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Cover Photo

by Francis Farmer,
Hattiesburg, Miss.

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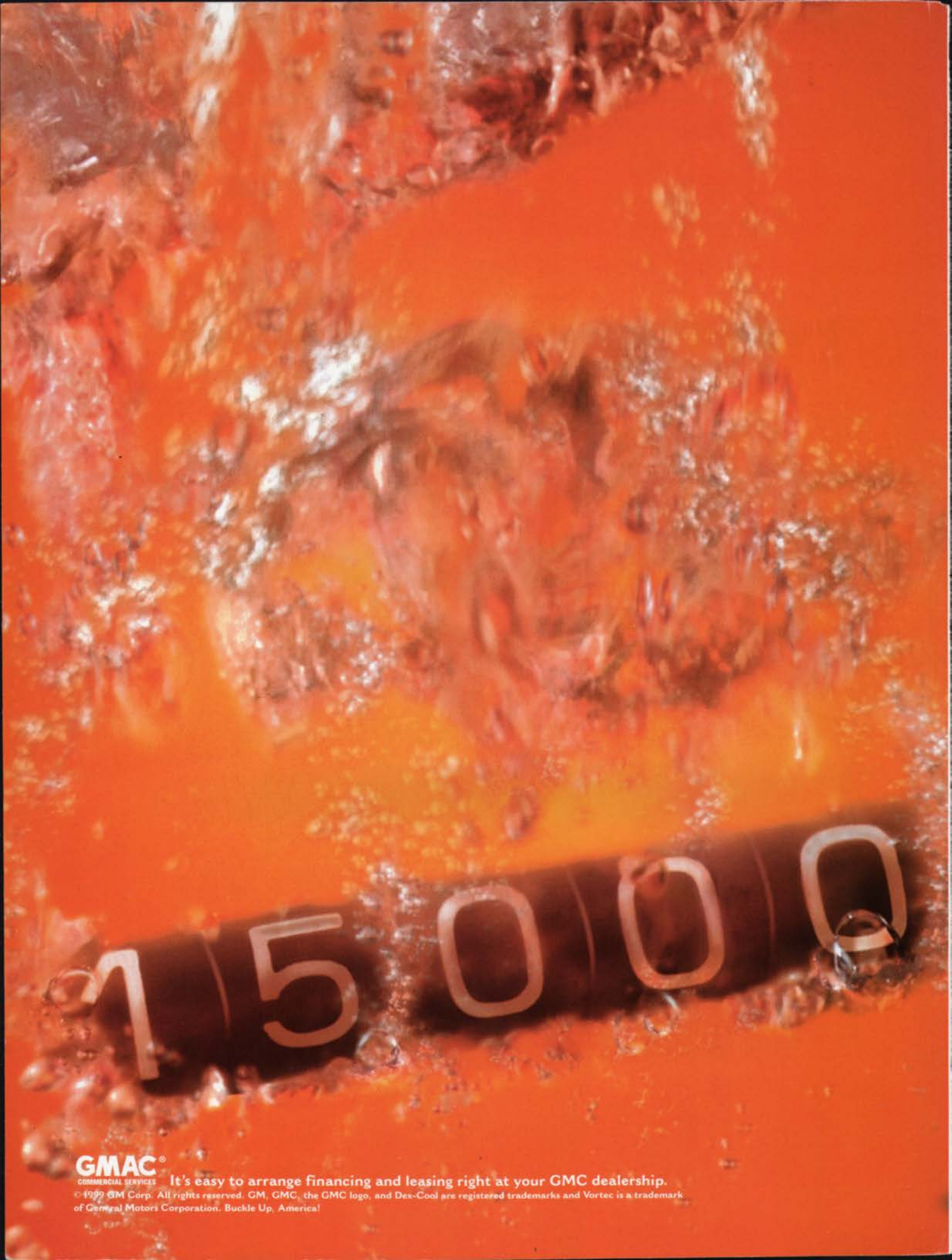
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1999 TURF SEED BUYERS' GUIDE

An overall market report, a look at new scientific developments, a listing of suppliers and more.



