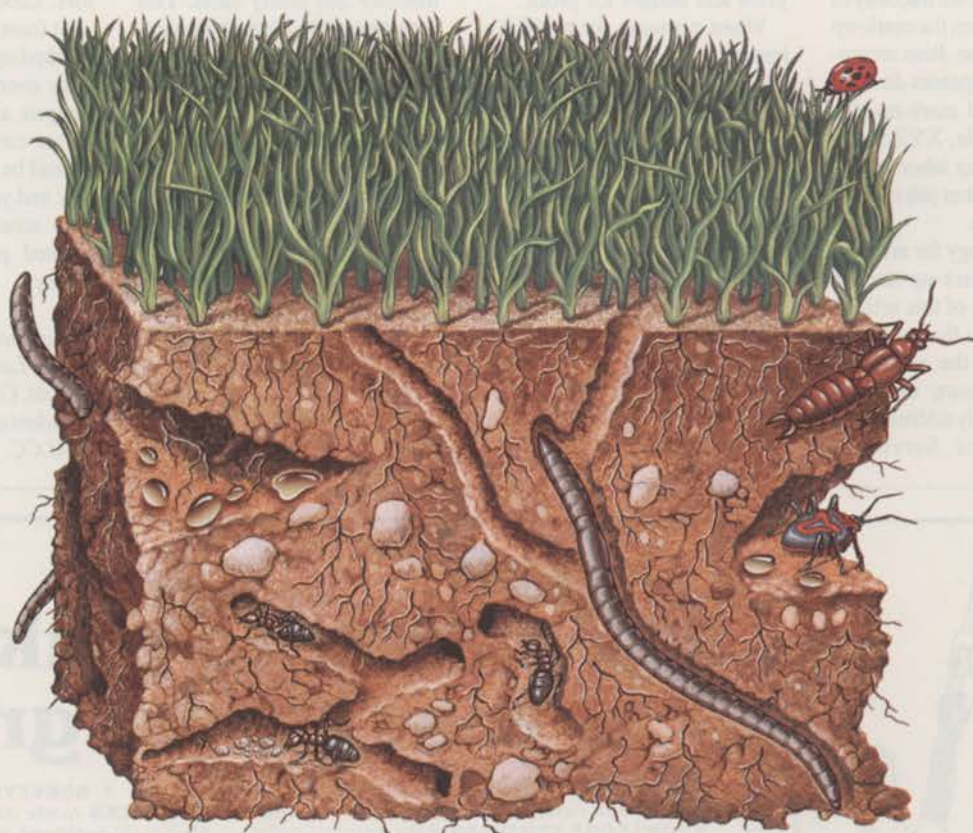
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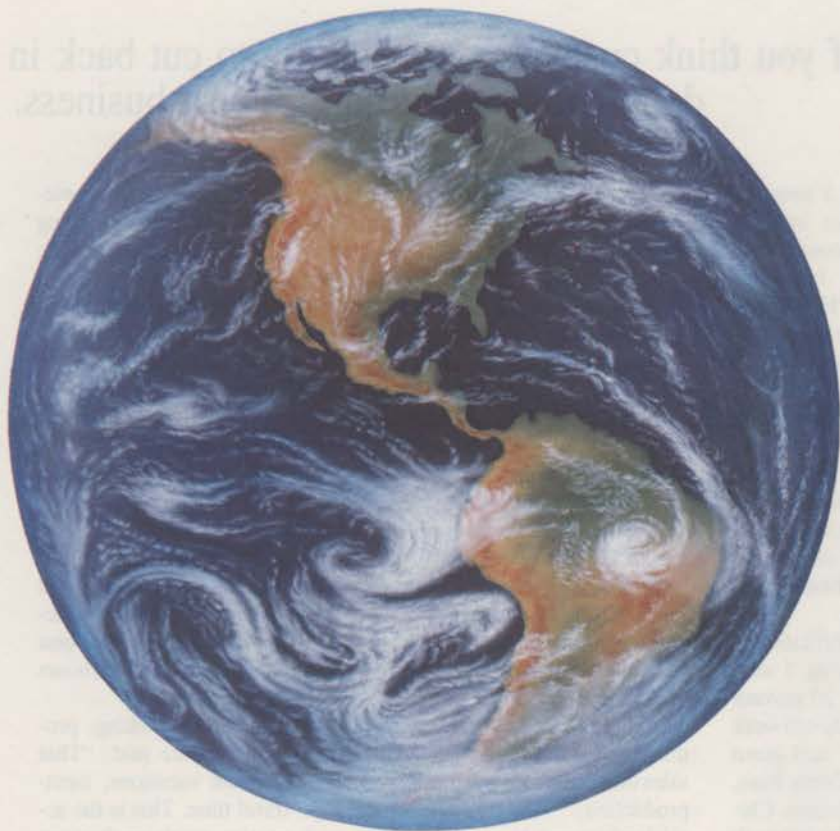
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SETTING SALES GOALS

If you think customers are starting to cut back in services don't cut prices, drum up new business.

YOU'VE PROBABLY been at a trade show or other industry meeting and heard competitors talking about their incredible business prowess: "Had to add several crews just to cover new business." "Increased sales by 30 percent over last year" Or maybe you've heard the best of them all, "Had so much business this year we were turning new customers away when they called."

If you haven't done so already, this is the best time of the year to determine your firm's sales needs for next year.

"It's a much more difficult process than simply saying 'I want to increase sales by 20 percent next year, so everybody will work 20 percent harder,'" said green industry consultant Frank Ross, Ross-Payne and Associates, Chicago, Ill. "A simplistic view such

as that will only lead to trouble and probably less real profit than the year before."

Since it's not a simple process, Ross has a definite opinion about those who attempt to simplify it.

"Rules of thumb are dangerous," he said. "Typically people who use them don't understand them. If you don't understand them, you certainly don't know what you're trying to achieve."

Anyone who asks Ross about a plan for increasing sales best be prepared for a lot of note taking, and a crash course in financial management.

The practice most people have to become accustomed with, according to Ross, is to alter their thinking from sales dollars and sales units to thinking in terms of production.

"Look at man-hours and crew

mixes, look at the amount of revenue coming in and the cost going out," he said. "If you can calculate revenues per man-hour, then you've really got something to work from."

With that information, a company's expected sales goals can be divided by current revenues per man-hour to find an anticipated number of man-hours needed to fulfill that sales goal.

Then the final step in this process is determining how many laborers will be needed to fill those anticipated man-hours. According to Ross, that's done best by estimating 1,600 to 1,700 hours a year per worker.

"That's actual working, productive hours," he said. "That doesn't count vacations, meetings, travel time. This is the actual on-site work each crew

member accomplishes in a year's time."

This, believe it or not, is Ross's easier, less exact method for determining sales goals. It's less exact because the sales figure is chosen randomly and the other variables determine whether it's feasible.

The longer, more precise method for planning future growth starts at the bottom — with profits — and moves to the top.

"For some reason people in this industry seem to forget why they went into business — to make money," Ross said. "Too many firms often seem as though they're apologizing for having higher prices than the fly-by-night operations. If you do that you're sunk."

STARTING FROM THE BOTTOM Profit should be thought of this way: One-third goes to pay-

SOUND FISCAL MANAGEMENT: THE ROAD TO INCREASED SALES GROWTH

1. Determine profits from last year.

Don't think of profit as what is left over. It should be $\frac{1}{3}$ debt retirement, $\frac{1}{3}$ growth and development and $\frac{1}{3}$ for taxes.

2. Walk through overhead structure.

Figure out expenses for the coming year on each account. This is sometimes referred to as a company's lifestyle. Profits + Overhead = Gross Margin.

3. Determine the amount of business you need to generate to meet your Gross Margin.

Too many people just randomly pick a number — I want to grow 20 percent this year without having any idea of what that percentage represents in costs to the company. Increased revenue does not mean increased profit.

4. Determine carryover clients from last year.

List those jobs and account for every cost to service each account - contact cost - labor hours - equipment costs - labor costs - materials costs - subcontracting costs - specific incidental costs = Gross margin for known jobs.

5. Complete a labor budget.

Include everybody including office, clerical and support staff. A lot of people lose sight of the fact that maintenance work is really selling labor. Budget the number of hours you have to sell.

6. New Work.

Total labor hours — labor hours from known jobs = amount of new work needed to meet labor force output.

ing taxes, one-third pays debts and the last one-third pays for growth and further development.

Keeping sight of that business tenet can be especially difficult when facing a business slump or economic recession as parts of the Eastern United States are now, said John Moran, president, Alpine Tree Care, Newington, Ct.

"When you see that customers are beginning to cut back on their services, often the first reaction is wanting to drop prices slightly so they'll stay on," he said. "But that just doesn't work. The answer is drumming up more business. It usually means smaller billings per account, but not a change in the actual pricing."

Before worrying about where to turn for new business, scrutinize the overhead costs of your current business.

"Go through every account and keep track of all costs," Ross said. "Anything you spend money on should be tracked. If it's out of sight, it most definitely will be out of mind."

When the overhead has been determined, it can be added to the profits to find the gross margin.

The next step is finding how much business you need to generate to meet that gross margin. Do that by first finding how much of the coming year's work will be carry-over from the season just passed.

Literally sit down with the overall contract cost and begin subtracting job costs — labor, equipment, material, subcontracting and incidentals.

The figure you're left with is the gross margin of your known, or returning, accounts. When that is subtracted from the earlier determined gross margin, you know how much gross margin your new sales need to create.

The next step in the Ross plan is working up a labor budget to determine how many labor hours you will have available.

"Landscape maintenance really comes down to selling labor," he said. "If you budget how many labor hours you have total among all your workers and then subtract the amount needed to work the carry over jobs, you come up with the number of man-hours not already committed to assignments or the labor hours you can sell."

SEEK INPUT FROM

STAFF. Moran starts his budgeting process about two months before the fiscal year ends and gets the sales staff involved.

"We get a budget worked through figuring all our operating and labor costs," he said. "Then we sit down with each salesperson to set goals. You just can't hand them a sheet of paper stating what they should sell, especially when the economy's sliding."

Working with those who are actually out selling helps create a more realistic set of goals, he said. It also offers a chance to talk about how to reach those goals and ideas for gaining or keeping customers especially with a discretionary service.

After making some sales goals for the coming year, Moran said, the first attempt at new accounts are usually in close proximity to existing ones.

Remember to include the sales staff when determining how many new accounts you'll go after. Sit down with each salesperson to set goals rather than just handing them a sheet of paper stating what they should sell. Working with those who are actually out selling helps create a more realistic set of goals and also offers a chance to talk about how to reach those goals and ideas for gaining or keeping customers.

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"The first way we look for new business is by attempting to tighten up our routes," he said. "It, of course, brings new business without major travel time and we're already a known commodity in the area.

Moran's goal for the coming season is to keep sales at the same level they were this year.

"It's been difficult just maintaining sales from year to year," he said. "We've been able to do it, but most companies I hear are off about 10 percent to 15 percent."

While service is the keystone to a successful landscape firm, it becomes an even more crucial element during an economic recession, Moran said.

Because most of Alpine's customers are high-end residential accounts, they don't drop the service all together, but opt to make cutbacks, Moran said. They ask what is absolutely essential and what can be put off until the situation turns around.

In the business for 35 years, Marvin Gross, owner of Marvin's Gardens and Landscape Services, Sarasota, Fla., said he's learned that goals are not etched in stone.

"A lot of time and work goes into the budgeting process and setting sales goals, but you can't foresee everything," he said. "Sometimes the goals just can't be met because of the business environment. You have to be flexible enough to make adjustments six months down the line."

Individuals on the sales staff play a major part in setting goals. In meeting with their sales manager, the process is involved, Gross said.

"They really have to hash things out," he said. "They have to look at how their selling ability has gone up with their knowledge and exposure to the industry, whether they've developed a good following, rapport with customers."

While everybody realizes the importance of service to customer satisfaction and growth, Gross said, many landscape firms don't give sales people enough credit in that area.

"They're usually the first person in the company the customer encounters, so creating that good first impression is on their shoulders," he said. "Also, it's the sales person who continues to have the most contact with them. Most residential customers aren't even home when crews are

there working. They have to create a comfort level with customers."

The ideal goal is to increase sales by 10 percent every year, Gross said. For that to happen, all the pieces have to fall in place.

Ken Foley, sales manager of six for Swingle Tree Care, Denver, Colo., also stressed the importance of the salesman-customer relationship.

"People today are being hit from all sides by someone selling something," he said. "That hard sell, sell, sell approach doesn't work when you're selling a service. We have to build customer satisfaction and never betray it."

Although formulas are hard to follow, Foley's goal for his sales staff is usually a 10 percent increase per year — specifically from new customers. But that is becoming increasingly difficult as the Denver market approaches a saturation point.

Choosing the right person for sales positions has a definite effect on attracting and keeping customers.

"A sales background is not as important as being a good communicator," he said. "In fact the stereotypical salesman doesn't work out for us because he changes jobs too often. We're after stability with the sales crew so they can provide stability with customers."

Most operators agree that maintenance work is more recession-proof than construction, but as Tom Fisher of Fisher Burton Co., Wauconda, Ill., focuses more on maintenance, he's finding the budgeting and goal setting process is more exacting.

"When working with maintenance, you have to give a much closer look at the cost of repairs and the wear and tear on smaller equipment and how those costs factor into the whole budget," he said. "It has to be much more defined and broken down."

INCENTIVES. The old attitude that bonuses aren't needed because the people are already being paid a salary doesn't work anymore, Moran said. People need an incentive to work harder, especially in a tightly competitive market. — *David Westrick* ■

The author is Assistant Editor of Lawn and Landscape Maintenance magazine.

YEAR-ROUND PLANNING ELIMINATES YEAR-END CONFUSION

Keep a complete inventory and limit the number of people with access to your storage and you'll have fewer problems.

IF YOU'RE LIKE most lawn and landscape maintenance professionals, you have difficulty meeting all of the demands placed on your time. Because of that, some of the more basic chores may get pushed back to be done an-

other time.

But as basic as the storage of pesticides and other chemicals may seem — just close the bottle and put it on a shelf — specific storage plans should be made and followed throughout the year.

While fall and the end of the peak season is when most operators start thinking about storage, it needs to be a year-round effort rather than an off-season activity, said Roger Yeary, vice president of health and safety for ChemLawn Services Corp., Columbus, Ohio. In fact, the objective should be to have as little as possible in storage through the winter.

The best storage method starts with a complete and constantly updated inventory, according to Yeary.

"You never want the surprise of discovering there's something on site you didn't know about," he said. "With the climate being so negative toward all chemicals lately, a simple oversight like that could be grossly exaggerated and portrayed as you being careless or sloppy with the handling of chemicals."

Also other demands, such as the Hazard Communication Standard administered by the Occupational Safety and Health Administration, require a detailed inventory. So creating one really shouldn't be thought of as a major undertaking, but a necessity.

The objective is to use as much product through the season as possible. If an abundant amount is likely to be carried over, make

a note to adjust your ordering for the next season.

When the season is drawing to a close, it's most important to make sure that crews have a system intact for using containers and bags that have already been open.

Whenever possible, keep already-open product in front of unopened product. This will eliminate the need to combine a lot of opened containers at the end of the season, Yeary said.

COMMON SENSE. Don't fall in the trap of making storage a bigger ordeal than it need be, said Jack Kerrigan of the Ohio Cooperative Extension Service. Keep it simple and, if possible, limit the number of people with authority to enter the storage area.

Limiting those with access will reduce the chances of confusion or products getting misplaced, he said.

The regulation of lawn chemicals and their storage varies around the country. Depending where you are it could be the state agriculture department, an office within the attorney general's office or one of many other possibilities.

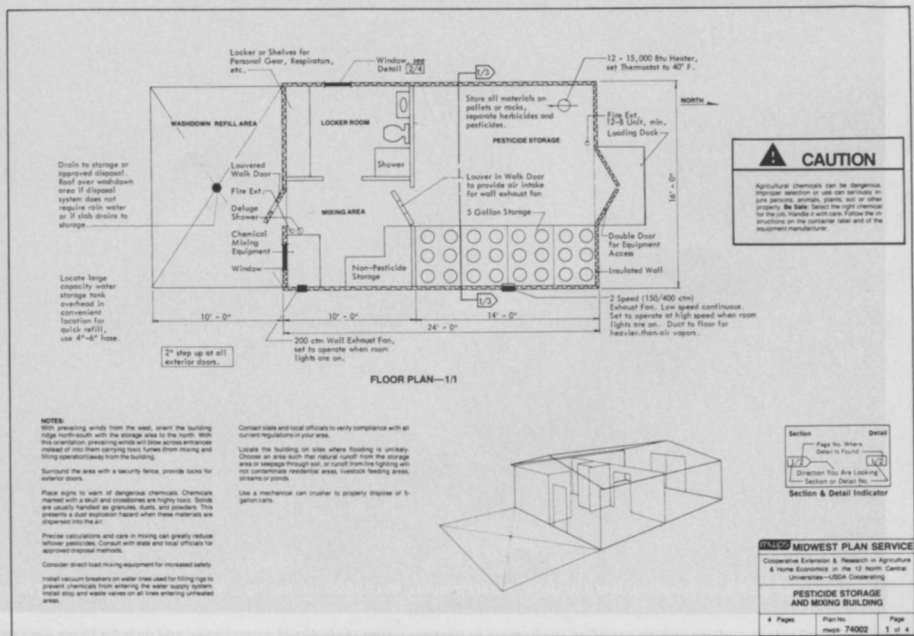
No matter what body or office is eventually regulating how you store your pesticides, one place

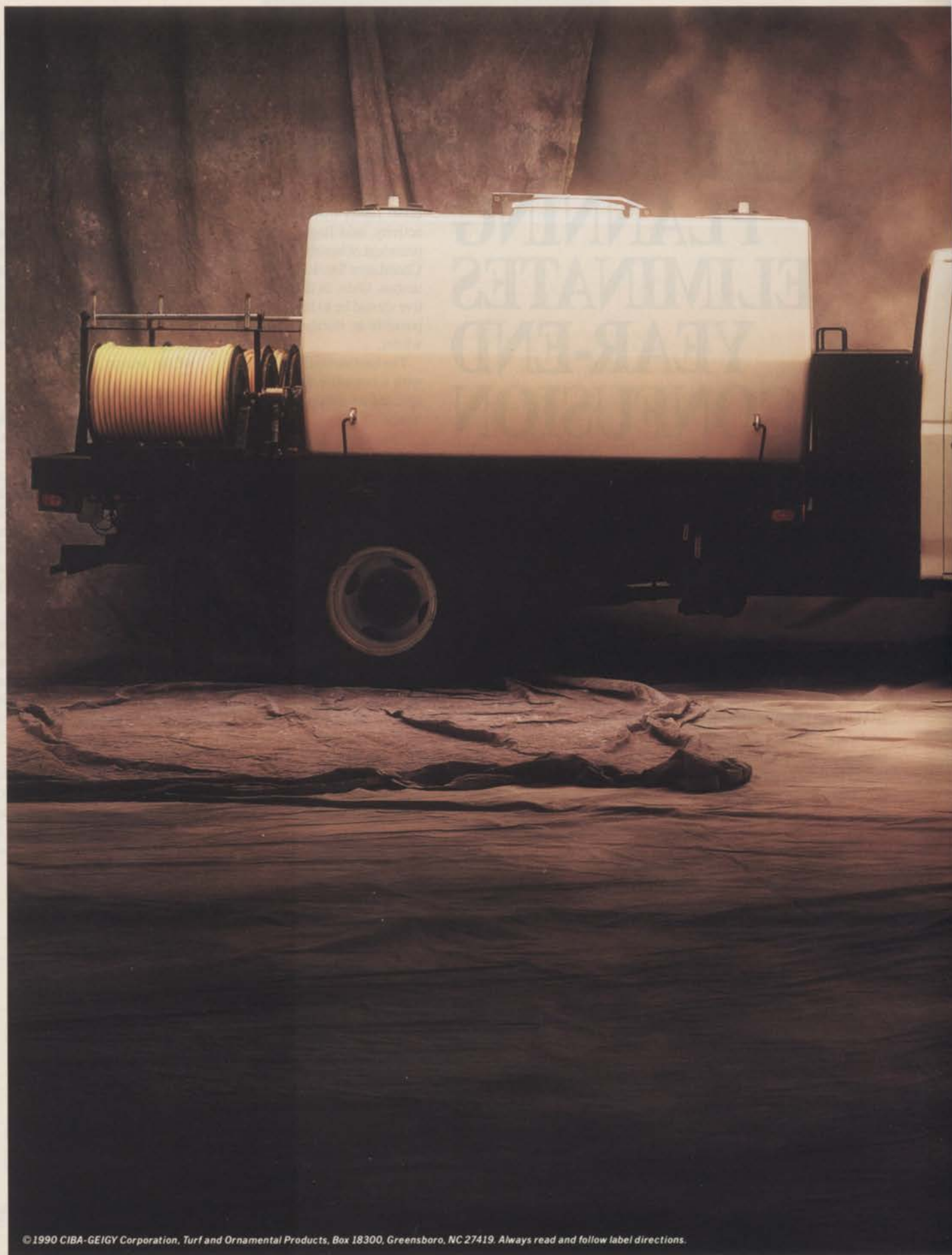
(continued on page 38)

This floor plan for a pesticide storage area is available from the Midwest Plan Service, 122 Davidson Hall, Iowa State University, Ames, Iowa 50011.