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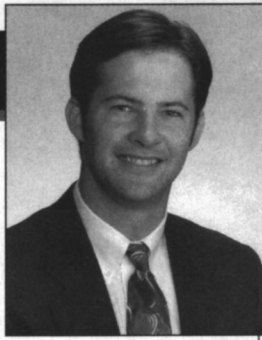
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Bob West
Editor

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ou don't have to read the newspapers or news magazines for long these days before you encounter the phrases "virtual world" or "electronic community."

Obviously, the Internet has made it just as easy for us to communicate with someone on the other side of the globe as on the other side of the street.

While enjoying the benefits of such a community in your personal life may be nice, it's the potential professional advantages, particularly for lawn care and landscape contractors, that should really generate some Internet excitement.

One of the most impressive characteristics of this industry has always been contractors' willingness to share ideas, information and solutions with each other. We've seen indications of the powerful potential that comes from combining this willingness to share with modern technology through the growth of the Bulletin Boards at Lawn & Landscape Online (www.lawnandlandscape.com). Current dialogue "threads," as they're called, explore issues like the benefits of offering hydroseeding, the performance of one manufacturer's most popular mower and marketing to new customers.

In fact, more than 17,000 visitors have made their way to our website thus far – at an average of almost 600 a day in the last month. And, we believe, that's only the beginning.

To that end, we'll be exploring the potential of this new technology with our first organized chat session via Lawn & Landscape Online. The big event is scheduled for Thursday, June 10, from 8:00 to 9:00 p.m., Eastern Standard Time.

The focus of the session will be the consolidating nature of the industry, and participants in the session will have the opportunity to ask questions and receive immediate answers from myself, *Lawn & Landscape* Assistant Editor Nicole Wisniewski and, perhaps most importantly, Hal Cranston, who has been involved in the development of LandCare USA since its formation.

We chose a Thursday evening because our hit reports indicate that is one of the most popular times for contractors to visit Lawn & Landscape Online. And we decided to focus on consolidation for the topic because it's obviously one of the hottest topics in the industry and the subject of most questions I field from readers.

The Internet is clearly a part of the future for all of us. Contractors that aren't taking advantage of the newest technology to network with their colleagues and continue their own professional education are doing the same disservice to themselves as contractors still mowing lawns with walk-behind reel mowers.

Get online today, and make the most of the opportunities. **LL**

Bob West

Lawn & Landscape

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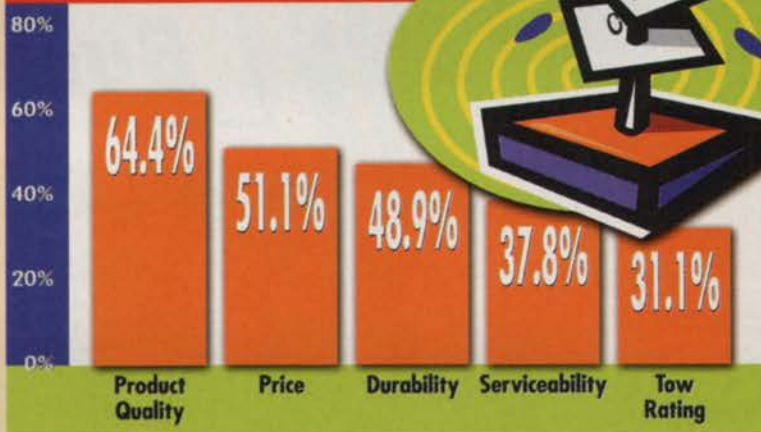
TRUCK TIME

There are several factors a landscape contractor should consider before buying a service vehicle. But how do contractors weigh the pros and cons in order to walk away from the purchase knowing they made a wise investment.

In a survey of *Lawn & Landscape* readers, product quality topped the list of criteria, with 64.4 percent respondents mentioning its importance as a decision-making factor. Price was the second most mentioned feature at 51.1 percent, with durability coming in a close third place with 48.9 percent.

Serviceability (37.8 percent) and tow rating (31.1 percent) scored at fourth and fifth, respectively. Other options listed in the survey were (listed in descending order of their percentage scores): gas mileage, brand loyalty, warranty, adaptability, manufacturer support, bed size, dealer location, cab size, storage capabilities and safety features.

QUEST FOR QUALITY



(Source: Lawn & Landscape Reader Survey)

NOVARTIS T&O NAMES NEW CHIEF

GREENSBORO, N.C. — Randy Williams is obviously someone who likes the challenges of an unpredictable future.

Effective June 1, Williams was named vice president of the global turf and ornamental business for Novartis, replacing Tom McGowan, who retired. Williams spoke with *Lawn & Landscape* about the challenges facing all pesticide manufacturers that are driving consolidations around the

world and the opportunities he sees for an expanded product line from Novartis.

"I'm already familiar with a lot of the new active ingredients we have coming through the pipeline that will fit the landscape, golf and lawn and garden markets," Williams noted, adding that he moves into this new position from his role as vice president of the fungicide business unit.

"In particular, we have a strong pipeline of about nine reduced risk products currently at the EPA for approval. We should be seeing a lot of them come to market in the next 12 to 24 months."

In particular, Novartis is optimistic about its new technologies in the herbicide and insecticide categories, which should broaden its product line.

"I'd say we'll be much more aggressive in new product developments in the near future," Williams added.

One development making such an aggressive approach possible is the increased efficiency Novartis enjoys as a result of the Ciba/Sandoz merger that formed the company in 1996.

Sandoz was doing a lot of the same things Ciba was doing in the market, and we've been able to eliminate a lot of the duplication," Williams explained. "That's why we're going to continue to see consolidation in the supplier side of the industry because margins have gotten tighter and companies need to eliminate the wasted resources."

KANGA, ARIENS FINALIZE DEAL

BRILLION, WIS. — The rising popularity of compact utility loaders has led to another part-

nership, as the Ariens Company and Kanga Loaders, Bixby, Okla., announced a manufacturing and distribution agreement in the U.S.

Ariens, which is also the

'We have a strong pipeline of about nine reduced risk products currently at the EPA for approval.' — Williams

parent company for Gravelly, will offer a limited number of Kanga's Mini Skid Steer Loader and attachments through Ariens and Gravelly dealers this season and begin manufacturing the machines as well Jan. 1, 2000. The Kanga machines have been manufactured in Australia until now.

"We have been manufacturing our loaders in Australia since 1981, and we look forward to this agreement, which

(continued on page 12)





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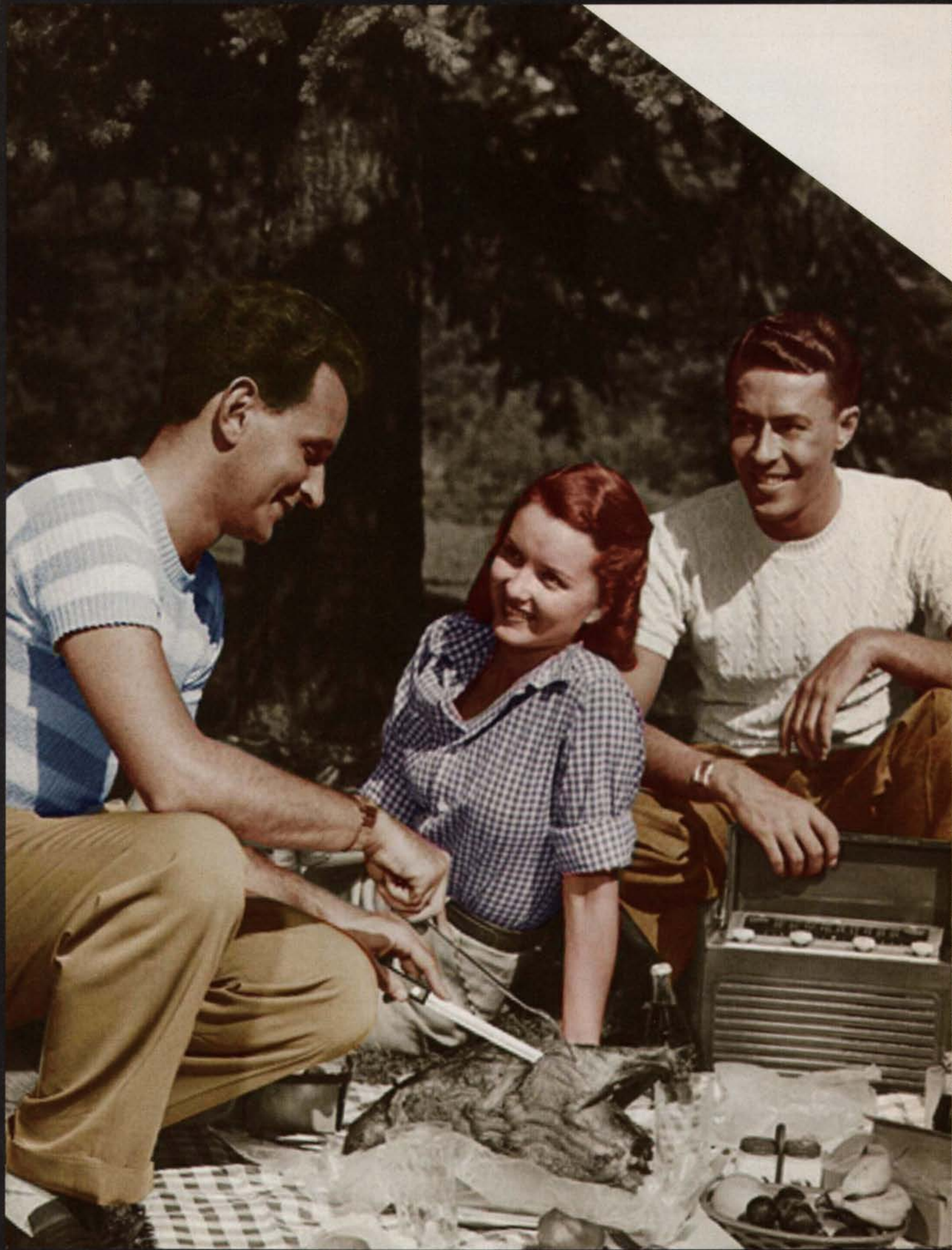
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(continued from page 8)