The service, a compendium of 12 Midwest state-funded university agriculture programs, will also be publishing a book titled "Fertilizer and Pesticide Containment Facilities Handbook" in early 1991.

Courtesy of Midwest Plan Service, Ames, Iowa





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Pesticide Storage

(continued from page 35)

not to overlook is your fire department.

Whether it's required or not, Yearly said, he advises operators to make the fire marshal in their community aware of both the type and amount of chemicals in storage.

"It's a good idea because if there's ever a fire, that's a time of panic for you," he said. "With all the excitement you may not be able to detail exactly everything that's being stored. Firefighters are people too; when they hear 'chemical fire' they get apprehensive."

They have good reason to be apprehensive. Any chemical composition that contains more than 20 percent nitrate is explosive, Yearly said.

"Lawn care chemicals do not have that high of a nitrate composition, but you can certainly understand their reluctance," he said.

An additional boost for the industry in the past several years has been the altering of products by several major chemical manu-

PESTICIDE STORAGE CHECKLIST

- The area should be cool, dry, well-ventilated and well-lighted.
- It should be insulated to prevent freezing or overheating.
- Be sure the area is fireproof with a cement floor.
- Keep the area locked to prevent entry by children or other unauthorized persons.
- Post warning signs on doors and windows.
- Detergent, hand cleaner and water should be readily accessible.
- Have ample supplies of absorbent materials such as clay, sawdust or paper to soak up spills.
- Also keep a shovel, broom and dustpan handy for cleanup.
- Equip the area with at least one fire extinguisher.
- Store all pesticides in original containers.
- Store any paper containers off the floor.
- Check every container for leaks or breaks.
- Transfer contents of any leaking container to another container holding the *exact same* pesticide.
- Clean up any spills immediately.
- Keep an updated inventory of all pesticides on site.

Courtesy Ohio Cooperative Extension Service, The Ohio State University.

facturers to make them no longer combustible, Yearly said.

Alerting the fire department before an emergency situation arises will help promote a feeling of goodwill and show that you are responsible, Yearly said.

Kerrigan called it covering the

bases because it's required in some areas.

"It just makes sense," he said. "They'll probably want to come out and inspect your storage area, but it's better to be safe and operating within the law and regulations."

Storing lawn care chemicals can become more involved when there are several different entities claiming to regulate the process, said Dave Murphy, Green Valley Lawn Care, Shawnee Mission, Kan.

"At different times I've had people from the county, the board of agriculture and the fire department out inspecting my storage site," he said. "They typically don't get upset as long as you have some system intact. They may point out some little things, but they'll give you credit for taking care of the major points."

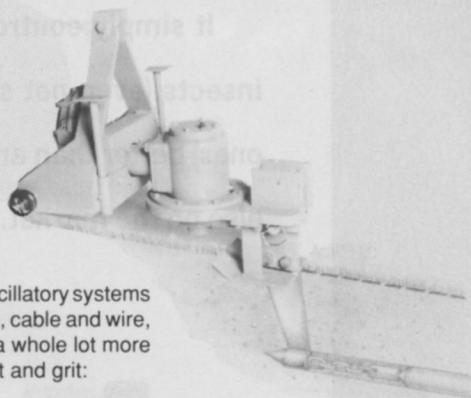
It's a good idea to seek out help when devising a storage area or even afterward to ensure you covered all the necessary points, Murphy said. The Professional Lawn Care Association of Mid-America, an organization headed by Murphy, offers a basic checklist for storing lawn chemicals.

In addition, a local extension agent could supply such information, Kerrigan said.

WHERE TO START. Obviously, choosing an area is the first de-

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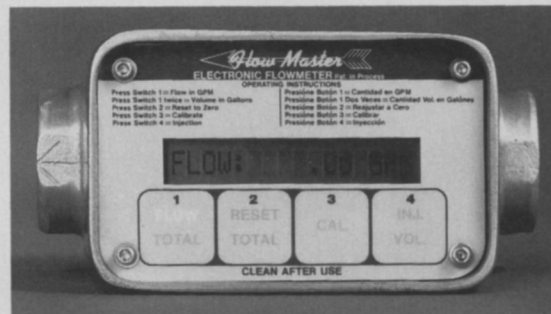
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cision to be made. Dave Jones, director of training, Lawn Doctor Inc., Matawan, N.J., suggested these 10 questions to help determine a storage site:

- Is it large enough to store all the materials inventoried?
- Is it secure enough to prevent theft or vandalism?
- Can the area be entered by children or domestic animals?
- Is there space to store pesticides securely by themselves?
- Is the area away from offices, rest rooms and public access areas?
- Will the materials be stored near a pilot light or other open flame or sparks?
- Is it in an area subjected to standing water?
- Is it away from doorways, loading docks and windows?
- Is the area subjected to fluctuating temperatures?
- Is the area separated from other areas such as tool cribs, paint bottles or parts storage areas?

After a site has been chosen, set the area apart with fences or by building a separate room. The

most important part, though, is having proper signs such as "pesticide storage area."

The requirements for signs are universal. If the storage area is accessible from outdoors, make sure the signs are large and that you have several to ward off curious kids and vandalism, Murphy said.

While using a separate building for chemical storage may initially seem to be safer, it's actually not because it can create more problems than it solves, Murphy said.

"A stand alone building can be tampered with after hours," he said. "It's safer to have a storage area included in an office/warehouse area because that limits those with access."

An operator retains more control when storage areas are within a main building. Access is already limited and employees are knowledgeable about proper use, said John Dunham, vice president of franchising for Barefoot Grass, Worthington, Ohio.

A separate storage building presents more possible problems

because it's an easier target for vandalism, he said. Often, warning signs invite vandals rather than deterring them.

WHAT TO INCLUDE? Often overlooked items in a storage facility are items to use for cleanup, such as hand cleaner, brooms, dust pans and absorbent materials for spills, according to Kerrigan.

"A part of storing chemicals is being prepared," he said. "You cannot reasonably expect that some product will never be spilled. It's a part of the process."

Make sure to store all the same products in the same area—a herbicide section, a fertilizer section, etc. Combination products such as fertilizers with preemergence herbicides should be in an area separate from other fertilizers to avoid confusion.

Make sure to create a separate storage area for equipment, Yeary said. There's a tendency to store gloves, boots, goggles and other safety gear along with the chemicals for quick and easy availability. While these items should be close for convenience, they also

need to be in a separate area, he said.

Other recommendations to follow include storing all products off the floor in case the area ever floods. For additional safety and convenience, store the heaviest containers on bottom shelves and the lightest ones on upper shelves.

Staying updated on what's in storage is a part of the inventory process, but it can also save money while eliminating waste, Murphy said. Frequently checking labels to make sure they're legible and still intact will keep you from rendering a product useless because you don't want to take the risk of guessing what it is.

Proper storage can have a positive effect on the bottom line, according to Yeary.

"For cash flow reasons, you want as little extra product on hand," he said. "But you want to make sure your extra amount is in the best condition so it will remain usable." — *David Westrick*

The author is Assistant Editor of Lawn and Landscape Maintenance magazine.

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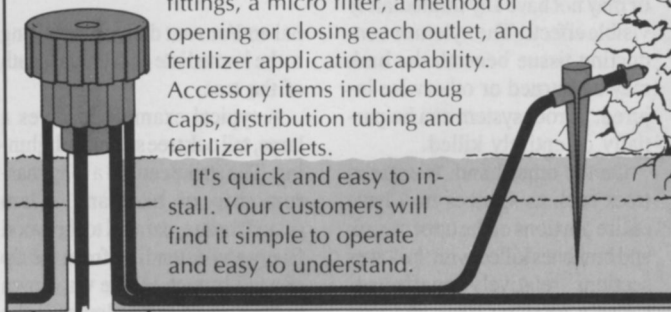
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DON'T LET STORMY WEATHER RUIN YOUR LANDSCAPE INVESTMENT

Even trees showing little lightning damage may need monitoring for internal wounds.

IT SHOULDN'T BE news to people that lightning can and does strike trees. Many people have probably seen some of the physical damage to trees caused by lightning including broken limbs, split-open trunks, stripped bark and, in the most dramatic cases, trees literally blown apart.

Many, however, including a fair number of green industry professionals, may not be familiar with or aware of some of the less visible, but nevertheless damaging effects of lightning strikes to trees.

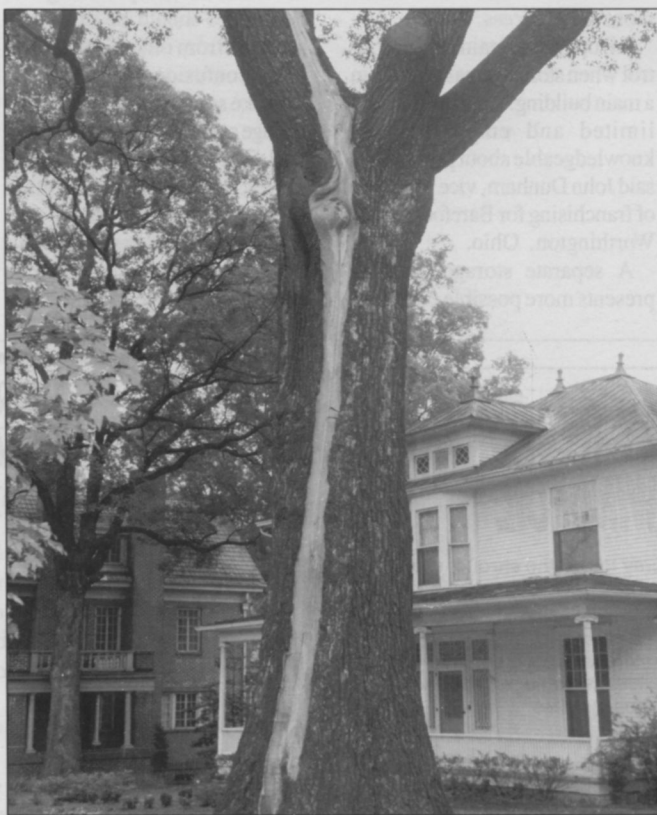
In addition, those just getting started in the tree care field may not have a full understanding of the recommended treatments for trees struck by lightning, or the measures that can be taken to protect a tree from lightning strikes.

TYPES, EXTENT OF DAMAGE.

As mentioned previously, visible damage to trees from lightning can come in a variety of ways. There's also the risk of both internal and root damage which may or may not have any immediately visible effects. The xylem or conducting tissue beneath the bark may be burned or otherwise injured. A root system can be partially or entirely killed.

On the other hand, evergreen trees such as spruces may have entire portions of the upper trunk and branches killed with the lower sections relatively unaffected. Closely growing trees and surrounding grass and vegetation can also be damaged or killed.

The problem is that a tree struck by lightning exhibiting little, if any, visible external damage may have suffered tremendous inter-



nal and/or root damage resulting in the immediate or eventual death of the tree.

A typical example involves a large, tall oak tree struck by lightning. The strike caused a long, narrow strip of bark and xylem (wood) tissue, parallel to the wood fibers and extending from the tip of a tall branch all the way down to the ground to be blown off the tree.

In addition to this, the tree must also have experienced some extensive internal and root damage as the tree declined and died over a period of a couple years.

FACTORS THAT AFFECT DAMAGE LEVELS. There are a number of factors which determine the degree and extent of tree injury caused by a lightning strike. First is the intensity or voltage of the electrical discharge.

Other factors include the moisture content of the bark and its surface, moisture content of the soil, proximity to a body of water and/or a tall structure, presence of decay, depth of roots in the soil, the character of the branch and trunk tissues and the tree's relationship to surrounding trees, e.g., is it isolated in an open

Tree with typical lightning damage. Photo: Independent Protection Co. and NAA.

field? The tallest of a group of trees? At the end of a row or at the edge of a grove of trees?

Another factor is the species of trees involved. Robert Cripe of the Independent Protection Co. in Goshen, Ind., reports that the following group of trees are struck by lightning more often than others: maple, sycamore, ash, poplar, tulip tree, oak, pine, hemlock, spruce and elm. Birch, beech and horse chestnuts are hit less often than the average species.

TREATING LIGHTNING STRUCK TREES.

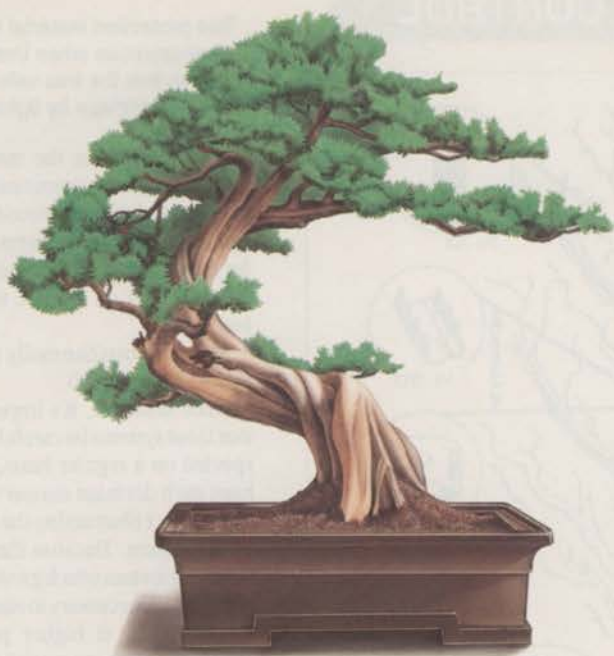
Because of the fact that many lightning caused tree injuries are hidden from sight within the tree's internal structure and roots, it's imperative that a tree struck by lightning be carefully inspected before any treatments are recommended or initiated.

Certainly measures should be taken to clean up debris and to alleviate any impending hazard from hanging limbs or leaning trees. However, because many trees will eventually die regardless of the remedies attempted, more extensive and costly steps shouldn't be initiated until the tree's chance of survival is evaluated as good.

Treatment of trees struck by lightning doesn't differ greatly from that of trees stressed for other reasons. Although it may be rather difficult, and perhaps the chances of success not that

(continued on page 42)

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great, if pieces of detached bark are still moist it's advised that an attempt be made to tack them back into place. Measures to keep these areas moist and shaded should also be taken.

Torn or loose bark should eventually be traced or cut back to living, healthy tissue although initially it might be advisable to leave it alone providing an opportunity for it to reattach.

Fertilization can also be an effective element in a treatment program. Depending on the extent of damage and the time of the year, it may be wise to use a fertilizer ratio that is relatively low in nitrogen and higher in phosphorus. During dry periods it's important to provide adequate moisture for the tree through watering, and even more importantly, if fertilizing is done.

To provide further stimulation of root growth it may also be necessary to aerate the soil to increase the availability of oxygen as well as the supply of water and nutrients to the tree crown.

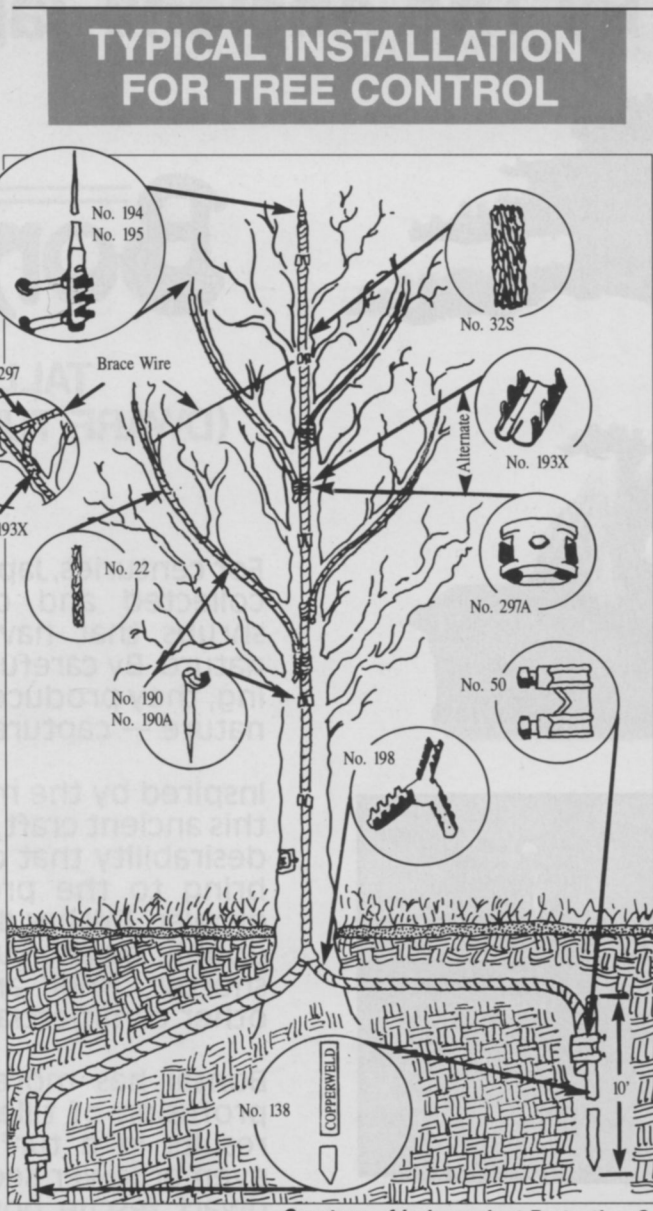
Continued monitoring of the tree's condition over the next several growing seasons is extremely important. If the tree responds favorably to the initial treatments more extensive pruning, wound care, fertilization and aeration may be warranted.

On the other hand, if the tree responds poorly and continues to decline, it may be better to remove the tree as opposed to investing additional dollars into its care.

PROTECTING TREES FROM LIGHTNING DAMAGE. There are means by which to protect a tree against possible damage from a lightning strike. The system used is not unlike lightning protection systems designed for use on man-made structures such as houses and buildings. The main difference is that a system used for trees must accommodate movement or swaying and growth.

Of course, not all trees are candidates for lightning protection. First consideration should be given to species that are more susceptible than others to strikes. Next consideration should be given to whether the location in question is favorable for strikes.

Because there is an extra cost involved above and beyond the



Courtesy of Independent Protection Co.

normal maintenance cost of trees, candidates for protection are generally large specimens, historic, rare or otherwise valuable trees. Other trees requiring special consideration are those apt to be used for shelter from storms and those with trunks and/or branches within 10 feet or less of a structure that might be struck.