will allow us to manufacture our loaders locally in the United States, the largest market in the world," noted Brent Matthews, U.S. manager for Kanga Loaders USA.

Kanga will continue to market its loaders to professional contractors under the Kanga name, while details regarding the marketing of Gravelly's unit have not been finalized as of yet.

Gravelly hopes to introduce its model at the International Lawn, Garden & Power Equipment Expo in Louisville, Ky., in July.

PLCAA PLANS LEGISLATIVE DAY

WASHINGTON, D.C. — Lawn care and landscape professionals will visit Capitol Hill July 19-20 as part of the Professional Lawn Care Association of America's Legislative Day on the Hill.

"Water issues, one-week prenotification bills, FQPA, pesticide registry dilemmas and business issues galore are cropping up all over the country," noted Tom Delaney, PLCAA's executive vice president. "Legislative Day gives companies a platform to make their case on the Hill."

In addition to scheduled visits to their own politicians' offices to speak up for the industry, attendees will partake in the Arlington Cemetery Renewal and Remem-

brance project for the third year, where contractors donate their turf care expertise for improvements at Arlington National Cemetery.

For information, contact PLCAA at 800/458-3466.

A CENTURY OF SNA

ATLANTA, GA. — From humble beginnings with nine charter members forming a group to ensure the survival of the nursery industry in the South, the Southern Nursery Association celebrates its centennial birthday in 1999.

The association will highlight its 100th anniversary with a celebration at its annual convention and trade show, to take place July 30-Aug. 1 in Atlanta. More than 10,000 attendees are expected for the show, or about 200 times as many as the 50 that arrived in Chattanooga, Tenn., at the SNA's 1899 convention.

"SNA has led an important role in the development of

CALENDAR

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JUNE 13-15 Turf and Landscape Field Days, Blacksburg, Va. Contact: 540/231-5897.

JUNE 14-15 Integrated Pest Management Conference, San Luis Obispo, Calif. Contact: 805/756-2869.

JUNE 15 Field Day 17, Rolesville, N.C. Contact: 919/556-0146.

JUNE 15 Kentucky Turfgrass Council Turfgrass Field Day, Lexington, Ky. Contact: 606/623-6130.

JUNE 17-19 Southeast Greenhouse Conference and Trade Show, Greenville, S.C. Contact: 800/375-3642.

JULY 15-16 Nebraska Nursery & Landscape Association Summer Field Day, Kearney. Contact: 816/223-1481.

JULY 16-17 Florida Certified Landscape

the horticultural industry in the South throughout these past 100 years," noted Bill Reese, SNA president. "And I foresee the SNA playing an even more important role as we approach the new millennium."

For more information on the SNA, call 770/973-9026.

ECONOMY MAY SLOW POWER EQUIPMENT SALES

ALEXANDRIA, VA. — An economic forecast conducted by the Outdoor Power Equip-

MORE ABT CHANGES

After taking a look at the various strengths of its acquired companies, AgriBioTech changed its business plans, according to John Zajac, director of ABT's turfgrass business unit, Henderson, Nev.

Originally, ABT planned on integrating its 34 turf seed companies into one organization operating under one name within the next year. Now the company plans to consolidate into two groups, Zajac said.

"One group will sell directly to the end user — retail and professional," Zajac explained. "The other group will remain a wholesale company and sell to the distributor."

The plan, which is in its implementation phase,

will help ABT focus its strengths on increasing its research involvement and developing a more efficient distribution method, according to Zajac.

In other news, Kent Schultze resigned his position as ABT board member and chief operating officer.

"We will build upon his work as we implement the integration plan developed by Schultze, our senior operations management team and employees," said Richard Budd, chairman and CEO.

ABT also announced the following appointments: Ken Budd, formerly general manager of ABT companies Lofts Seed, Budd Seed and Great Western, as group director for the mass merchants business unit and the southeastern U.S.; Bill Dunn, responsible for the north-eastern U.S. and Canada; Joe O'Donnell, southeastern U.S.; Bruce Ceranske, , midwest; and Doug Elkins, western U.S. and Mexico. — *Nicole Wisniewski*

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JULY 19-20 Iowa Nursery & Landscape Association Summer Field Day, Madrid and Ames. Contact: 816/233-1481.

JULY 20-23 Turfgrass Producers International Summer Convention and Field, Lansing, Mich. Contact: 800/405-8873.

JULY 21 Massachusetts Nursery & Landscape Association summer meeting and trade show, Springfield. Contact: 413/369-4731.

JULY 23-24 ALCA Masters in Management for the Landscape Industry, Chicago. Contact: 800/395-2522.

JULY 23-24 Aquascape Designs Parade of Ponds, Chicago, Ill. Contact: 800/306-6227.

JULY 23-27 ANLA Convention, Philadelphia, Penn. 202/789-2900.

JULY 24-27 American Nursery & Landscape Association Annual Convention, Philadelphia. Contact: 202/789-2900.

JULY 27 Midwest Regional Turf Field Day, West Lafayette, Ind. Contact: 765/494-8039.

JULY 28-31 Conference of the American Society for Horticultural Science, Minneapolis. Contact: 703/836-4606.

JULY 29-30 Eagle Point Educational Summit, Dubuque, Iowa. Contact: 800/678-6565.

JULY 30-AUG. 1 Southern Nursery Association Convention and Trade Show, Atlanta, Ga. Contact: 770/973-9026.

JULY 31 Landscape Contractors Association MD-DC-VA Certified Landscape Technician exam, Derwood, Md. Contact: 301/948-0810.

AUG. 4-5 Indiana Nursery & Landscape Association summer meeting, West Lafayette. Contact: 219/244-5274.

AUG. 4-7 Association of Professional Landscape Designers Summer Conference, Washington, D.C. Contact: 312/201-0101.

AUG. 6-8 TAN/MISSLARK Conference & Trade Show, Dallas, Texas. Contact: 512/280-5182.

AUG. 10 Nursery Grower's of Lake

County Summer Field Day, Madison, Ohio. 440/428-0022.

AUG. 12 Michigan Nursery and Landscape Association's Summer Field Day, East Lansing, Mich. Contact: 800/879-6652.

AUG. 18 Michigan Turfgrass Field Day, East Lansing. Contact: 517/321-1660.

AUG. 25-28 Philosophy of Design 1999, Nelsonville, Ohio. 803/513-3958.

AUG. 25-29 ANLA Landscape Operations Tour, Baltimore. 202/789-2900.

AUG. 26 Indiana State Lawn Care Association Summer Field Day, Carmel, Ind. Contact: 317/575-9010.