Among a group of trees, only the taller ones need be protected.

Lightning protection systems basically consist of one or more air terminals installed at the highest points in a tree, each connected to a vertical conductor, usually a 32-strand copper cable, which runs down the entire length of the tree.

At the base, the vertical conductor is connected to a cable running 1 foot beneath the ground extending out to the dripline or

beyond, at which point it terminates at a connection to a 1/2-inch diameter copperweld ground rod. The ground rod, ranging from eight to 10 feet in length is driven vertically into the soil. The size and configuration of the particular tree will determine the number of air terminals, vertical conductors and ground rods that will be required.

Proper installation of these systems is obviously important in order to achieve the expected level of protection when the need arises. It's strongly advised that these installations only be performed by a tree care professional trained and experienced in lightning protection systems for trees.

The size and configuration of the particular tree will also determine the cost of labor and mat-

Tree protection material is not conspicuous when installed and renders the tree safe from damage by lightning.

erials required for the installation. Man-hour requirements for a typical lightning protection installation can range from two men for a half a day, up to three men for a full day on a large, multi-leader tree.

Material costs can easily range from \$200 to \$400.

Once installed, it's important that these systems be carefully inspected on a regular basis, perhaps each dormant season when foliage isn't obstructing the view of the system. Because the tree is a living system which grows and expands, it's necessary to reattach air terminals at higher points every two to three years and make other adjustments as needed to accommodate tree growth.

The National Arborist Association has published standards for the installation of lightning protection systems in trees and standards for fertilizing and pruning trees. To purchase a copy of these standards contact the NAA office, P.O. Box 1094, Amherst, N.H. 03031-1094; 800/733-2622.

A copy of the lightning standards should be obtained and carefully reviewed before any attempt is made to advise on or install a lightning protection system.

— Lauren Lanphear ■

The author is vice president of the Forest City Tree Protection Co. Inc., and Lanphear Supply Division, South Euclid, Ohio. He is past president of the Ohio Chapter, International Society of Arboriculture and currently serves as treasurer of the NAA.

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Green Industry suppliers have begun introducing their new offerings for the coming season. Don't be left behind in viewing what's new and improved.

Equipment manufacturers continue to meet the demands of the lawn and landscape maintenance professional by offering new and updated equipment. This year is no exception.

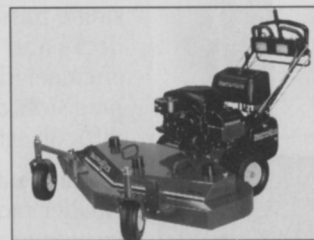
On the following pages, you'll find an array of mowing, seeding, pesticide application and irrigation equipment. Take a peek at these new products and then try them out at one of the fall or winter trade shows.

USING THE LATEST technology in the science of overseeding existing lawns and seeding new lawns, **BlueBird International** has introduced a new Lawn Seeder.

The seeder unit is an integral part of the lawn seeder model F-20, or it can be attached to an F-20 BlueBird Lawn Comber.

Circle 101 on reader service card

The latest engineering from **Snapper/Kees**, the new Pro Series walk-behind commercial mower line, is now available. The line is designed to be user-friendly with a handle that's adjustable to operator height and contains true



finger-tip control regardless of operator hand size.

All have two power unit options (14-h.p. Kohler and 18-h.p. Kohler engines) and four mower deck options (36-, 48-, 52- and 61-inches).

Other features include a special Peerless transmission with automatic shift-on-the-go feature; five forward speeds from 1.5 to 5.9 mph; positive reverse drive; and a 5-gallon capacity, polyethylene fuel tank.

Circle 102 on reader service card

For lawn maintenance professionals, the new **Classen RS-30** riding fertilizer spreader takes a



lot of work out of fertilizing operations. Designed to get into and around small and heavily landscaped areas, the RS-30 fits easily through a 30-inch gate and features a tight 12.5-inch turning radius.

The high-impact, rust free hopper can be used with most fertilizers and has a Shower Cap hopper cover that protects the contents.

Circle 103 on reader service card

A new dethatcher has been added to the **LESCO** line of turf care equipment. It features a recoil start, 5-h.p. gasoline-powered engine and V-belt drive. The deck is made of 11-gauge steel.

Sixteen heat-treated, high carbon steel blades are spaced on 1



1/2-inch centers for a dethatching width of 19 inches. An over-center

lever lowers the dethatcher to operating position.

Circle 104 on reader service card

The **Alamo** Grounds Keeper is now available for fine turf mowing. The high-capacity 15-foot wide mowing unit will mow at speeds from 1.5 to 6.5 mph depending on the surface finish, grass conditions and obstruction.



Rotary or flail heads are available and interchangeable. Each mowing head is controlled and positioned independently.

Circle 105 on reader service card

Hahn has announced design changes for its Multi-Pro 418. The new vehicle features a front suspension system that incorporates a single transverse mounted leaf spring assembly with a wishbone frame and anti-bar to allow the front axle to float freely.

The suspension is finished with heavy-duty shock absorbers that give the Multi-Pro 418 a smooth ride, while still maintaining its stability.

Circle 106 on reader service card

The Teejet lawn spray gun from **Spraying Systems** features interchangeable shower head-type color-coded nozzles employing

(continued on page 45)

Hahn

Powerful. Quiet. Precise. Twin Cylinder Powered MULTI-PRO 418



The Hahn Multi-Pro 418 has all the features needed to enhance and maintain quality turf.

This heavy duty vehicle sprays, fertilizes, top dresses, seeds, and hauls. The high flotation tires and four wheel design protect turf and reduce compaction, making it gentle enough to be used on delicate greens.

With a low center of gravity and wide stance,

the Multi-Pro 418 hugs hillsides even under the heaviest loads. An abundance of power is provided by an 18HP Twin Cylinder Kohler engine with whisper quiet exhaust.

From a Precision Liquid Application System to an Accurate Pendulum Action Dry Applicator to a Rugged Cargo Transport Vehicle, this Multi-Pro 418 is built specifically for your turf

maintenance demands. Versatility, Dependability, and Performance. The Multi-Pro 418 from Hahn, the Leaders In Application Equipment.

Hahn

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Circle 11 on reader service card

PRO-CONTROL

Calibrates and maintains an even rate on every acre to be sprayed regardless of vehicle speed or terrain.

FOAM MARKER

Helps eliminate overlap and skips of spray material. Directional valve controls flow of foam to either boom.

SPREADER

The pendulum action spreader with its conical steel hopper ensures accurate flow of all materials... fertilizer, seed, lime...even damp sand.

UTILITY

When transporting materials, the cargo bed with optional hydraulic dump will provide another valuable attachment.



EQUIPMENT PREVIEW '91

48 solid stream orifices in a full cone pattern to minimize drift.

The gun is available with optional accessories including a low volume adapter and extension wand for spot spraying and "touch-up" work. An inlet swivel offers free swiveling action at the hose connection to eliminate twisting and knotting of the hose. **Circle 107 on reader service card**

Dixon Industries offers a new mower line with seven models ranging from 30- to 50-inch cutting widths for both residential and commercial properties.

All mowers feature mid-mounted decks, true zero turn-



ing radius and tilt-up bodies for easier maintenance and servicing.

Series 300 mowers: Both 30-inch models, 10-h.p. ZTR 304 and 12-h.p. ZTR 312, and the 36-inch 12-h.p. ZTR 361 are compact to pass through almost any gate. The 36-inch mower deck on the ZTR 361 extends 6-inches outside the low-profile body.

Series 400 mowers: The front end of both 42-inch models, 12-h.p. ZTR 428 and 14-h.p. ZTR 429, has been redesigned to add 1 1/2 inches more trimming edge to each side of the mower deck.

Series 500 mowers: ZTR 503 HG features independent Hydro-Gear units on each drive wheel; ZTR 502 has chain drive to the rear wheels.

Circle 108 on reader service card

Canaan Industries has introduced the Fieldmaster to its Walkover line of sprayers. Each Walkover is precision manufactured to produce a reliable, accurate, maintenance free unit, resistant to turf and horticultural chemicals.

Circle 109 on reader service card

The new Load-Eze Fold-A-Ramp from **Gered Marketing** fits in a pickup bed and is equipped with safety chains so that the ramp can't slide off. The 72-inch ramp

weighs 52 pounds and is rated at 800 pounds. The 84-inch ramp weighs 62 pounds.

The folded width is 22 inches and the open width is 43 1/4 inches. **Circle 110 on reader service card**

Two new models have joined the growing line of **John Deere** front mowers: the 17.5-h.p. F710 and the 20-h.p. F725. The F700 series appeals to the commercial operator who needs a durable, yet more compact unit for greater maneuverability.

The industry exclusives include a hydrostatic transmission controlled by two foot pedals. This system allows the operator to keep both hands on the steering wheel and both eyes on the job.

Circle 111 on reader service card

Aquapore Moisture Systems has introduced two new watering products:

The first is two separate 4-packs of drip emitters. Blue tip emitters maintain a constant drip flow of 1 gallon per hour. Red tip emitters maintain a flow of 2 gallons per hour.

The second is a pack of two FAN-JET Sprinkler sets that cover either 180 degrees or 360 degrees.

The self-cleaning drip emitters are for watering isolated plants, trees and flowers. The FAN-JET Sprinkler is screwed into a heavy walled riser which is held by a spike that sits in the ground.

Circle 112 on reader service card

Tornado Products has introduced an 8-h.p. Baker chipper/shredder with patented, free-swinging, triangular hammers that provide more shredding and grinding power than fixed hammer units.



The 12 hammers swing to grab material, providing more cutting surfaces, sharper cutting angles and easy feeding. The hammers may be rotated up to six times as wear occurs.

Patented features also include an idler clutch and a bearing guard.

Circle 113 on reader service card

True Temper's new cyclone commercial broadcast spreader, Model CB5000, is a large capacity spreader with an ergonomically designed handle to reduce hand and arm fatigue.

An adjustable handle allows the user to customize the spreader to the desired handle height and the ground props adjust for varying



terrain. The broadcast spreader has a 100-pound capacity, heavy-duty, poly hopper with an adjustable feed gate for even spreading.

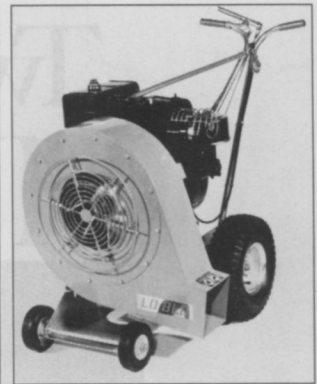
Circle 114 on reader service card

A 300-gallon lawn unit has been introduced by **Oldham Chemical**. The preassembled, pretested unit is in a metal frame so it can be truck-mounted.

Basic features include a 300-gallon poly tank with a stainless steel baffle and a Hypro D-30 diaphragm pump mounted to a 5-h.p. Honda engine, with 300 feet of 1/2-inch hose on an electric or manual reel.

Circle 115 on reader service card

Atwater Strong's Lo-Blo 16 BPT self-propelled blower model contains a 16-h.p. Briggs & Stratton cast iron engine capable of an air blast velocity of 175 mph with a volume of 5,500 cubic feet of air per minute.



Variable speed drive allows the 16 BPT to perform on any terrain. It has an exclusive 18-inch, 8-blade magnesium heat treated impeller designed to move high volumes of wet and dry debris.

Circle 116 on reader service card

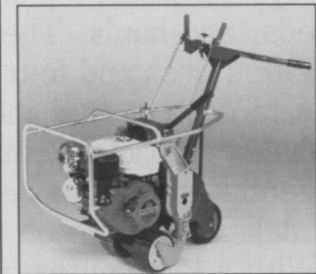
A compact, lightweight and portable hose reel that incorporates a detachable handle is now available from **Hannay Reels**. In addition to making storage more compact, the detachable handle also means a significant savings in shipping costs because it now qualifies for UPS shipping.

The portable hose reel, Model 1100 gets the hose to any job site without an operator having to pile it or drag it behind him. Pickup and storage are neat and quick.

Circle 117 on reader service card

Turfco has introduced two new sod cutters.

The Turfco Pro can be set up for 12-, 15-, 16- or 18-inch width of cut and is powered by an 8-h.p.



Honda engine. The Pro Lite is powered by a 5-h.p. Honda engine and cuts 12 inches wide. New features include simplified controls and roll cages for protection.

Circle 118 on reader service card

The Grasshopper Co. has introduced a new high-power li-

(continued on page 50)

Finelawn

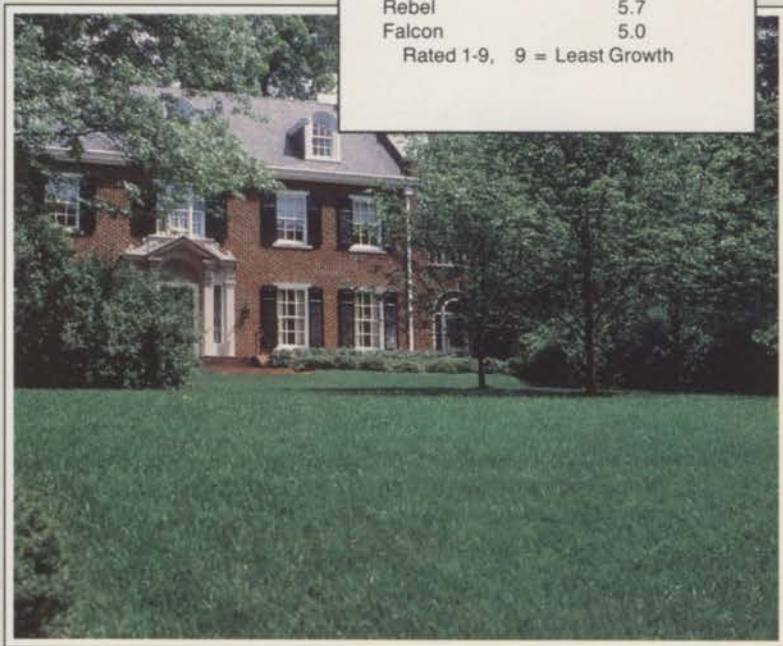
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Finelawn 5GL has
some real down
to earth advantages.*



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TURF QUALITY

VARIETY	AVG. SCORE
Finelawn 5GL	5.9
Apache	5.8
Rebel	5.7
Falcon	5.6
Rated 1-9,	9 = Best

DROUGHT RECOVERY

VARIETY	AVG. SCORE
Finelawn 5GL	6.7
Arid	6.2
Bonanza	5.5
Apache	5.3
Rebel	5.3
Falcon	5.3
Mustang	5.3
Jaguar	4.3
Rated 1-9,	9 = Best

VERTICAL GROWTH

VARIETY	AVG. SCORE
Finelawn 5GL	7.0
Bonanza	6.7
Mustang	6.3
Arid	6.0
Rebel	5.7
Falcon	5.0
Rated 1-9,	9 = Least Growth

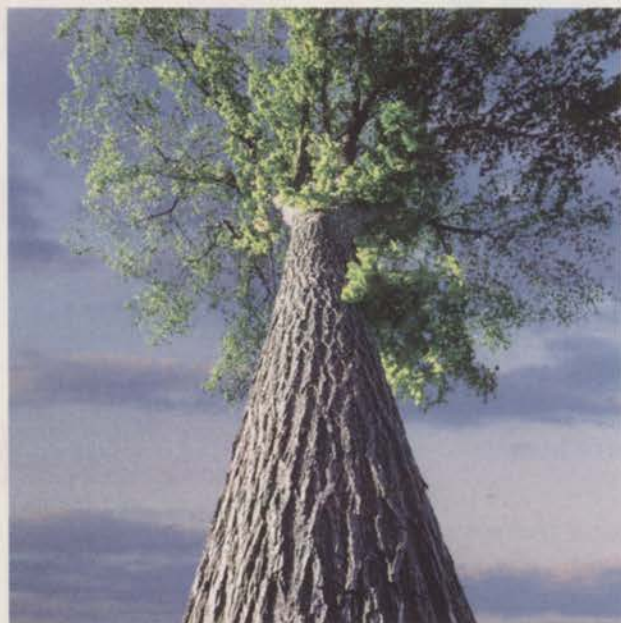
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Circle 29 on reader service card

Tall ones.



Short ones.



Year	Value
1990	1.0
1991	1.1
1992	1.2
1993	1.3
1994	1.4
1995	1.5
1996	1.6
1997	1.7
1998	1.8
1999	1.9
2000	2.0

1. Exponentially high growth rates
2. Low growth rates
3. Significant increases in total population
4. Significant increases in low population growth rates

For the purpose of this study, we have used the following criteria to determine the growth rate of a population:

- 1. Exponentially high growth rates
- 2. Low growth rates
- 3. Significant increases in total population
- 4. Significant increases in low population growth rates

The following table shows the results of our study:

Year	Value
1990	1.0
1991	1.1
1992	1.2
1993	1.3
1994	1.4
1995	1.5
1996	1.6
1997	1.7
1998	1.8
1999	1.9
2000	2.0

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Thin ones.



Fat ones.



All shapes and sizes qualify for our PAGEANT.

Nothing's worse than slimy worms crawling on your shrubs, ugly beetles munching on your pines and nasty borers blemishing your birches. That's why you need new PAGEANT® DF in your tank.

Any other insecticide has to settle for first runner-up. PAGEANT DF is the only tree and shrub insecticide that gives you the active ingredient chlorpyrifos in a dry, flowable formulation. Its long residual keeps protecting the beauty of trees and shrubs long after other insecticides have left the scene. And studies show that chlorpyrifos is gentle to both applicator and environment.

What's even more attractive is its broad spectrum of control. You can control everything from beetles to borers to worms—all with a single insecticide.

Since it's a dry, flowable formulation, PAGEANT DF also has minimal odor and less chance of phytotoxicity. Plus, it goes into solution beautifully—no more

clogged nozzles, or undissolved clumps. Your applicators can mix without dust. And without the splashing caused by liquid insecticides.

So much talent in such a beautiful package. Almost seems unfair. PAGEANT DF not only works better than the competition, it also looks better. But that cube-shaped container offers more than good looks—it's specially designed for easier handling and disposal.

Each container holds five full pounds of insecticide. At a mixing ratio of 1-2 pounds per 100 gallons of water, PAGEANT DF is ideally packaged for larger spray tanks.

Why not judge for yourself how well PAGEANT DF protects the beauty of trees and shrubs? Then send a clear message to the insecticide you're presently using: hand over the crown. To find out more, call 1-800-352-6776.



*Trademark of The Dow Chemical Company.

EQUIPMENT PREVIEW '91



quid-cooled diesel model to join its lineup of outfront zero turning radius mowers. The new 21-h.p. Gemini Series Model 721D is for demanding high-acreage applications where high horsepower, durability and increased mowing speed are required.

The Model 721D can be equipped with PTO-driven outfront EZ-Lift decks in cutting widths from 44 to 61 inches including new low-profile decks in 48-, 52- and 61-inch widths. A heavy-duty 72-inch deck is also available.

Circle 119 on reader service card

Bric-Edg is the new landscape edging system now available from

Oly-Ola Sales Inc.

Designed specifically to support and contain bricks, cobblestones or patio blocks, this durable PVC edging is ideal for sidewalk, driveway, courtyard or patio installations.

Lightweight, easy-to-install bric-edg is available as a rigid edging or, for contoured or circular areas, in a flexible V-cut style that can be curved to a radius of about 36 inches.

Circle 120 on reader service card

Sprinkler Tie from **V.I.T. Products** protects sprinkler heads by providing stability and strength to the pipe connection above and below the ground.

It forms a strong bond between the stake and the sprinkler head and is comparable to the cost of using conventional galvanized clamps.

Circle 121 on card

The **Land Pride** 48-inch solid stand seeder is designed for accurate interseeding and new seeding of grasses. The three-way soil-to-seed contact system provides greater germination and emergence with the advantages of a full width seeding pattern

The PTO driven knives slice into the ground creating slots to receive the seed. Then adjustable double torsion tickler tines agitate the seeding surface to help promote soil-to-seed contact.