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USE READER SERVICE #17

MARKET TRENDS

ment Institute for consumer-type equipment and certain commercial turf products, predicts a slowdown by the end of model year 1999 and through model year 2000. The slowdown is attributed to an expected decline in housing starts and sales of existing single-family homes.

For 1999, all products except consumer walk-behind mowers and commercial riding mowers are expected to decline. For 2000, all products except consumer-type lawn tractors and commercial riding mowers are also anticipated to decrease.

The current forecast for model year 1999 is Sept. 1, 1998 through Aug. 31, 1999.

(continued on page 18)

ASSOCIATION NEWS

The **Ohio Turfgrass Foundation** donated \$197,000 to its 10-member technical advisory committee of researchers from Ohio State University and \$20,000 for scholarships presented to students of Ohio's turfgrass programs. OTF also elected new board of directors: Glen Pottenger, Hank Chafin and Chuck Darrah.

The **Texas Nursery and Landscape Association** came into official life earlier this year after the merger of the Texas Association of Nurseryman and the Texas Association of Landscape Contractors. Inaugural officers include Anne Muscat, chairwoman of the board; Jack Davis, allied director; Joe Burks, director-at-large; and Floyd Trammell, regional director.

Representatives of 10 industry organizations met in Washington, D.C. earlier this year to discuss a unified approach to utilizing water resources effectively. The meeting was the second organized by the **Irrigation Association** to increase political action on protecting the judicious use of water by concerned industries. The meetings have assumed a sense of urgency as Congress prepares to consider changing and reauthorizing the Clean Water Act.

The **Metro Atlanta Landscape & Turf Association** announced the MALTA Environmental Awards. Among the winners were: L.T.I. Landscape Techniques received the Grand Award for a single-family residential installation, \$25,000 to \$100,000; Watters & Chatham Landscape Co. received the Grand Award for a single-family residential installation, over \$100,000; and Ruppert Landscape Co. received the Grand Award for a commercial installation, over \$200,000.

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USE READER SERVICE #40

MARKET TRENDS

(continued from page 16)

LANDSCAPING POPULAR IN HOME IMPROVEMENT

NEW YORK, N.Y. – More than one-third of all homeowners – 36 percent, to be exact – have plans for some type of home improvement project for 1999, according to the American Express Retail Index survey.

On average, homeowners expect to spend \$2,747, with landscaping plans scheduled by 23 percent of respondents, which was third in popularity behind interior decorating (41 percent) and renovation/re-modeling (32 percent).

(continued on page 22)

PEOPLE



James Wier



Jim Watson

JB Instant Lawn of Silverton, Ore. announced the following promotions: **Joe Moorad** to Washington State sales manager and **Mark Kihlstrom** to the landscape retail manager for Western Washington.

Van Waters & Rogers named **Jim Watson** corporate accounts manager.

Cynthia Jones was named marketing coordinator for Rain Bird Sales Commercial Division.

Tony Brown was named marketing manager for turf, ornamental & retail products and **Keith Roach** was named communications manager for turf, ornamental & technical products at Dow AgroSciences.

United Green Mark named Ted Hopkins president and chief operating officer.

Simplicity Manufacturing announced the appointment of **James Wier** to the position of president and chief operating officer.

Michael Smith joined Irritrol Systems as district sales manager for the San Francisco Bay area and northern Sacramento Valley territory.

Lied's Landscape Design and Development hired **Charley Koch** to its landscape architectural staff.

Annalee Taylor joined the Ball Seed Co. as traffic manager.

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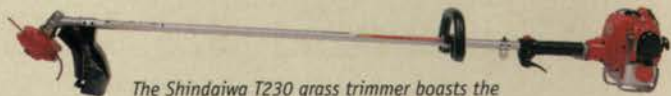
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(continued from page 18)

Unfortunately, two-thirds of the respondents expected to perform the work themselves, and only 51 percent of respondents said they would leave the work to a professional contractor if money was not a concern.

NEW HOLLAND ACQUIRES CASE

AMSTERDAM – New Holland, Harrisburg, Penn., and Case Corp., Racine, Wis., will unite to form a nearly \$12-billion global equipment company to reportedly be based in Racine.

The deal, which is still subject to Case shareholder approval, will create a new group controlled by Fiat, New Holland's parent company.

While the companies' products, geographic sales distribution and business mix are already complementary, according to New Holland, the merger will preserve the brand equities of both companies and strengthen their distribution network, combining Case's 4,900 and New Holland's 6,100 dealers.

At the same time, the merger brings about potential for \$400 to \$500 million in annual savings within three to four years by integrating production, purchasing and support activities costs. The savings generated, according to New Holland, will drive growth in agricultural equipment through coordinated expansion into new markets.

Case reported 1998 net revenues of \$6.1 billion while New Holland reported revenues of \$5.7 billion. **LL**

CATCHING UP WITH DAVEY TREE

KENT, OHIO - As the industry's consolidation efforts have raged over the past 18 months, The Davey Tree Expert Co. is one group that a number of people have speculated about. Will Davey parlay its powerful name recognition and \$300+ million in sales into an acquirer of landscape companies? Or would management consider selling to a company that would certainly pay a handsome price for such expertise?

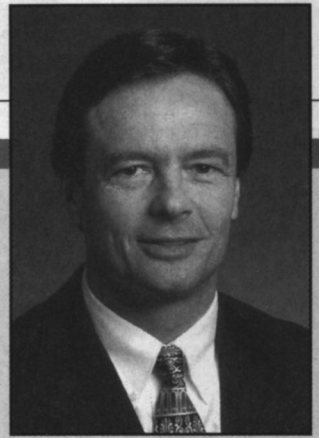
A visit with Chairman of the Board and CEO Doug Cowan and new President and COO Karl Warnke at the company's offices in Kent, Ohio, found that neither scenario is in Davey's plans.

"We're probably not going to try to participate in the big consolidation efforts with our commercial group," noted Cowan of the company's landscape maintenance division. "But we are going to participate in the consolidation of the tree care industry. We'll probably buy an average of three or four smaller tree companies a year, and we'll do so in a stealth mode.

"We will continue to pursue commercial grounds care companies through acquisition, but those efforts will be particularly focused in markets where we have a very strong tree care operation because then an acquisition would give us an opportunity to grow our residential tree care as well," Cowan continued.

"But ServiceMaster and LandCare have driven the prices for landscape companies beyond normal levels," he added. "I mean, this is not the Internet we're talking about, but there's an expectation out there now on the part of people who are selling that they should get more than dollar-for-dollar on sales. We've looked at it carefully, and we just can't justify paying those prices. And, unless ServiceMaster knows something that we don't, it's going to have a hard time justifying this investment over the long term."

Cowan and Warnke did go on to say, however, that landscape maintenance services will continue



Karl Warnke

to become a more important part of Davey's service mix.

"We have a document we call our Vision 2005, and it shows where we want to be with each of our major services in five years," noted Warnke. "In that, we call for our commercial services to play a much bigger role in the company and increase its contribution to our bottom line."

"We'll be involved in all aspects of the landscape, but our focus will always be on trees because that's our core competency," Cowan added.

Warnke now finds himself largely responsible for Davey's future growth in his new position.

"One of the most important parts of our strategy now is developing better synergy between the services that we have – residential, commercial, grounds maintenance, utility and our resource/consulting group," the 19-year Davey veteran explained. "Part of my responsibility as COO is to pull all of those groups together to see how we can leverage the strengths of each for the benefit of the rest.

"For example, I know we can do a better job sharing our marketing efforts than we have in the past," Warnke noted. "And a big part of our business is equipment, so the utilization of that equipment is critical. We need to do more cooperative planning with all of our services lines to take advantage of equipment that is interchangeable so units are never sitting idle."

Cowan said the recent changes in the industry provided a perfect time for this appointment of Warnke.

"One person shouldn't have all three titles that I had," he recognized. "And with all that has happened with consolidation of late, I wasn't doing a good enough job focusing on operations. Karl is from operations, however, so I have no doubt he'll be a better COO than I was. Meanwhile, I'll be freed up to do more long-term thinking and plan for where we want to go before the market consolidates much more." – *Bob West*

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TERRA TO SELL DISTRIBUTION

SIOUX CITY, IOWA – After exploring opportunities to sell the distribution portion of its business and then deciding not to sell it, Terra Industries surprised many by announcing that it signed a contract to sell its distribution business to Cenex/Land O' Lakes Agronomy Company for \$361 million.