Circle 122 on reader service card



The Model 360 is **Shindaiwa's** latest addition to its growing line of high-performance vertical cylinder chain saws.



The 360 features a one-piece ignition for fast, reliable starts, a clutch driven automatic oil pump, a 2-ring piston for long-term performance, a captivated recoil spring, a one-piece, four bolt muffler for added quiet and an adjustable carburetor that's boot-mounted to eliminate vapor lock.

Circle 123 on reader service card

The Recycler line from **TORO** includes deflectors to guide clippings around the deck and back into the blade to be cut and recut into fine slivers of grass.

(Continued on page 52)

A LANDSCAPE EDGING FOR ALL TYPES OF PROJECTS



Edging minimizes hand trimming and helps contain mulches, such as stone and bark, within the bed area. *It will also help to keep more water in the planting beds by eliminating surface runoff.

* Penn State University Research Project 1986

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Circle 28 on reader service card



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Circle 46 on reader service card

SOMETIMES BIG ISN'T BETTER

Discover The Mid-size Walker Mower



Accepted practice in the lawn maintenance business has been to use the BIG commercial rider mower for open areas and walk-behinds for trimming. Now maintenance operators all across the country are discovering a new, fast efficient way to mow landscaped areas...for many jobs the maneuverable MID-SIZE WALKER MOWER does the whole job saving time, labor, and equipment investment. And Walker offers high productivity without sacrificing a quality cutting job, sure to please the most discriminating customer.

*"If you can't buy it, build it."
And so we did!*



EQUIPMENT PREVIEW '91

The deflectors then force the clippings back into the turf. Even in tall grass, the Recycler can give you a clean cut lawn without bagging.

The specially designed blade of the Recycler balances air flow. It produces a powerful vacuum action on the surface of the grass to pick up unwanted debris, and at the same time injects the finely cut clippings back into the grass.

Circle 124 on reader service card

The **Olathe** Model 84 walk-behind aerator/slit seeder has a new reverse gear for increased operator maneuverability. The aero/seeder is equipped with an 18-h.p.



engine for heavy-duty renovation jobs.

Features include the patent-pending shatter blade that requires less power while bringing up more topdressing, remote seed shutoff that allows the operator to shut off the feed at any time and one handle to engage blades and set depth and rear-wheel drive to help prevent surging.

Circle 125 on reader service card

Tuflex announces four new additions to its product line. The 0400PC 400-gallon tank is adaptable to pickup or flat-bed applications, similar in design to the 0300PC.

A fiberglass bed is 94 inches wide by 110 inches long with non-skid rear section. Lightweight, removable sideboards featuring a lockable swingdown tailgate with step and hose reel port on curbside and a utility vehicle chest to keep your powder dry are other

additions.

Circle 126 on reader service card

The latest generation of Spotlyte Sprayers from **Falkenberg** features a broadcast nozzle system that allows boom spraying without a boom, new molded-in instruction, usage and caution labels and new enlarged double strength tanks.

Circle 127 on reader service card

The Hustler 260K with Turbo Shredder from **Excel** chops and shreds grass clippings into fine pieces, eliminating the need to catch and bag clippings.

The 260K accepts the Hustler edger attachment which can help eliminate costly backtracking while delivering clean, consistent results. The edger features a self-sharpening blade and sealed bearing.

Circle 128 on reader service card

Scag Power Equipment's zero-turn rider offers the close cutting ability of an out-front rider with the turn-on-a-dime maneuverability of a compact belly-mount.

The new zero-turn rider is driven by Scag's hydro drive system that features two cast iron White motors and two Sundstrand pumps. All hydro components are symmetrically located for simple servicing.



The zero-turn rider features a full-floating 52-inch cutter deck for smooth cutting on rough terrain. Deck adjustment is simple and can be performed from the operator's seat.

Circle 129 on reader service card

New utility vehicles from **Jacobson** — Model 2315, with its 23.5-h.p. liquid-cooled diesel engine, and Model 2015, with its 20-h.p. gas engine — can haul 1,500 pounds with a 19-cubic-foot



cargo capacity. The tailgate is removable for easy unloading.

The Jacobsen trucks have a 5-speed transmission with reverse. Top speed is 20 mph. A welded steel frame, large front bumper and heavy-duty drive train make them durable.

Circle 130 on reader service card

A hose-end applicator designed to apply turf wetting agents has been introduced by **Kalo**.

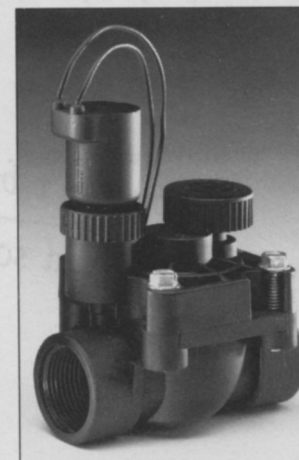
The only liquid siphoning hose-end sprayer, the sprayer will ac-



curately apply wetting agents and can be used to apply micronutrients and other additives. The metering system mixes small quantities of chemical with large volumes of water. The sprayer offers a variety of chemical dilution rates.

Circle 131 on reader service card

Teledyne Total Power has introduced two vertical shaft mod-



els into its Wisconsin Robin Sovereign Series of 4-cycle air-cooled OHV engines. At 3,600 rpm, the single-cylinder WO1-170V offers 5.5-h.p. and the twin-cylinder WO2-560V produces 18-h.p.

Twelve Sovereign models are now available in both horizontal and vertical shaft configurations, offering from 4- to 18-h.p. engines.

Circle 132 on reader service card

The new Ryan Lawnaire V aerator from **Cushman** increases the work capability for lawn care operators and turf managers.

Built similar to the Ryan Lawn-



aire IV, the Lawnaire V covers a 26.5-inch aerating swath and can aerate up to 29,000 square feet per hour, or 38 percent more area per hour.

Powered by a 4-cycle, 3.5-h.p. Honda engine, it's equipped with 3/4 inch, open-sided coring tines that can permeate up to 2 3/4 inches deep, depending on soil type and conditions.

Circle 133 on reader service card

The **L.R. Nelson Corp.** has introduced its Pro 7900 series 1-inch plastic valve. The valve has a globe body and is available with and without flow control.

The valve features durable glass-reinforced nylon material in the body and bonnet. By simply loosening the bolts, the bayonet-mount bonnet can be twisted and removed from the body; the spring and diaphragm stay captured in the bonnet.

Circle 134 on reader service card

Exmark's Turf Ranger has been redesigned. It's now available in two mowing widths: Large, out-front 60-inch and new 52-inch

(continued on page 54)



© 1990 Isuzu Truck of America, Inc.

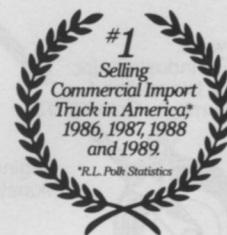
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Circle 47 on reader service card

EQUIPMENT PREVIEW '91



floating decks glide over uneven terrain.

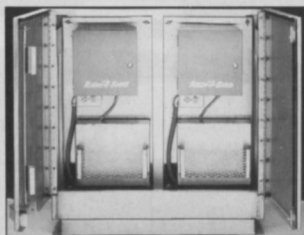
Also new on both the 52- and 60-inch models is the Ranger's side-discharge grass catching system, perfect for fall clean-up. Choose from Kawasaki 17-h.p. or 18- or 20-h.p. Kohler Magnum twin-cylinder engines.

Circle 135 on reader service card

Hydro-safe controller assembly, a complete vandal and corrosion resistant system for irrigation equipment is available from Hy-

dro-Scape Products.

The system comes with many prewired options such as a master valve relay suitable for two controllers, a pump start relay and



a bypass assembly for moisture sensing, rain check devices, radio remote control as well as other specially requested features.

Circle 136 on reader service card

Two new chipper/shredder models are available from **Crary Co.** The 5- and 8-h.p. Honda engines both feature free-swinging shredding blades that are serrated self-sharpening and reversible with two cutting edges.

The shredders will make quick work of twigs, cornstalks, leaves, paper, plastic bottles and more with their serrated shredder blades. They will easily handle logs up to 3 inches in diameter with the two chipping blades.

Circle 137 on reader service card

The FG 434 four-wheel drive truck from **Mitsubishi Fuso** is ideal for off-highway applications where conditions cripple ordinary trucks. High and low ranges for efficient on- and off-road productivity add to its versatility.

Other features include: Premium radial mud and snow tires,



tight turning radius and easy maneuvering, longer body per wheel-base and easy accessibility to the engine and major components for routine maintenance.

Circle 138 on reader service card

Walker offers a compact, maneuverable riding mower for the demands of commercial mowing. Features include a built-in grass collection system and direct (no chain) dual hydrostatic drive. It's available in 11- or 16-h.p. models with 36-, 42-, or 54-inch front-mounted mowing decks.

Circle 139 on reader service card

The Tidy Yard Composter™ from **Earthwise Products** is designed for landscape contractors who want to recycle large volumes of yard waste on site.

The composter consists of a large woven polypropylene bag with handles and a skirt. The skirt

(continued on page 56)

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Circle 48 on reader service card

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The individual customer's monthly amount is automatically posted to each account along with any other necessary charges (approximately 2 minutes total posting time for 500 accounts). Depending on printer speed, you can then print as many as 500 accounts in three hours or less.

Thousands of business owners all over America are satisfied that "The Invoicer" helps speed-up cash flow and gives them a more professional look. A simple toll-free call will give you more insight on this money-making product. You can find out first-hand if your particular needs can be handled by "The Invoicer."

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With "The Invoicer" also comes two very valuable features included at no extra charge. You get a 30 day money back guarantee* and free 60 day telephone support to provide you with valuable assistance for your unique needs. In addition, we can custom modify the program to precisely fit your exact needs. (Try getting that from Peachtree or DAC!) All at an unbelievable price. Just call us.

\$149.

You can speak to the people who developed the software and hear how other companies like yours have found "The Invoicer" important in the billing automation process. If you are not sure if this is the right product for you, a quick, painless phone call can help you determine if you should order.

"The Invoicer" sells for only \$149. Compare that to \$1000 or more for other software systems doing essentially the same thing. Call today and have automatic billing in a matter of minutes for less than 50 cents per day. For complete information Call or Write Now:

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or 1-512-629-4341

Other modules available include Sales Tracking/Inventory and Accounts Payable. General Ledger to be released late 1990.

*All guarantees subject to our written warranty policy. \$20 restocking fee on all returned packages.

Circle 49 on reader service card

We gave the belt the boot

INTRODUCING THE NEW WET-DISK DRIVES FROM JOHN DEERE

Wet grounds can cause your profits to slip as quickly as the drive belts on some commercial mowing machines.

That's why John Deere has banished the belt, replacing it with a more reliable, more durable wet-disk clutch.

Of course, we don't

recommend mowing in the rain, or in extremely wet conditions. But when you must, our new 14- and 17-hp wet-disk-drive mowers handle the situation well. Helping keep you and your cash flow moving in a positive direction.

Disk-drive clutches are enclosed in the transmission case and lubricated for long life. No external drive belts. No moisture-induced traction loss.

The 5-speed, gear-drive transmission (with reverse)

can be shifted on the go.

Console and handle-mounted controls are within easy reach.

And the convenient hand crank lets you adjust cutting heights easily from $\frac{3}{4}$ to 4 inches.

An exclusive oscillating deck provides cutting widths of 48 and 54 inches in each horsepower size.

See your dealer for more information on the new wet-disk drives from John Deere. Or call 1-800-544-2122.

**NOTHING RUNS
LIKE A DEERE®**



EQUIPMENT PREVIEW '91

can be pulled up to increase the capacity of the bag. As organic material settles, the skirt can be pulled down to expose the handles.

The bag can also be turned inside out to carry leaves from one location to another. It's available in white or gray.

Circle 140 on reader service card

Redington Counters is now offering a telescoping handle for its one- and three-foot circumference



line of Redi-Measure measuring wheels. The handle collapses to 13 inches for ease in storage and

transporting.

Circle 141 on reader service card

A new lightweight, hydraulic pole pruning saw offering greater versatility and easier use is now available from **Husqvarna Forest & Garden Co.**

The Husqvarna Highcutter PS50 is designed for tree services, utility companies and municipal workers. The 15.5-pound saw is designed for operator comfort and convenience. The telescopic shaft is constructed of lightweight fiberglass and reinforced polyester. It's available in five different lengths, with a range up to 20 feet.

Circle 142 on reader service card

Columbia ParCar Corp. presents the 1991 model Utilitruck with features such as speed-balanced rack and pinion steering and good maneuverability.

The Utilitruck features a redesigned rear steel body with a flat-bed made of aluminum plat-

ing, steel sides and tailgate and a gross carrying capacity of 1,500 pounds.

Circle 143 on reader service card

Flowtron Outdoor Products recently introduced a new compost bin. Measuring 30 inches square by 32 inches high (16 1/2 cubic feet), the CB-50 offers speed and convenience in loading and unloading, ease in turning and overall durability. It's made of recycled, UV-stabilized plastic.

Removable slats provide easy access to both "cooking" and finished compost, while the bin's exterior retains natural heat for proper decomposition in as little as six or eight weeks.

Circle 144 on reader service card

Arrowhead Plastic Engineering introduces the Dri-box, designed to store and protect dry bags of fertilizer on open-bed trucks.

Molded from durable, corrosion-resistant polyolefin mater-

ials, the Dri-box features a continuous seal for weather resistant storage and transport. The clam shell design and gas cylinders allow for easy access for loading and unloading dry bags of fertilizer.

Circle 145 on reader service card

Lombardini U.S.A. has introduced a new range of liquid-cooled diesel engines consisting of two lines — the FOCS and CHD.

Circle 146 on reader service card

You now can have a one-piece tank/deck unit that is lightweight and requires little maintenance with the **Fiber Lite Tank Deck.**

The complete tank/deck weighs about 800 pounds and is made of all fiberglass to avoid rusting. It's compartmentalized to individual specifications and is ideal for liquid or granular. With its solid one-piece construction, it's easy to install.

Circle 147 on reader service card

COMPUTER SOFTWARE

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Circle 57 on reader service card

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Circle 58 on reader service card

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- **An effective telemarketing program**
- **Preparing a marketing plan**
- **Update on small business law**
- **Group Health/Life/Major Medical**
- **A Credit Collection Service**
- **A Liability Insurance Program**
- **A newsletter on lawn care issues**
- **A public relations program**
- **Gather major suppliers of lawn care products and services**

As the only international trade association of lawn care professionals, PLCAA has a strong history of providing the right information at the right time for the lawn care industry. Our staff and Board of Directors are dedicated to providing you with the professional business assistance you need to stay strong and informed.

To learn more about how to put your Business Partner to work — for less than a dollar per account per year, contact the Professional Lawn Care Association of America today. Clip and mail the return coupon, or call toll free **1-800-458-3466**.



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TURF AND ORNAMENTAL PRODUCTS '91

Here's your chance to see what's new and improved from the Green Industry suppliers.

LAWN AND LANDSCAPE MAINTENANCE magazine continues to bring its readers a preview of an assortment of pesticide, seed, fertilizer and specialty products new to the industry in 1991.

Maintenance operators have an assortment of items from which to choose when planning for the new season.

Read through the following product selections noting new products and variations of well-known products. Many of these products will be introduced at one or more of the fall and winter trade shows, so keep them in mind.

The Environmental Protection Agency has accepted registration of Tempo insecticide from **Mobay Corp.** for turf use. When Tempo was introduced it was available in 500 milliliter containers.

Industry acceptance of the advanced-generation pyrethroid was so widespread that Mobay has designed a package that is easier to use.



The new 1.5-liter jug of Tempo is optimum for commercial operators who need to mix large quantities of insecticide.

In addition, the technician can achieve excellent control with 80 percent less active ingredient than other leading insecticides. This means less worker exposure and fewer containers for disposal and storage.

Tests show Tempo to be compatible with commonly used fungicides, liquid fertilizers and other insecticides in tank mixes.

Circle 147 on reader service card

Two improved tall fescues are now available from **Northrup King.**

Amigo and Arriba will be blended with the established Arid



tall fescue and offered as "The A-Team."

These improved dwarf varieties are representative of the company's continued belief in tall fescues as a burgeoning species for today's more sophisticated turf specialists.

All three varieties have ranked at or near the top in major categories of the USDA National Tall Fescue Trials.

Circle 148 on reader service card

TwoSome flowable fungicide from **LESCO** is a combination of chlorothalonil and fenarimol: two proven ingredients for contact plus systemic control of most fungal turfgrass diseases.



TwoSome offers one-container convenience and accuracy. Chlorothalonil, a contact fungicide and fenarimol, a systemic fungicide, are specifically formulated in a premeasured 16:1 ratio to form a liquid product package in a one-gallon container. The general use

rate of one gallon per acre aids in measuring convenience.

TwoSome effectively controls a broad spectrum of turfgrass plant diseases like summer patch, leaf spot, dollar spot, brown patch and gray snow mold.

Available as a four by one gallon case, TwoSome is designed for commercial use in parks, athletic fields and residential areas.

Circle 149 on reader service card

Lebanon Chemical introduces Country Club 18-4-10 and Country Club 18-5-9 with NAIAD soil penetrant. These formulations



combine Lebanon's two most popular fertilizer grades with an effective wetting agent designed to increase absorption in water resistant soil surfaces.

Country Club 18-4-10 with NAIAD is formulated to fertilize turf areas effectively and enable water to spread uniformly over

(continued on page 60)

TURF & ORNAMENTAL PRODUCTS '91

The only thing on this ad is Mobay's full line of proven products. There are no turf or ornamental diseases, no pests, and no blights of any kind. The same thing happens when you use Mobay products on your turf and ornamentals. Mobay Corporation, Specialty Products Group, Box 4913, Kansas City, MO 64120. 800-842-8020



The only thing on this ad is Mobay's full line of proven products. There are no turf or ornamental diseases, no pests, and no blights of any kind. The same thing happens when you use Mobay products on your turf and ornamentals. Mobay Corporation, Specialty Products Group, Box 4913, Kansas City, MO 64120. 800-842-8020

TURF & ORNAMENTAL PRODUCTS '91

soil surfaces and through resistant soil structures.

This product has a 90 percent organic, homogeneous fertilizer base with 10 units WIN, combined with NAIAD wetting agent. It is specially sized for rapid penetration into the root as well as for less pickup by mowers.

Country Club 18-5-9 with NAIAD provides fast green-up and sustained feeding in combination with increased water absorption. It contains 50 percent organic nitrogen and 5.5 units WIN with a balanced NPK formula. The full weight granules assure full width and accurate distribution.

Both products are available in 50-pound bags that provide 9,000 square feet of treatment.

Circle 150 on reader service card

New from **O.M. Scott & Sons** is the addition of Proturf 16-24-12 Turf starter fertilizer to its product line.

The new fertilizer blend is formulated to promote vigorous seedling development and root



growth and to provide sufficient phosphorus to help correct deficiencies in established turf. Turf starter also encourages quick green-up through controlled-release nitrogen in Scotts SREF — Slow Release Encapsulated Fertilizer.

Developed for use on athletic fields and other large turf areas, Turf Starter may be dragged into the top ¼ inch of soil with the seed, or applied prior to overseeding established turf. To help correct phosphorus deficiencies in established turf, application in

early spring provides maximum response.

Circle 151 on reader service card

The Andersons has introduced a new product in its professional line for turf care. The new product is Tee Time Fertilizer 30-3-8 with SEVIN insecticide.

Tee Time fertilizer with SEVIN is designed for easy application with broadcast spreaders and may be useful in areas where other



chemical controls are restricted or prohibited because of environmental concerns.

The product will control a broad range of both surface-feeding and subsurface (white grub) insects, without leaving an unpleasant odor. The active ingredient decomposes rapidly after application.

Circle 152 on reader service card

A new line of all natural organic mineral fertilizers is available from **Earthgro**. The product line is named Earth's Best and is non-toxic and non-burning when used as directed. The nutrients contained in Earth's Best are natural and released slowly into the soil to provide long-term growth and color.

Earth's Best fertilizers combine the soil building properties of compost with the high nutritional value of naturally occurring nitrogen, phosphorus and potassium.

The guaranteed NPK analysis of 8-2-4 compares equivalently to higher analysis chemical fertilizers because the nutrients are more available to plants when needed.

Improved soil aeration, drain-

age, water penetration and holding capacity prevent soil compaction and strengthen the root system of plants.

Circle 153 on reader service card

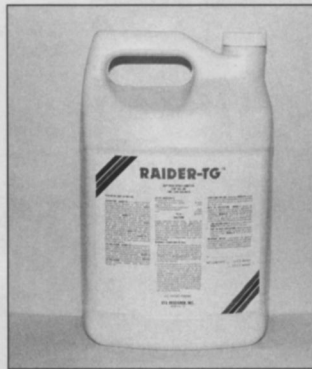
NuStar, a new moderately dense, medium-dark green bluegrass from **Jacklin Seed Co.** combines excellent turf quality with superior resistance to many troublesome turf diseases.

In a four-year turf trial at Rutgers University, NuStar ranked eighth out of 228 experimental and commercial varieties in overall turf quality. It was highly resistant to powdery mildew and summer patch and showed excellent resistance to three serious bluegrass diseases — leafspot, melting out and leaf rust.

NuStar also ranked above average against wilting due to drought. Spring green-up results range from modest to superior, depending upon location.

Circle 154 on reader service card

ATS Research has announced the addition of Raider-TG to the turf products line. With the addition of Raider-TG to postemergence herbicides, a greater con-



trol of targeted weeds can be expected at both higher and lower temperatures. Raider-TG will promote quicker control with less "spray shock" to the host grass.

Circle 155 on reader service card

Ruffin Tuff Iron and Manganese formula now available from **Ruffin Inc.** is designed to give full summer control of trees, shrubs and flowering plants that are chlorotic from lack of iron and manganese.

Test results and field trials have shown that in many cases the

chlorotic plants are short in both iron and manganese. As they are companion micronutrients, both needs must be corrected to get proper results. The products come in 25-pound and 50-pound bags.

Circle 156 on reader service card

A granular insecticide called BioFate is being marketed by **Regal Chemical Co.** It's highly effective on mole crickets and grubs as well as many other turf damaging insects. BioFate also controls pesky insects such as ants, fleas and ticks.

BioFate is produced by impregnating a 100 percent edible carrier with a highly effective insecticide and then baiting the granules with an attractant. Insects are lured to the bait and ingest the granules.

Ingestion of the insecticide is many times more effective than contact or vapor action from or with the insecticide.

Many insects have demonstrated that they can crawl through a sprayed area with little or no ill effects. These same insects are easily controlled if they eat the same chemical.

Circle 157 on reader service card

Sandoz Crop Protection is offering two more options for disease and weed control.

Barricade, a herbicide for turf and ornamentals, and San 619, a turf fungicide, are expected to receive Environmental Protection Agency registration in the spring of 1991.

Barricade will be offered in a water dispersible granule for pre-emergent control of annual problem grasses. San 619 controls a broad spectrum of major turf diseases, including dollar spot and brown patch.

More than 265 in-house and university trials of Barricade have shown it to be a long-lasting herbicide that provides season-long control of more than 70 weeds.

Barricade will make controlling problem grasses easier because of its long residual, turf safety, low staining potential and application timing options.

Barricade is effective on goosegrass and large and smooth

(continued on page 62)

YAZOO!

"Something Worth Shouting About..."

Yazoo mowers have earned a reputation for quality and endurance among customers throughout the most demanding lawn care regions in the country. For 45 years, commercial lawn maintenance firms and consumers have come to depend on our heavy-duty components, practical design, easy maneuverability

and operator comfort.

Whatever your application, Yazoo has a mower to maximize your time on the job. Choose a cutting width from 20" to 76"; with high performance engines strong enough to meet your needs. All Yazoo mowers are designed for tough turf, but their responsive handling will

leave your lawn with a smooth, professional finish.

You'll also like our prices. We're able to give you the features you want – the rugged construction you need – at a cost that may surprise you. If you are looking for superior performance and matchless value, you can stop looking; and start shouting... "Yazoo!"



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Circle 1 on reader service card

TURF & ORNAMENTAL PRODUCTS '91

crabgrasses. It can also be used on all established warm- and cool-season turfgrasses including bentgrass.

One of the most important attributes of San 619 is its broad-spectrum control, and specifically, its effectiveness on brown patch. Most systemic fungicides are effective for only a short time, often not more than 12 days. But applied alone at a rate of 1/3 ounce per 1,000 square feet, San 619 provides residual control of brown patch, gray leaf spot and summer patch for 21 to 28 days.

Circle 158 on reader service card

Turf Mark,[®] the blue spray indicator from **Becker Underwood** is now available in a convenient tablet form.

The water soluble tablet is designed for use with any standard backpack sprayer. Each tablet treats one or two gallons of spray solution.

The resulting blue-colored solution helps make applications

virtually foolproof.

The tablets mix completely with all water soluble pesticides and fertilizers. Since this is a temporary colorant, it will dissipate in either wet or dry weather conditions. In addition, it will not stain clothing, hands or equipment.

Circle 159 on reader service card

American Marking Corp. has introduced a new line of plain and imprinted marking flags. All flags

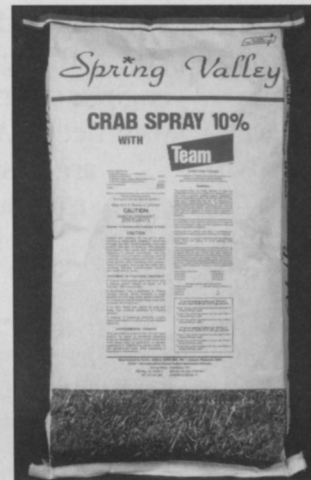


in the line are computer programmed from the assembly of

raw material to the precision inspection of the finished product.

Circle 160 on reader service card

The new crab spray 10% from **Spring Valley Turf Products** is the



only sprayable TEAM that has an active ingredient ratio of two parts Balan to one part Treflan, the same ratio as successful granular

TEAM.

The easy handling micro-sized particle of this product are easily dissolved in water and virtually dust free.

The combination is meant to be gentle on turf, but deadly to crabgrass. It can be used alone or added to sprayable fertilizers to customize your application. It can also be used as a follow-up to a first preemergence application.

Circle 161 on reader service card

An individually customized service summary and sales closer is being introduced by **Focal Point**. It describes your company and its programs and is written to suit your needs. Operators can order as few as a thousand copies and use them year-round to promote their businesses.

Circle 162 on reader service card

Industrial Services has announced an addition to its packaging of Terra-Sorb superabsorbent.

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Circle 59 on reader service card

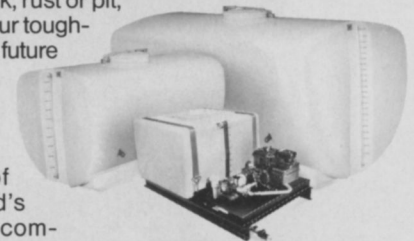
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Circle 60 on reader service card

TURF & ORNAMENTAL PRODUCTS '91



The 3-ounce premeasured handy pacs will now be available in a case containing 60, in addition to the standard 245-count case.

The product is a cross-linked polyacrylamide copolymer capable of absorbing and storing hundreds of times its weight in plant available water.

Circle 163 on reader service card

A maintenance free long lasting putting green is available from **Putting Greens**. It can easily be

incorporated into a customer's landscape because of its life-like artificial turf.

Installation can be done in eight hours — two individuals can easily install two in a day.

The company is looking for landscapers to become part of its authorized dealer network.

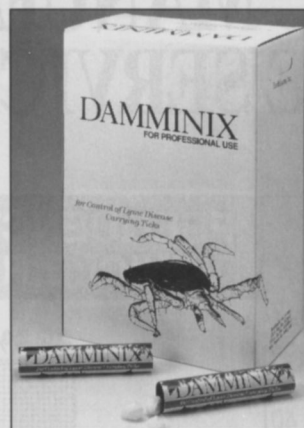
Circle 164 on reader service card

EcoHealth Inc., the makers of Damminix for control of Lyme disease carrying ticks, announced that a 96-tube box of Damminix is now available for professional applicators under the name "Damminix—For Professional Use."

Damminix works by taking advantage of the natural life cycle of the tick, which transmits the disease, and by exploiting the natural nesting habits of mice, which are the primary source of the Lyme disease infection.

Tubes containing cotton balls are impregnated with an active ingredient, permethrin, capable of

killing ticks, and are placed in wooded areas where mice look for soft nesting materials. The mice do the rest by bringing the cotton back to their burrows



where the ticks also live. The ticks become exposed to the permethrin which kills them on contact. Damminix does not harm the mice.

Circle 165 on reader service card

Parkway Research Corp. has in-

troduced its new product "TRIO," a concept surfactant that provides superior setting, tank acidification for spray mix pH reduction, as well as a compatibility agent to help mix otherwise incompatible chemicals.

Circle 166 on reader service card

Basagran T/O herbicide from **BASF Corp.** is now labeled for use on turf and ornamentals.

It's designed for control of nutsedge and broadleaf weeds on established bluegrass, fescue, bentgrass, bermudagrass, bahiagrass, centipedegrass, zoysiagrass, ryegrass and St. Augustinegrass.

BASF also markets a new over-the-top herbicide for control of annual and perennial grasses in nursery, ornamentals and ground covers.

Vantage herbicide can be applied by ground or aerial equipment or through spot applications.

Circle 167 on reader service card



C&S TURFCARE EQUIPMENT, INC. INTRODUCES THE PROTANK® FAMILY

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Piston Pump
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TS100G*

3H.P. Gas Engine
Roller Pump
100 Gal. PCO Tank

TT1050E2* Twin Tank

2 12v Motors
2 Piston Pumps
50 & 100 Gal. PCO Tanks

TS100G19*

3H.P. I.C.
Diaphragm Pump
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TS200* Tree Sprayer

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Circle 62 on reader service card

DOMESTIC MANUFACTURERS DOMINATE SERVICE VEHICLE SALES

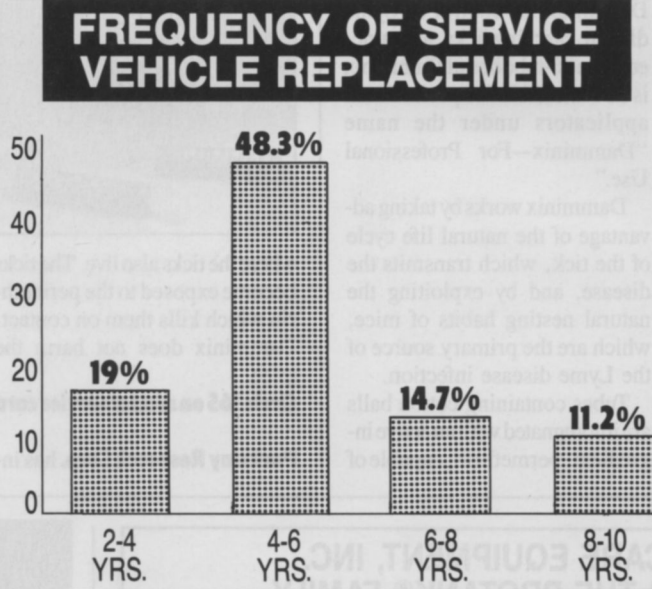
AS A GROUP, *Lawn and Landscape Maintenance* magazine readers, own more than 300,000 trucks and cars and buy more than 65,000 vehicles a year, spending \$18,500 per firm or \$712.3 million as a whole, according to a recent survey of 1,000 randomly selected readers.

This is good news for Detroit because the Big Three domestic manufacturers are clearly the lawn maintenance industry's preference.

In nearly every category of spray rig and maintenance vehicle, Ford, Chevy, GMC and Dodge trucks account for more than 80 percent of those vehicles in use.

The only exception is with medium duty trucks used for spray rigs where the domestics account for 69 percent of vehicles in use.

Our readers own 65,000 spray rigs — an average of 1.69 per company. The most preferred vehicles



for spray rigs are heavy duty pickups and light duty pickups. Other vehicles used include medium duty trucks, mini pickups

and vans. Of the heavy-duty pickups used for spray rigs, 64.3 percent are Ford, 17.9 percent are Chevy

and 14.3 percent are GMC. In the light duty pickup category, 40.9 percent are Chevy, 31.9 percent are Ford and 13.6 percent are Dodge.

As for maintenance vehicles, the survey showed operators owning 206,400 — or 5.36 per company. Once again, the most favored is the heavy duty pickup — accounting for 1.64 maintenance vehicles per company. Close behind is the light duty pickup with 1.55 per company.

Of the heavy duty pickups in maintenance fleets, 66.7 percent are Ford, 21.7 percent are Chevy and 10.1 percent are GMC. Ford accounts for 40 percent of the light duty pickups used by maintenance firms, while 27.1 percent are Chevy, 11.4 percent are GMC and 5.7 percent are Dodge.

Fords make up 34.6 percent of the medium duty pickup trucks used, with Chevy accounting for 26.9 percent, Dodge 15.4 percent and GMC 11.5 percent.

Almost half — 48 percent — of the vans used by lawn and landscape maintenance operators are Ford. Twenty-four percent are Chevy, while another 20 percent are Dodge products.

Ford is the runaway choice for flat-beds — 66.7 percent — while Chevy supplies 18.5 percent and GMC 7.4 percent.

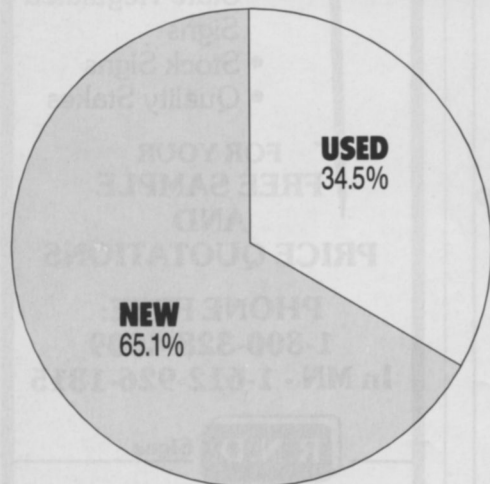
Finally, Ford is the most preferred supplier for dump trucks — 42 percent. Twenty-four percent of dump trucks are Chevy and 20 percent GMC.

Of those purchased, 65.1 percent are new while 39.4 percent are used.

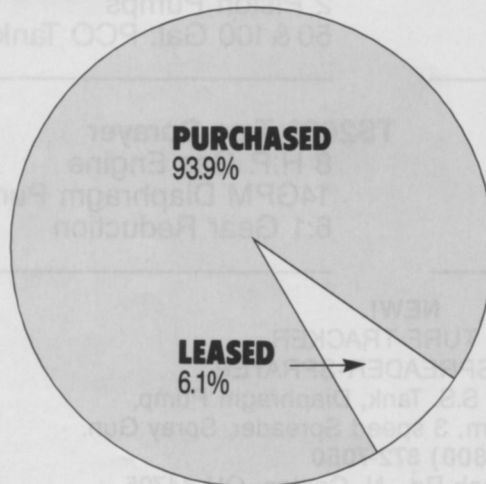
March, October, September and November are the four months out of the year when most maintenance vehicle purchases are made.

July, June, August and January are the least popular months for buying service vehicles.

SERVICE VEHICLE PURCHASES

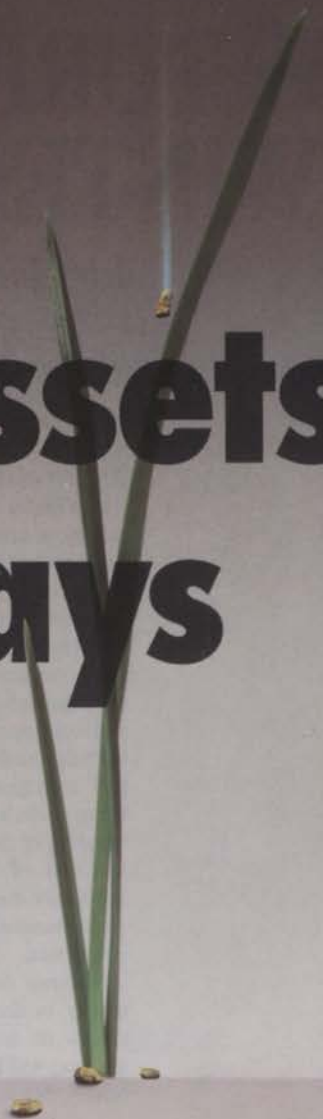


New vs. used service vehicle purchases



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HOW TURF REACTS TO WINTER DORMANCY

Turf Management during cold stress requires a special understanding of the life cycle of turf.

ENVIRONMENTAL stress is a way of life for turfgrasses, but dormancy is one of the important mechanisms that Mother Nature has devised to help plants survive stressful conditions.

Discussion in this article focuses on how turfgrass plants react through dormancy to winter and cold stresses. It also deals with the concept that successful turf management during cold stress periods calls for an understanding of the three Rs — *recognition* of the stress, *plant response* to the stress and *management reaction* to the plant-stress interaction.

Summer dormancy, due primarily to drought and/or heat stress in some cool-season grasses, will be referred to only briefly, but not in detail.

RECOGNITION AND PLANT RESPONSE. "Vegetative dormancy" is commonly defined as

"any plant or plant part that is inactive (dormant), but is capable of growth." The term can be confusing because it's often used to describe very different situations.

Examples include inactive buds on actively growing crowns, rhizomes or stolons; dead stems and leaves and inactive crown buds on summer dormant Kentucky bluegrass; or the grass plant as a whole that is inactive because of subfreezing temperatures.

In the first case, dormancy is physiologically induced and controlled, while in others it's environmentally induced. However, the summer dormancy in turf once environmentally induced is physiologically controlled. All of the leaves and stems with the "brown dead look" in summer are actually dead, and regrowth from crowns is controlled physiologically.

Summer dormancy is like "true dormancy." This is the pinnacle

of dormancy which is defined as the point where a plant, if exposed to favorable conditions, will not immediately resume growth. In other words, it takes a while to get things going again.

Lesser degrees of dormancy can occur in turfgrasses which are more aptly described as *quiescence* — resting or quiet — stages like those resulting from cold temperatures. Unlike true dormancy, these quiescent stages in the cool-season grasses, in which plant growth has ceased, tend to be relieved simply. Plant growth then resumes with the addition of a favorable growing environment.

Quiescence may be a more appropriate description than dormancy in the case of cool-season grass responses to cold stress. Indeed, cool-season grass plants that are not frozen continuously, continue to be active.

It is common knowledge that photosynthetic activity is discernible in green grass leaves at temperatures down into the upper 30 degrees Fahrenheit. In addition, work at The Ohio State University showed that grass roots were active at slightly above freezing.

Grass plants become inactive (quiescent) when tissues reach subfreezing temperatures. This condition may or may not be accompanied by the appearance of "brown, straw-colored" look of dead leaves.

Examining this further, fall and spring season grass plants commonly experience temperatures far above freezing during day-

(continued on page 68)

Dormant bermudagrass treated for annual bluegrass (right). Untreated on left.



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TURF PRODUCTS

Winter Dormancy

(continued from page 66)

light and far below freezing at nights. One could say that the plants are dormant at night and active during the day. We don't, however.

Instead of having true dormancy which is physiologically controlled, we actually have the situation where the physiological processes are limited by the environment, i.e., freezing.

Fall and spring present almost ideal conditions for cool-season grass growth. So what we have in these remarkable grass plants is the ability to slide easily from active growth to quiescence over a daytime cycle, according to temperature.

Dormancy may appear to be cyclical in that the stages go from pre- to dormant to post-dormancy, but not all turfgrasses go through these various stages.

Bermudagrass, when grown in south Florida, may never go into dormancy. As you move farther North, however, bermudagrass can achieve true dormancy. If temperatures rise above freezing at this point, dormancy is not broken.

Warm-season grasses such as bermudagrass are the most likely turfs to develop true dormancy. To the southern turfgrass manager, this physiological shutdown of the plant allows for the potential use of herbicides such as glyphosate and paraquat for weed control on dormant bermudagrass.

Temperature is the single most critical factor in inducing winter dormancy in turf.

These types of herbicides could not be used on actively growing bermudagrass without causing serious injury.

Defining winter dormancy as caused by cold temperatures with cool-season turfgrasses is more complex since these plants don't often reach the "brown dead look." Cool-season turfgrasses



rarely if ever achieve a true dormancy state.

As temperatures drop below freezing, growth of cool-season turfgrasses ceases. However, with the addition of favorable growing conditions such as temperature above freezing and light, plant activity resumes. Cool-season turfgrasses reach a level of dormancy previously described as a quiescent state.

INDUCING DORMANCY. Temperature is the single most critical factor in inducing winter dormancy in turf. Indeed, temperature plays a major biological role as the driving force behind all biological processes. The response to temperature changes is based on the premise that slow-

minimum for growth, metabolic processes such as photosynthesis, respiration and transpiration slow down resulting in dormancy.

A beneficial aspect of growth slowdown in the fall is the accumulation of carbohydrates, compounds that contain energy for the plant, and differentiation products which are important in cold hardiness and overwintering survival.

Factors that can interact with temperature to induce dormancy are: light and photoperiod, nutritional level and moisture. Light intensities are important especially in breaking dormancy. Light is needed for photosynthesis which supplies the energy needed for plant growth. Daylength (photoperiod) which is the number of daylight hours, is described as either short day (longer nights) or long day (shorter nights).

The daylength gradually decreases from late summer through early winter while gradually increasing from late winter through midsummer. Photoperiod plays a major role in floral induction in turfgrasses, but its role in dormancy has not been fully investigated, although it's believed to be minor.

Photoperiod in a number of plants is, however, an important factor in inducing dormancy. In some deciduous trees the initiation of short days triggers dormancy, while dormancy is broken with longer days (spring).

Nutrition, primarily nitrogen, has the ability to delay or accelerate dormancy as does water. Nutrition is discussed further

The prolonged dormancy stage of zoysiagrass when grown in northern areas vs. the green color of Kentucky bluegrass.

under management strategies. Moisture stress is a primary factor in inducing dormancy under summer stress conditions.

In the fall, it can accelerate the acquisition of cold tolerance. A striking example occurs on trees in the late summer to early fall. Trees under drought stress turn fall colors because chlorophyll is lost and carotenoid pigments show resulting in premature leaf drop.

COLD HARDINESS. Cold hardiness is the ability of a turfgrass plant to survive suboptimal temperatures. The hardening process coincides with dormancy, but is not necessarily related to dormancy. As previously mentioned, bermudagrass can reach a level of true dormancy while Kentucky bluegrass does not, but Kentucky bluegrass survives far lower temperatures.

The process of hardening begins well before the arrival of cold temperatures. Research at Minnesota has found that a gradual acquisition of cold tolerance in cool-season grasses starts in July and continues through the fall.

Maximum cold hardiness of both cold- and warm-season turfgrasses occurs during early to midwinter — December to January. With the arrival of thawing temperatures in early spring, the growing points of cool-season

(continued on page 70)

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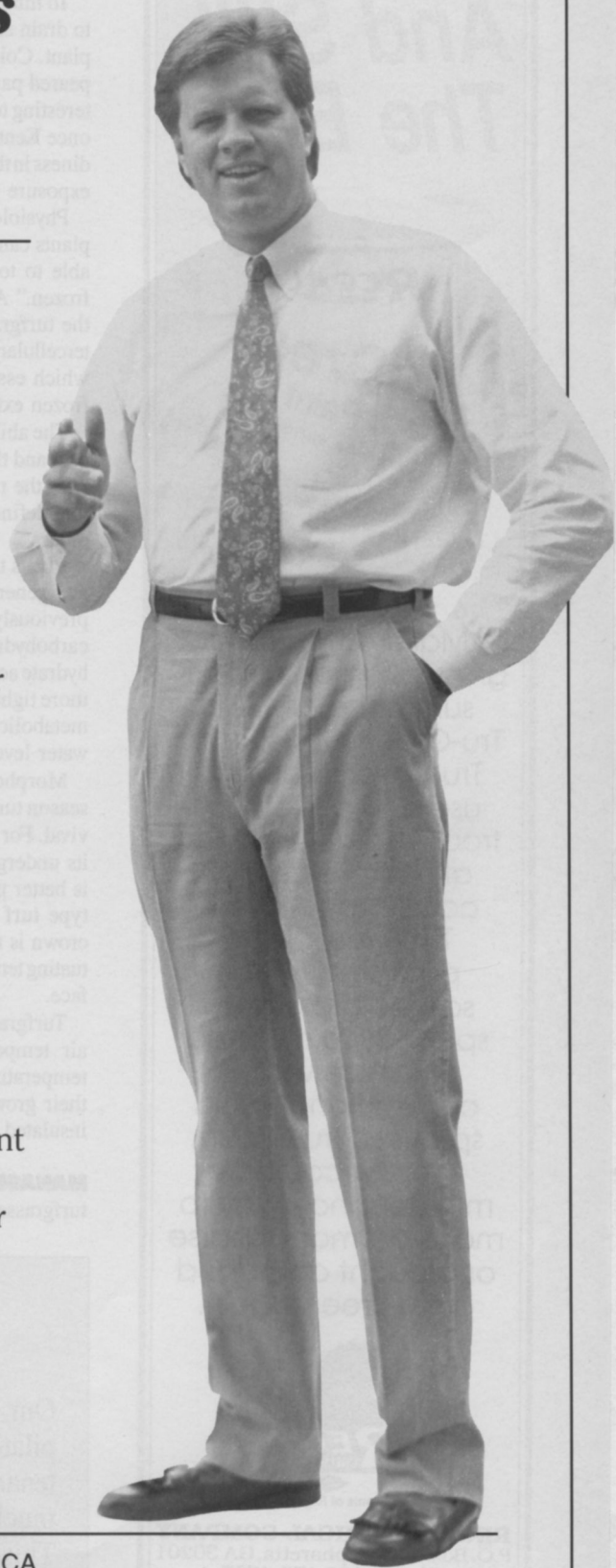
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Winter Dormancy

(continued from page 68)

turfgrasses begin to rehydrate. At this time, growing points are at their greatest risk to winter damage because periods of freezing and thawing are occurring.

To minimize the potential for damage, try to drain any free water around the turfgrass plant. Cold hardiness at this point has disappeared particularly with *poa annua*. It's interesting to note that research has shown that once Kentucky bluegrass loses its cold hardiness in the spring, it cannot be reversed with exposure to cold temperatures.

Physiologically, the degree of hardiness in plants can be stated simply as "those plants able to tolerate more of their water being frozen." As cold temperatures occur within the turfgrass plant, ice crystals form in intercellular spaces, drawing water from the cell which essentially dehydrates it and is then frozen extracellularly.

The ability of the plant to survive this process and then the process of cell rehydration with the rise in temperature and melting of ice, defines in a large part the plant's hardiness.

Plants that tolerate reduced water content are generally more hardy. As mentioned previously, with a reduction in temperatures, carbohydrates begin to accumulate. Carbohydrate accumulation causes water to be held more tightly in the plant and with associated metabolic changes plays a part in reducing water levels required within the cell.

Morphologically, the growth habit of cool-season turfgrasses plays a role in winter survival. For example, Kentucky bluegrass with its underground growing points, rhizomes, is better protected from cold than a bunch-type turf such as annual bluegrass whose crown is more likely to be exposed to fluctuating temperatures and free water on the surface.

Turfgrass plants can survive in areas where air temperatures fall below tissue-killing temperatures through avoidance by having their growing point below a snow cover or insulated by a warmer soil.

MANAGEMENT STRATEGIES. Cool-season turfgrasses will break dormancy sooner in the

spring than warm-season turfgrasses in areas where they are both used. Zoysiagrass, a warm-season grass, has been used in the transition zone and areas north of the zone.

In Northern areas, it forms an excellent turf during the summer but remains dormant through the majority of the year with green-up occurring as late as June in some areas. This dormancy is objectionable to a number of homeowners. If the customer is interested in a zoysiagrass lawn, he should be made aware of the extended dormancy and color of this dormancy.

Cool-season turfgrasses, for the most part, are cold hardy. However, differences occur between species and cultivars of a species. Generally speaking, Kentucky bluegrass and the fine fescues are cold hardy.

Perennial ryegrasses and tall fescues in comparison are less hardy. Variation among cultivars can be expected. For example, work in Norway has shown Kentucky bluegrass cultivars that cease vegetative growth earlier in the fall vs. cultivars that continue to grow later into the fall are more winter hardy.

The application of a late season nitrogen treatment has become a popular practice. Application of nitrogen after turf growth has slowed down, but while leaves are still green, maintains the color and improves overwintering which results in earlier green-up in the spring.

In a broad sense of the word, late season application of nitrogen is a *predormant* application. Dormancy should not be used to describe a late season nitrogen application for cool-season grasses. Best results are associated with applications at least three weeks before cessation of growth takes place.

The principle behind late season nitrogen application is uptake can still occur even if top growth has ceased since root growth continues. Research at The Ohio State University has shown that root growth continues until soil temperatures reach freezing unless moisture is limited. Late-season nitrogen applications cause only a slight reduction in total non-structural carbohydrate levels during the late fall and early winter.

As discussed previously, carbohydrate levels are important in cold hardiness, however, our experience and that of other researchers, has not shown a winter damage relationship.

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Applying excessive amounts of nitrogen before top growth has slowed is wasteful, will probably not give the desired result and cannot be recommended.

Growth substances (hormones) have been tried in attempts to break dormancy. In turf, gibberellic acid applications are primarily made on warm-season turfs such as bermudagrass for the purpose of delaying the dormancy. Research has shown some success in extending the growing period, but the response is fairly short. Further work is needed on how

Mowing height appears to have little or no effect on development of cold tolerance in turf.

growth substances affect southern grasses going into dormancy.

Mowing with regard to cool-season turfgrasses, should be continued up to the point where the grass stops growing. Mowing height appears to have little or no effect on the development of cold tolerance in turf. Turf that is not mowed and left to grow excessively tall in the fall could result in increased snow mold damage. On warm-season turfgrasses, raising the height may reduce the potential for winter injury.

SUMMARY. Dormancy means many things to many people and must be defined whenever the term is used. Keep in mind the following things:

- Warm-season grasses go dormant during cold (above freezing) periods.
- Cool-season grasses go into a quiescent state during subfreezing conditions.
- Cool-season grasses start growth again once growing conditions permit.
- Kentucky bluegrasses and red fescues are generally hardy.
- Perennial ryegrasses and tall fescues are generally less hardy.

It's important to mow until growth stops in the fall, maintain adequate N nutrition in preparation for winter, maintain adequate surface drainage — especially when snow melts in the spring and protect the turf from moisture stress during the predormancy period. — *Karl Danneberger and Don White*

The authors are an associate professor of agronomy at The Ohio State University, Columbus, Ohio, and a professor of turfgrass science at the University of Minnesota, Minneapolis, Minn., respectively.

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ENDOPHYTES PROMOTE INCREASED ADAPTATION OF TURFGRASS PLANTS

EVERY DAY we read reports in the newspapers about the environmental dangers associated with the use of lawn chemicals. Recently, the hysteria has reached such a peak that one can hear people seriously pushing for a turf free earth.

I don't think these people make the connection between turf and a healthy relaxing environment that is all too needed in this day and age. It's hard to imagine what

it would be like living in a city where there were no lawns, parks or grassy areas to help absorb the noise and dirt.

One cannot argue, however, against the need for reduced levels of chemicals in our immediate environment. Turfgrass professionals have regarded pesticides as a necessary tool to maintain turf in the condition that the general public has demanded.

Luckily, for both sides of the controversy, there is now a trend toward the development and production of newer turfgrass products. Many turf products are now available that are helping to reduce the risk of environmental contamination.

One example is the wide variety of slow-release nitrogen fertilizers which improve turf quality while also reducing the potential of nitrate leaching into the groundwater. Another example is the use of biostimulants that, when applied to turf, stimulate root growth and improve the overall health of a plant enabling it to stay at high quality levels with reduced fertility rates.

Plant breeders have traditionally sought to improve the quality of the major turfgrass species. For example, 10 years ago Kentucky bluegrass, long regarded as the Cadillac of turfgrasses, had a lot of disease problems and did poorly in shaded environments. These problems severely limited the areas where it could be used successfully.

Since then, a vast amount of research has gone into developing improved varieties that are more disease resistant and shade tolerant. There are now varieties, such as Chateau Kentucky bluegrass, that perform better in



Endophyte enhanced perennial ryegrass vs. non-endophytic ryegrass.

shaded areas than anyone would have ever expected of a Kentucky bluegrass.

The improved varieties of creeping bentgrass are another example of a turfgrass becoming more disease resistant and less labor intensive while giving better turf quality.

With the onset of shrinking maintenance budgets and water supplies, as well as increased environmental pressures has come a push toward improving the quality of low maintenance turfgrass species such as the tall fescues and fine-leaf fescues.

Some of these varieties now have a high enough quality that they can be used in

**Endophytes are
a type of fungus
that have a mutual
beneficial relationship
with certain
species of grass
such as tall fescues
and fine-leaf fescues.**

showcase turf areas and still retain their low maintenance characteristics. All of these improvements have led to a greater adaptation of more desirable species with a decrease in the use of fungicides and pesticides as well as water and other costly inputs.

The endophyte is one of the latest advances in turfgrass breeding. They are a type of fungus that have a mutual beneficial relation-

ship with certain species of grass and specific varieties within species.

Endophytes get their food and protection by living inside the grass plant, but result in no negative side effects to the plant. As a by-product, they produce and release certain chemicals into the plant's leaves.

These chemicals make the plants resistant to many turfgrass insect pests such as billbugs, chinch bugs, armyworms and sod webworms. To date, only certain varieties of tall fescue, perennial ryegrass and fine-leaf fescues contain endophytes.

DISCOVERY. The endophyte first became known in the late 1800s. However, scientists became interested in them only when it was discovered that livestock grazing on pasture grasses containing high levels of endophytes had serious health problems compared to livestock feeding on endophyte-free grasses.

Their potential importance in turfgrass culture was first reported, in 1982, at a pest control conference in New Zealand.

The main endophytic fungus which confers insect resistance to turfgrasses are from the genera *Acremonium*.

There are different species of the endophyte for different grasses. For example, *Acremonium loliae* infect perennial ryegrasses and *Acremonium coenophialum* infect tall fescues. The by-products produced by the endophyte include a wide range of chemicals including various alkaloids.

Some of the compounds isolated from turfgrasses containing endophytes are loline and

(continued on page 74)



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Seed

(continued from page 72)

peramine alkaloids (Siegel et. al. 1984). These chemicals provide a natural insecticide in the plant.

A study conducted by Johnson-Cicalese and White (1990) investigated the mortality rate of adult billbugs on endophyte-enhanced and endophyte-free tall fescue. In their studies, it was found that the mortality rate of billbugs was 80 percent on infected tall fescue plants and only 42 percent on endophyte-free plants.

When comparing chinch bug populations on endophytic and endophytic-free fine fescues, it was found that varieties high in viable endophyte, SR 3000 hard fescue (97 percent endophyte infection) and Longfellow Chewings fescue (84 percent endophyte infection) had only 42.4 and 55.7 chinch bugs respectively per m².

Varieties of fine fescue that are low in endophytes, such as Aurora hard fescue and Shadow Chewings fescue, had 185.7 and 132.6 chinch bugs per m² respectively (Saha et. al. 1987).

There are many similar studies dealing with sod webworms, armyworms, Argentine stem weevils and other turfgrass insects. The majority of these studies confirm beyond a doubt that endophyte-infected turfgrasses are much

more resistant to the major surface feeding turfgrass insects than non-endophyte turfgrasses.

CONCENTRATION. Distribution of the endophyte within the plant varies. The highest concentration occurs in the leaf sheath and seed, followed by the stem and crown regions of the plant.

The roots have the lowest concentration (Siegel et. al. 1984). This is the reason that endophyte-enhanced grasses are more resistant to surface feeding insects than to sub-surface feeders.

There also appears to be seasonal variation of endophyte concentration within the plant. The highest concentration of infection occurs in the leaf tissue during the summer and fall.

Once turfgrass scientists and managers started keying in on the characteristics that were attributed to endophyte-enhanced grasses, other benefits began to become apparent.

Strong evidence exists that there are beneficial plants, particularly in regard to environmental stress tolerances. In a fine-leaf fescue trial (Saha et. al. 1987), no significant differences in turf quality occurred when the plots were maintained at high maintenance levels.

However, when irrigation and fertility were reduced, SR 3000 hard fescue and Longfellow Chewings fescue had significantly better quality than did non-infected varieties. Over time these differences became more apparent.

The turfgrasses without endophyte had poor recovery from drought stress. Field experiments in New Jersey have observed better summer survival, better fall recovery and reduced weed invasion (Funk et. al. 1985). These results are in part the effect of a denser more vigorous turf.

Experiments on tall fescue under greenhouse conditions have indicated that a denser, healthier turf is the result of endophyte-enhancement. In this study, endophyte-enhanced plants had approximately 12 percent more tillers and 25 percent greater root growth than did non-infected plants (Battista et. al. 1990).

It's interesting to note that the percentage of plants containing endophyte increases while the endophyte-free plants die off. After seven years, the endophyte level of SR 3000 hard fescue had risen from 94 percent to 97 percent while Longfellow Chewings fescue had increased from 48 percent to 84 percent (Saha et. al. 1987).

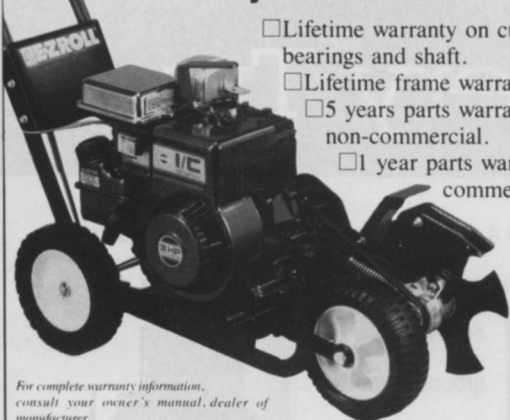
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Seeding

(continued from page 74)

plant endophyte-infected turf it will remain infected, and the benefits will be long lasting. In essence, there is a long period of residual activity that is natural and comes with a low cost compared to repeated chemical applications.

There is only one way to get the endophyte into your turf, you must start with seed that is already infected. Endophytes cannot be applied to turf in any way.

The only way that endophytes are dissemi-

nated is through the seed. It's important to remember that only certain varieties of tall fescue (Tital SR 8200, Chesapeake), perennial ryegrass (SR 4000, SR 4100, SR 4200, Citation II, Dasher II, Commander) and fine-leaf fescues (SR 3000, Longfellow, Reliant) contain high levels of viable endophyte.

What does viable mean? As mentioned earlier, in an established stand the percentage of the endophyte will increase over time. However, the amount of live endophyte in the seed will decline over time. This is especially true if the seed is not stored in cool dry conditions.

The only guarantee that the endophyte in your seed is still viable is to buy fresh seed. Seed that is more than two years old will more than likely have experienced a decline in endophyte viability.

Unfortunately, there is no way to test seeds to determine if the endophyte is still viable. The only way to determine the presence of viable endophytes is by a grow-out test, not a convenient method for the end user. Other tests on seed cannot distinguish between viable and non-viable infection, so it's important to purchase the freshest seed available.

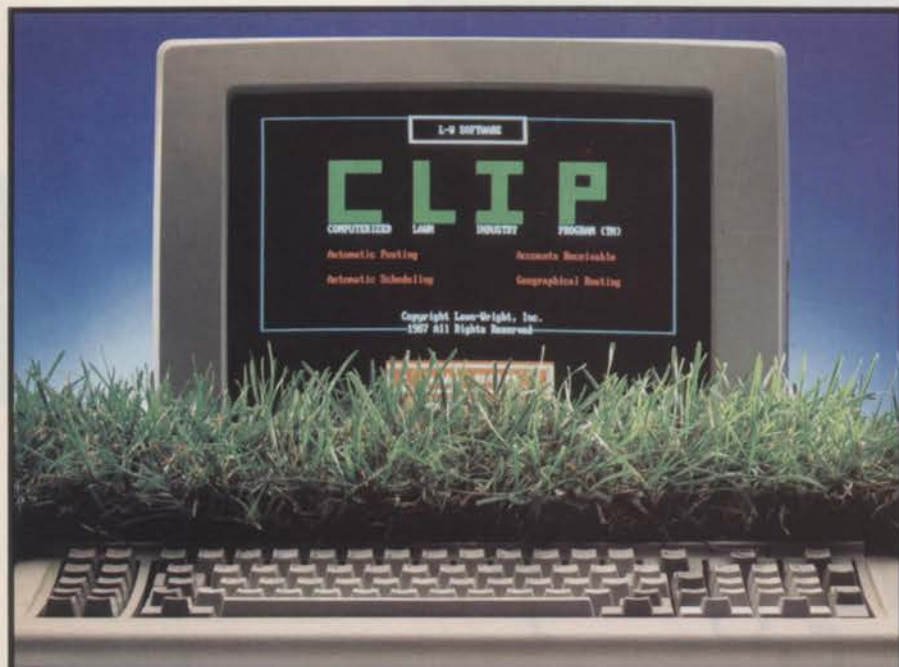
The endophyte is not the total answer to all the environmental issues that face turfgrass managers today. However, by using endophyte-enhanced turfgrasses it's possible in many instances to significantly reduce the amount of pesticides that are released into the environment and, at the same time, have a healthier turf of higher quality.

This is a step in the right direction that all turfgrass managers can take. It should also be the job of all turf managers to educate the general public about the benefits of turfgrass and how we, as an industry, are constantly looking for ways to improve the quality of our environment. — Steve Poitras ■

The author is marketing manager for Seed Research of Oregon Inc., Corvallis, Ore.

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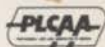
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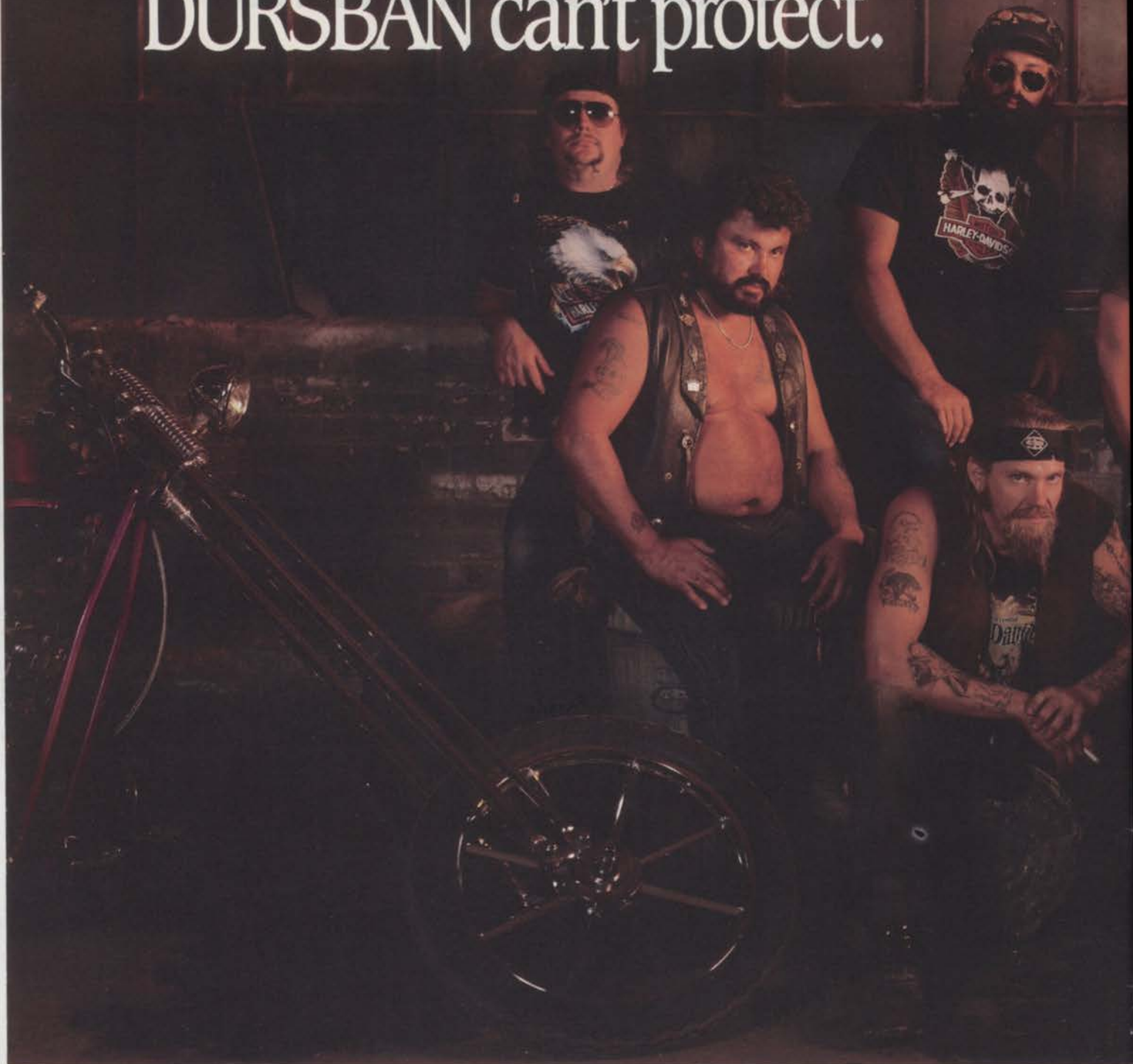
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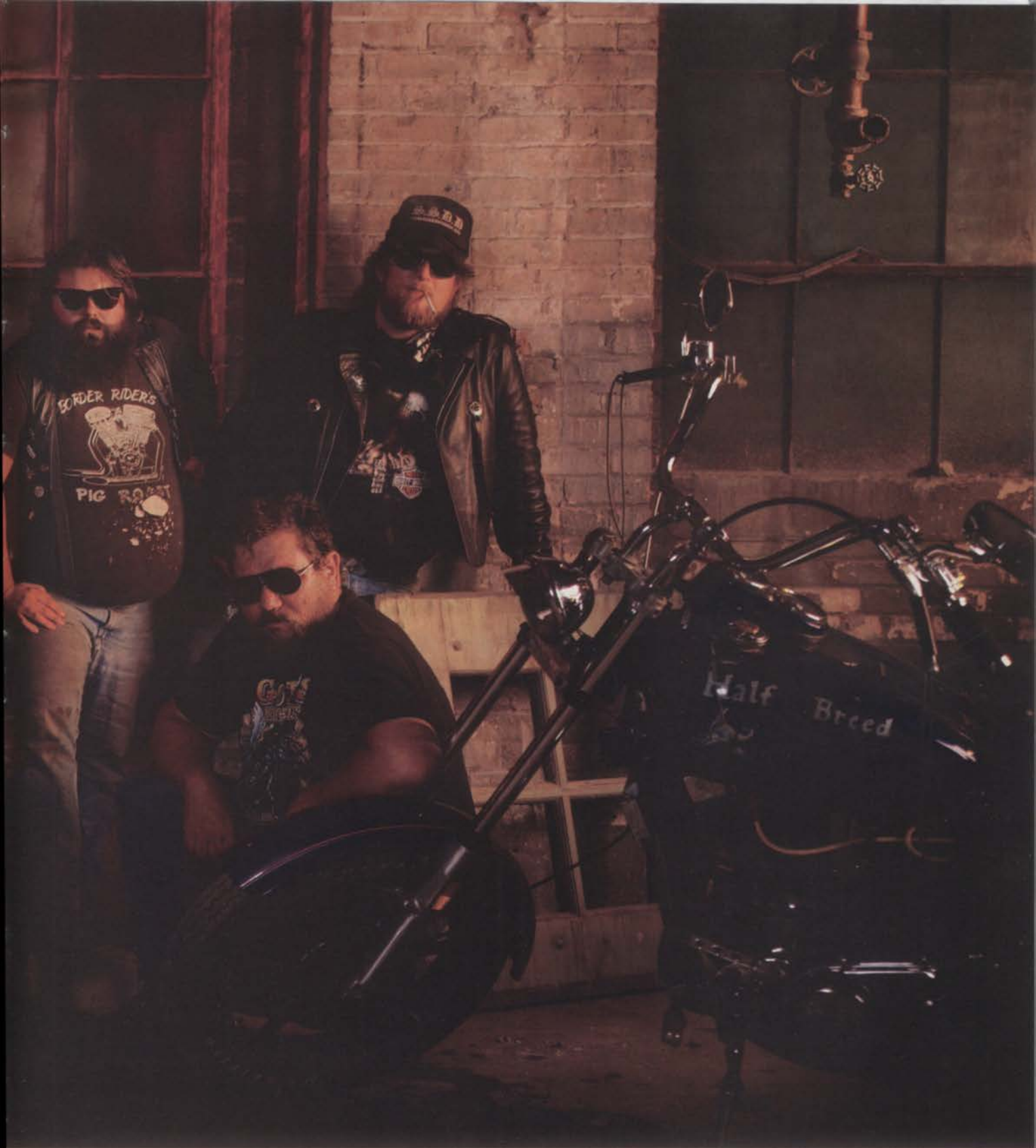
Granted, DURSBAN® Turf Insecticide won't do you much good in a dark alley. But when it's time to get tough on surface-feeding insects, it doesn't make any sense to take chances. What makes sense is using the

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jacket during application is, of
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Financial Corner

INVESTIGATE INCOME POTENTIAL BEFORE TAKING EARLY RETIREMENT

THINKING ABOUT retiring and maybe doing it early — at age 62, or even 55? Take a hard look at what you might give up by retiring early and what types of employee benefits affect your decision.

Look at the bottom line of any early retirement offer from your employer before you take advantage of such a policy. Is your pension based on years of service or a set age?

Many private pension plans cut benefits by 3 percent to 7 percent for each year you retire before age 65; if benefits begin early, they are expected to be paid over a longer period. Does your employer offer an early pension or a supplemental income to offset the absence of Social Security benefits?

Also check on your health and life insu-

**Plan for living
on about 80 percent
of your current income
during retirement,
and don't forget to
figure interest rates into
your retirement dollars.**

rance benefits. Are they carried into retirement? If not, the cost to replace these benefits could be expensive.

Check if your employer offers a bonus based on years of service or annual salary which covers those years between early retirement and the age at which the employee's qualified plan distribution becomes available.

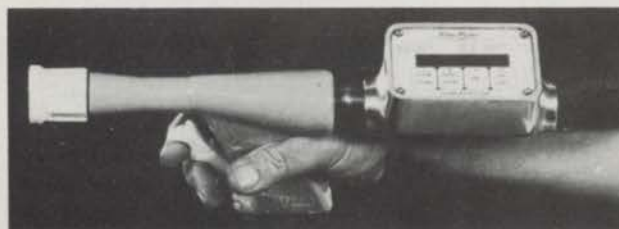
How can you best use employee benefits that affect early retirement? If you are a participant in your employer's pension or profit sharing plan, you can choose among the distribution options available. For example, whether to take a lump-sum payment, draw a regular pension check or defer payment.

If you've saved money in an IRA, you'll have to pay a 10 percent penalty tax — be-

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sides the regular income tax — on previously tax-deductible contributions withdrawn before age 59 1/2, unless a specific exception is met.

Exceptions include distributions that are part of a series of substantially equal periodic payments, at least annually, for the life or life expectancy of the IRA owner, or for the joint lives or joint life expectancies of the IRA owner and his or her beneficiary.

The early withdrawal penalty tax won't apply if distributions are made under a method that qualifies for this exception.

Payouts from a 401K plan before age 59 1/2 are also subject to a 10 percent penalty. But it won't hit if your employer's plan specifically provides for such early retirement, so long as it's not earlier than 55 and your payout is on account of your actual early retirement.

What lifestyle do you desire? Because your spending habits will likely change during retirement, it's important to plan for living on about 80 percent of your current income during retirement. No matter how modest a person's mean, chances are that expenditures for leisure activities and hobbies will increase after retirement and become the mainstay of daily life. Retirees should allow a generous amount for these activities because the degree of enjoyment in retirement may depend heavily on them.

Social Security was never intended to pro-

vide all of one's needed retirement income. For example, if you retire in 1987 at age 62, your Social Security benefits will be 20 percent lower than if you wait until age 65.

Retiring early means your money has to stretch over a longer period of time. Here are some questions to ask when considering whether or not to take early retirement.

Can you afford to retire? Here's an exercise that demonstrates how much money is required during retirement to pay bills and maintain your current standard of living. Let's say your current income is \$45,000 and you are spending \$40,000 of that to pay the bills. Industry experts estimate that you will need approximately 80 percent of this figure to maintain your current standard of living in retirement.

If you multiply \$40,000 by 80 percent, \$32,000 is approximately what is needed for each year of your retirement. If you calculate early retirement at 58 years and life expectancy at 78 years, that means you would be retired for approximately 20 years. That's 20 years at \$32,000 per year, or \$640,000 — the least amount you'll need to finance your retirement and to avoid outliving your resources.

Don't forget to figure interest rates into your retirement dollars. If you figure \$40,000 a year, a 4 percent inflation rate will balloon into \$72,000 in 15 years.

How much insurance will you need? A well-rounded retirement plan includes a balance of four types of insurance: life, health, disability and property/casualty.

Health insurance is an essential tool in preventing an illness from draining a person's finances. Even if you start collecting Social Security retirement benefits at 62, Medicare benefits under Social Security do not begin until you are 65.

What is your tax liability? Many people automatically assume their tax brackets will be significantly lower at retirement. But if you have done a good job of saving, that won't necessarily be the case.

The new tax law also replaced 10-year averaging with five-year averaging of lump-sum distributions from qualified retirement plans. The new, five-year formula may be available one time only if you're at least age 59 1/2 when you receive your lump-sum distributions.

If your lump-sum distribution meets all requirements, you may elect favorable tax treatment.

Is your estate in order? It's important to have an updated will drawn to ensure proper handling of your assets upon death. You may want to discuss with your tax attorney or accountant potential tax savings of trusts, unified tax credits and gifts. — *IDS Financial Services.* ■



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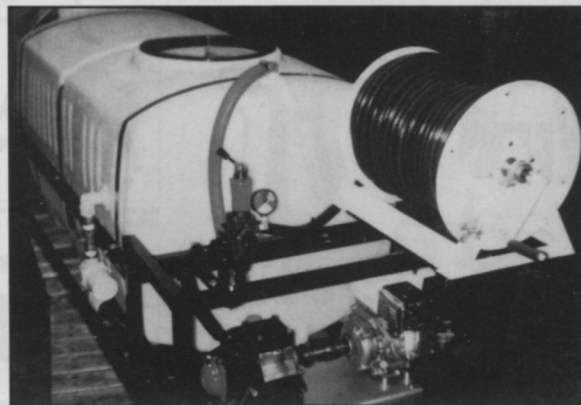
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People

MONSANTO HAS named **Cheryl Sharpe** manager of public relations and environmental affairs.

She joined the company in 1989 as manager of strategic planning. Her new responsibilities include market support programs and communications on environmental and other public policy issues affecting the lawn and landscape maintenance industry, special events and customer relations.

She's also been tapped to undertake development and implementation of comprehensive environmental education efforts to begin in 1991.

Also at Monsanto, **David Harper** has assumed the duties of national sales director.

In this post, he oversees the continued expansion of the company's regional marketing organization.

Staffing and program expansions under his supervision will reflect an increased focus on regionalized marketing efforts for the company, and will accommodate



Sharpe



Fedigan

new product introductions and continued sales growth expected over the next few years.

Harper is a 14-year veteran of Monsanto.

Ted Pederson was recently promoted to director/division manager of Kubota Tractor Corp.'s Northern division.

A Kubota employee for 11 years, he most recently was district manager for the Southern district of the Southeast division and regional sales manager for Kentucky and Tennessee.

Hypro Corp. has announced the addition of **Kevin Link** to its customer service

department. His duties include customer service, sales and expediting.

J. Leonard Park has been appointed president, chief executive officer and treasurer of Park Seed Co.

With the company for 15 years, he has spent the last eight as senior vice president for marketing.

He has strived to improve seed and plant varieties and has served as president of several industry organizations.

At Lebanon Chemical Co., **Richard Fedigan** has been named purchasing and customer service manager for the turf products division.

He is responsible for purchasing pesticides, managing inventory, supervising customer service personnel and administering manufacturers' marketing programs.

He joined Lebanon last year and worked in the farm department as a crop protection product manager.

Before starting at Lebanon, Fedigan worked for Monsanto Agriculture Co. ■

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Fine Lawn Research introduced Finelawn 5GL that yields a semi-dwarf rich green turf that outperforms bluegrass varieties in hot, dry regions and locations that will receive only minimal maintenance.

This variety combines drought resistance along with resistance to frost and winter freezes without any sacrifice in quality.

In addition, it also exhibits a strong resistance to leaf spot and brown patch which makes a good performer in shaded areas. It's expected to find extensive use on industrial and school grounds, office campuses, parks, large estates and along highway rights-of-way and median strips. It's also well suited for athletic practice fields and playgrounds that receive heavy physical punishment.

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An array of attachments are available to help make the **Excel** Hustler outfront rotary mower reliable for winter snow removal. These include a dozer blade,

Lighting has Detachable Solar Panels

Northern Hydraulics has developed a solar-powered landscape light that has a longer lasting charge, is brighter and includes a detachable solar panel for remote mounting.



Detach the solar panel and mount it up to 12 feet away to optimize the sun's power, while allowing the light to be positioned where it's needed most.

The solar panel provides up to 12 hours of light from only six hours of sunlight charging. The light has an automatic setting that will turn the light on at dusk and off at dawn. It can also be controlled manually.

Circle 171 on reader service card

snow thrower, rotary broom and cab heater. Accessories such as tire chains, wheel weights and rear weight kits are also available.

The attachments allow owners to take full advantage of their investment rather than having it sit idle through the winter months.

The 60-inch V-blade is constructed of

11-gauge welded steel for durability with two replaceable 3/16-inch steel scraper blades. The 60- or 72-inch dozer blade lets you move snow with ease. The reversible blade can be hydraulically positioned up to 30 degrees right or left.

The open-center auger design on the snow thrower feeds snow directly to the hydraulically controlled spout.

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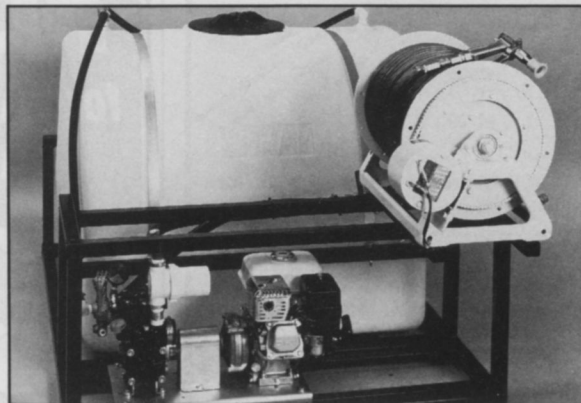
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The cab with tinted safety glass reduces glare and provides operator comfort while the rotary broom is ideal for light snowfalls on sidewalks and other paved areas.
Circle 172 on reader service card

Maruyama Manufacturing has initiated production of its new engines as part of its new string trimmer/brush cutter product line.

The engine on these units feature commercial grade, heavy-duty bearings, chrome cylinders and Walbro injection carburetors. It develops a high level of torque at a higher rpm, giving it a longer engine life and better cutting characteristics under load.

The brushcutters feature an effective high/low oscillation vibration dampener. The gearhead and clutch areas have a total of six bearings. The cutting head has chrome-moly gears which effectively withstand shock.

Circle 173 on reader service card

The add-it automatic fertilizer injector from **TFS Systems** dispenses fertilizer at a preset, proportionate rate. A new design eliminates the need for any type of air relief valve, which means the injector can operate at pressures up to 125 psi.

Because the unit requires no electricity to operate and has no pressure loss, it can be used with drip, subsurface and conventional sprinkler systems. The system won an award for its design from the American Society of Agricultural Engineers.

Circle 174 on reader service card

A multipurpose service vehicle designed for landscape contractors is now available from **Stahl**.

Among its features, the Landmaster Dump Body includes an 8-foot dump

body with a 2.3-cubic-yard bed constructed of rust-resistant galvanized steel and a heavy-duty double-action tailgate with adjustable material chute. It has 35 cubic feet of storage for tools, supplies and materials. Plus the all galvanized steel service body is independently mounted around the dump body.

It mounts easily on a one-ton 60-inch chassis for increased maneuverability in tight locations. Options include a winter vehicle with snowplow and salt spreader.

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Howard Price Turf Equipment has introduced its new 1260 Turf Blazer rotary mower. A combination of a 60-inch mower outfront and two 38-inch hydraulically operated wings provide 75 percent increased capacity over a standard 72-inch mower.

The wings are strategically located in line with drive wheel pivot points for maximum trimming capabilities even under trees and bushes.

Circle 175 on reader service card

Indigo Kentucky Bluegrass is now available from **Pickseed West** for fine turf use. Its dark green color was specifically chosen and bred to act as a natural complement to varieties such as Alpine, America, Nugget and Touchdown.

Indigo has good to excellent resistance to *Helminthosporium* leaf spot and melting out diseases; summer brown patch; leaf, stem and stripe rust; powdery mildew and stripe smut.

In addition, it develops an aggressive,

spreading rhizomatous root system and many tillers.

Circle 176 on reader service card

The Super Shovel Model SS-60 from **Kobelco America** is small enough to pass through a standard door frame and capable of digging to a depth of 40 inches. It was designed to work best in confined areas.

This crawler-mounted unit is powered by a Kawasaki 3.5-h.p. engine with a 12.3-cubic inch displacement. The shovel is 43 inches high and 20 inches wide and can easily be transported in a mini pickup truck.

Operators can either stand on the machine's metal platform or sit on its bicycle-style seat.

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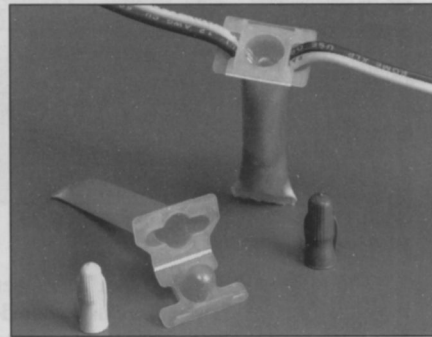
Nissan Kizai Nice has added the N150-2 to its line of MiniGiant excavators. The model features independent boom swing for maximum productivity within the tightest spaces.

Weighing slightly more than 2,900 pounds, it has a digging depth of almost 8 feet while exerting only 3.2 psi ground pressure.

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Easy to Install Splice Kits

3M recently introduced two 600-volt UL listed versions of the original DBR and DBY direct bury splice kits. These new kits can be used for underground connections up to 600 volts.



Applications can include landscape irrigation and lighting.

The splice kits are designed for quick underground connections. They include a plastic tube with a hinged cover on one end. The tube is pre-filled with a silicon insulating gel.

All the operator needs to do is strip the wires to be spliced, apply an electrical spring connector, insert the splice in the tube and snap the cover closed.

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Product Profile

WORKING WITH TOUGH MOWING CONDITIONS

JOE RITCHIE, owner and operator of Joe Ritchie Landscape Maintenance, Sarasota, Fla., has a simple formula for success. And it's obviously working well for him, because his three-year-old business is growing and prospering.

"I know the guys working for me get tired of hearing it," Ritchie said. "But the five most important things in a service-oriented business like landscape maintenance are: quality, quality, quality, quality and quality."

Ritchie said he has built his strong position in the marketplace, and a sound reputation because he delivers the quality his customers like and expect.

"The majority of our new business comes from word-of-mouth because I don't advertise," he said. "I've built a good reputation with quality service."

Ritchie's landscape maintenance business, which consists of two two-member crews, is a 50/50 mix of residential and commercial customers located in and around Sarasota and Bradenton. The crews mow 73 sites weekly, including residential lawns, condominium complexes, industrial/factory facilities and the Holiday Inn Riverfront hotel complex in Sarasota.

In addition, Ritchie subcontracts all mowing jobs secured by Arrow Environmental, one of Florida's leading pest and weed control specialists.

Because of Florida's year-round mowing schedules and high regional rainfall, mowing schedules can become difficult to maintain.

"I think this area of Florida is home to some of the toughest cutting conditions you'll find anywhere in the country," Ritchie said. "During the peak growing season from August through September, or even October when rainfall is high, it can get pretty hectic. And if you're not using an efficient zero-turning-radius machine, it's easy to fall behind."

At the forefront of his mowing operation are two Grasshopper 718s equipped with 52-inch EZ-lift decks and Quik-D-Tatch® vacuum grasscatchers.

"We consider the zero-turning-radius Grasshoppers our front-line mowers," Ritchie said. Grasshoppers are the best-suited mowers for his business needs, and refers to their design as "engineering simplicity."



Ritchie's two two-member crews mow 73 sites weekly.

"The longest downtime I can remember having with a Grasshopper was just two-and-a-half hours. They're the easiest mowers to service and maintain," he said. "Because of the efficient layout of the blade drive belt and tensioning system, I can change a belt in five minutes compared to 20 or 30 minutes on some other units I've done."

Despite his hectic schedule, Ritchie finds time for community service involvement. An active participant in the Sarasota SCORE Chapter, Senior Core of Retired Executives, he has served as a lawn care panelist/expert at a seminar for aspiring small businessmen.

Involvement in this and other community activities and projects earned Ritchie the honor of being named SCORE's Small Businessman of the Year.

He started in 1973 with only a few customers, one rider and one edger. Those lawn care beginnings led to five successful years as a lawn and garden equipment retailer, then into his present landscape maintenance business.

Success has never been far from Ritchie, a blessing he attributes largely to sound business practices, qualifying his prospects and his philosophy that places quality service first.

"When I got back into the landscape maintenance business three years ago, my first month's billing was pretty respectable," he said. "Today we bill 10 times as much and are still growing. And Grasshopper has certainly played a major role in our success and growth."

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MidAm '91

Calendar

NOV. 12-15

The Green Industry Expo, Nashville Convention Center, Nashville, Tenn. Contact: ALCA, 405 N. Washington St., Falls Church, Va. 22046, 703/241-4004; PGMS, 10402 Ridgland Rd., Suite 4, Cockeysville, Md. 21030, 301/667-1833; or PLCAA, 1000 Johnson Ferry Rd. NE, Suite C135, Marietta, Ga. 30068-2112, 404/977-5222.

NOV. 13-16

New York State Turfgrass Association's Turf and Grounds Exposition, Rochester, N.Y. Contact: NYSTA, P.O. Box 612, Latham, N.Y. 12110; 800/873-8873.

DEC. 4-5

Southern Grounds and Turf Maintenance Exposition, Myrtle Beach Convention Center, Myrtle Beach, S.C. Contact: South Carolina State Board for Technical and Comprehensive Education, 111 Executive Center Dr., Columbia, S.C. 29210; 800/553-7702.

DEC. 4-5

37th Rocky Mountain Turf Conference, Holiday Inn, Denver, Colo. Contact: Rocky Mountain Regional Turfgrass Association, P.O. Box 903, Parker, Colo. 80134; 303/688-2268.

DEC. 4-6

15th Annual Grounds Maintenance Conference and Trade Show, Greenville-Spartanburg Airport Marriott, Greenville, S.C. Contact: S.C. Landscape and Turfgrass Association, P.O. Box 325, Clemson, S.C. 29633.

DEC. 10-13

21st Georgia Turfgrass Conference and Trade Show, Hyatt Airport Hotel, Georgia International Convention and Trade Center, Atlanta, Ga. Contact: Georgia White, Georgia Turfgrass Association, 4565-A S. Berkley Lake Rd., Norcross, Ga., 30071; 404/447-4985.

DEC. 10-13

Ohio Turfgrass Conference and Regional Show, Cincinnati Convention/Exposition Center, Cincinnati, Ohio. Contact: John Street, OTF, 2021 Coffey Road, Columbus, Ohio 43210; 614/292-2601.

DEC. 12-14

Desert Turfgrass and Landscape Conference and Show, Bally's Resort, Las Vegas, Nev. Contact: Nevada Cooperative Extension, 953 E. Sahara Ave., — S.T.&P. Building, Suite 207, Las Vegas, Nev. 89104; 702/731-3130.

JAN. 7-10

45th Annual Northeastern Weed Science Society Meeting, Stouffer Harborplace Hotel, Baltimore, Md. Contact: Bradley Majek, 609/455-3100.

JAN. 7-9

29th Annual Nebraska Turfgrass Conference, Holiday Inn Central, Omaha, Neb. Contact: Don Ellerbee, Nebraska

(continued on page 92)

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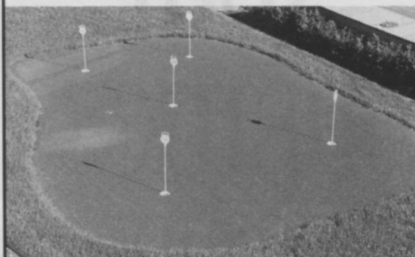
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Classifieds

RATES

All classified advertising is 75 cents per word. For box numbers, add \$1 plus six words. All classified ads must be received by the publisher before the 10th of the month preceding publication and be accompanied by cash or money order covering full payment. Submit ads to: Lawn and Landscape Maintenance magazine, 4012 Bridge Avenue, Cleveland, Ohio 44113. Fax: 216/961-0364.

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Landscape construction and maintenance business for sale in beautiful Sun Valley, Idaho. The sale also includes a 4-bedroom, 2-bath home with office and shop. This is an incredible opportunity to own a 10-year-old business that is highly respected and profitable. There is unbelievable potential for future growth in this booming resort community. Call or write Bill Pereira, P.O. Box 1755, Hailey, Idaho 83333; 208/788-4447.

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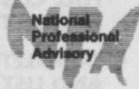
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FREE CATALOG — Green industry business management products and services. Nilsson Associates, consultants, 203/621-6199 or write: 374 Hart St. Southington, Conn. 06489.

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STATEMENT OF OWNERSHIP

Statement required by the Act of October 23, 1962. Section 4369, Title 39, United States Code, showing the ownership of *Lawn and Landscape Maintenance* published monthly at 4012 Bridge Avenue, Cleveland, Ohio 44113-3320 Cuyahoga County.

The name of the publisher is: Maureen Mertz, 4012 Bridge Avenue, Cleveland, Ohio 44113. The name of the editor is: Cindy Code, 4012 Bridge Avenue, Cleveland, Ohio 44113.

The owners are: G.I.E. Incorporated Publishers, 4012 Bridge Avenue, Cleveland, Ohio 44113; Richard J.W. Foster, 4012 Bridge Avenue, Cleveland, Ohio 44113; Nancy J. Foster, 4012 Bridge Avenue, Cleveland, Ohio 44113; Maureen Mertz, 4012 Bridge Avenue, Cleveland, Ohio 44113.

The known bondholders, mortgagees and other security holders owning or holding one (1) percent or more of total amount of bonds, mortgages or other securities are: Arthur Brown, 5277 Gallagher, Whitmore Lake, Michigan 48189.

Average number of copies each issue during preceding 12 months, and of single issue nearest to filing date, respectively, are as follows: Total number of copies printed (net press run) 32,920/34,300; paid circulation sales through dealers and carriers, street vendors and counter sales 0; mail subscriptions 18,270/20,356; free distribution by mail, carrier or other means (samples, complimentary or other free copies) 13,593/13,107; total distribution 31,863/33,463; copies not distributed (office use, left over, unaccounted, spoiled after printing) 1,057/837; return from news agents 0; and total 32,920/34,300.

I certify that the statements made by me above are correct and complete.

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Calendar

(continued from page 90)

Turfgrass Foundation, 2727 W. Second St., P.O. Box 2118, Hastings, Neb. 68902-2118; 402/463-5418.

JAN. 8-11

Eastern Pennsylvania Turfgrass Conference and Trade Show, Valley Forge Convention Center, King of Prussia, Pa. Contact: Pennsylvania Turfgrass Council, Landscape Management Research Center, Orchard Road, University Park, Pa. 16802; 814/863-3475.

JAN. 9-11

29th Annual North Carolina Turfgrass Conference and Exhibit, Charlotte, N.C. Contact: A.H. Bruneau, Box 7620, North Carolina State University, Raleigh, N.C. 27695-7620; 919/737-2326.

JAN. 21-23

Midwest Regional Turf Conference and Trade Show, Adam's Mark Hotel & Conference Center, Indianapolis, Ind. Contact: Jeff Lefton, Agronomy Department, Purdue University, West Lafayette, Ind. 47907; 317/494-9737.

JAN. 21-23

61st Annual Michigan Turfgrass Conference, Clarion Hotel and Conference Center, Lansing, Mich. Contact: Michael Saffel, Plant and Soil Sciences Building, Crop and Soil Sciences Department, Michigan State University, East Lansing, Mich. 48824; 517/353-9022.

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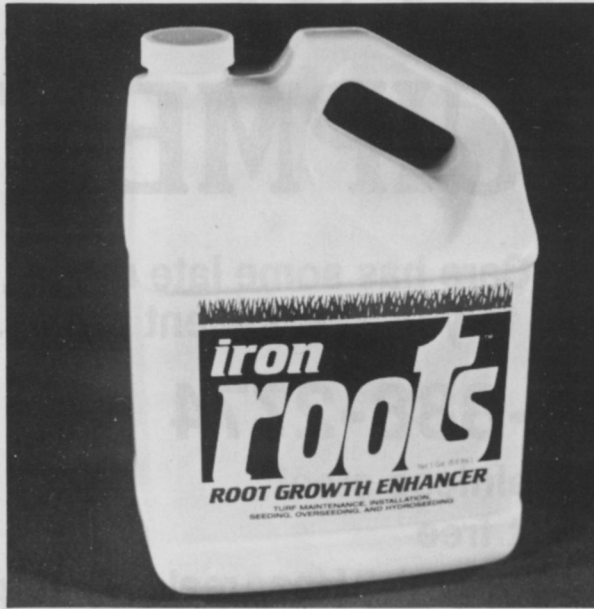
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Ford 1 Ton, Tanker	1986	D
Ford 1 Ton, Tanker	1986	D
Ford 1 Ton, Tanker	1986	D
Ford 1 Ton, Tanker	1986	D
Ford 1 Ton, Tanker	1986	D
Chevy 1 Ton (Fiberglass Tank)	1986	D
Chevy 1 Ton (Fiberglass Tank)	1986	D
Ford 1 Ton, Tanker	1986	D
Ford 1 Ton, Tanker	1985	D
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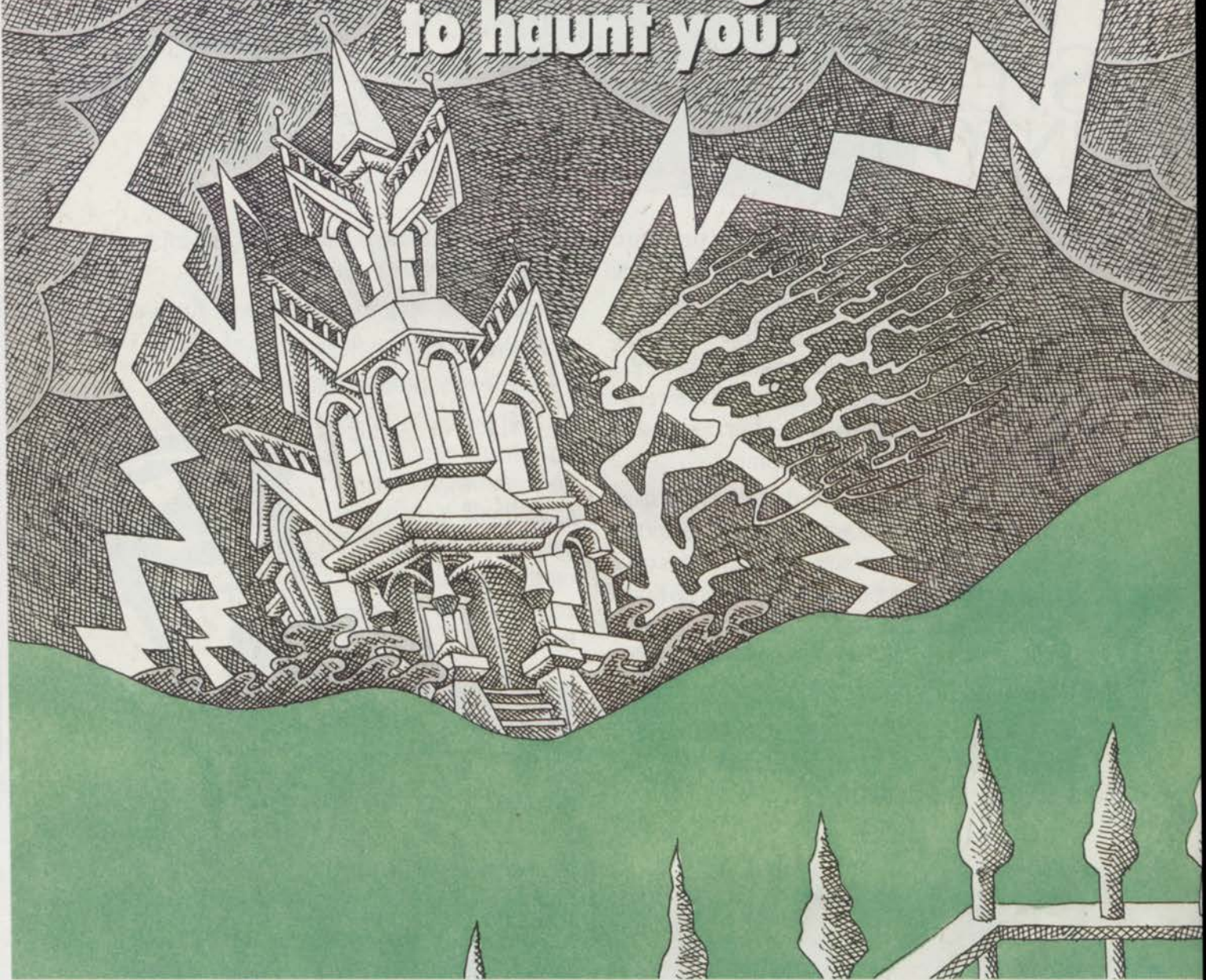
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