In the deal, which is expected to close by late July, Cenex/Land O' Lakes acquires rights to the distribution business' earnings from April 1, 1999, forward.

Included in the sale are Terra's approximately 400 re-

tail farm service centers in the U.S. and Canada, and its 50 percent ownership position in the Omnium chemical formulation plants in St. Joseph, Mo., and Blytheville, Ark.

The distribution business, which includes about 2,600 employees across 31 states and Canada, reported 1998 revenues of approximately \$1.73 billion and operating income of \$21.4 million.

Depressed nitrogen prices battered Terra Industries' nitrogen production business,

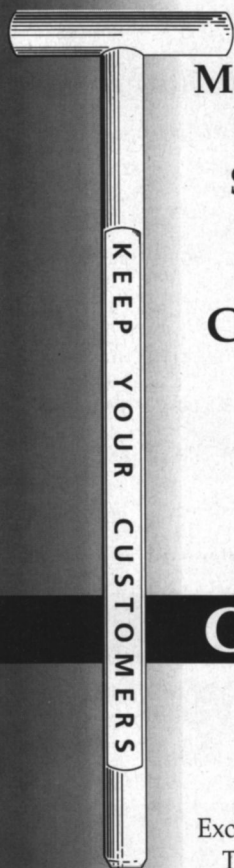
leading executives to give Terra distribution managers the opportunity to find a suitable buyer. That effort was reportedly suspended late in the first quarter of this year when the company decided not to sell the professional fertilizer business.

Terra anticipates a loss of less than \$10 million on the transaction and will use sale proceeds primarily to reduce its debt obligations.

"Terra is taking this action to provide the company a stronger financial base," commented Burton Joyce, president and CEO of Terra Industries. "With less debt,

Terra will have greater flexibility both to weather the trough of the current nitrogen cycle and to take advantage of future opportunities. The distribution business has been a valuable part of the company for over 30 years, but under current market conditions, Terra and its board of directors believe this sale is a prudent step for the company."

Cenex/Land O' Lakes and Terra have also entered into a three-year nitrogen fertilizer supply agreement through which Cenex/Land O' Lakes will purchase approximately the quantity that Terra Nitrogen currently supplies to both the distribution business and Cenex/Land O' Lakes. **LL**
– Angela Dyer



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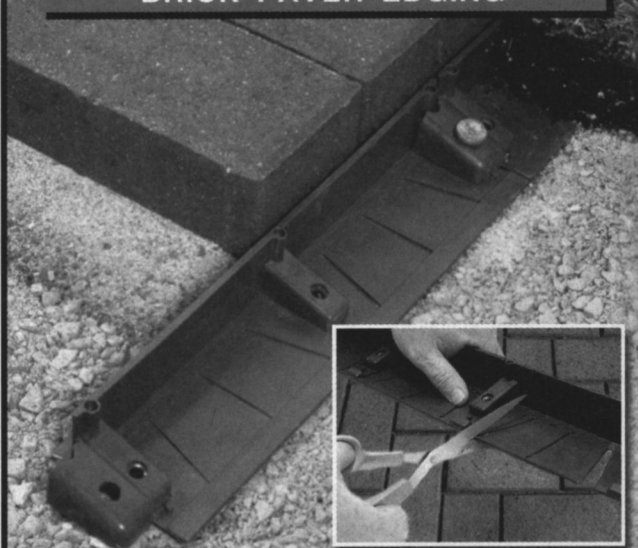
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*Only 4500 and 4600 have planetary final drives. PowrReverser option available only on these two models. High-performance SyncReverser™ transmissions available on 4300 and 4400. **Twin Touch® system available on all 4000 Series tractors with hydrostatic transmissions, even the 43-hp 4600.



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USE READER SERVICE #28



Environmental Forum

While the Food Quality Protection Act gets more and more of the legislative news focus, state governments are doing anything but sitting still.

In an interview with *Lawn & Landscape*, Fred Langley, manager of state government affairs, Responsible Industry for a Sound Environment, Washington, D.C., discussed legislative projects of interest to green industry contractors around the country.

WASHINGTON. "There is a study coming out that will focus on Puget Sound and King's County (Seattle, Wash.)," noted Langley. "We anticipate the study will report positive detection of pesticides."

The importance of the study is that it may serve as the basis for water quality protection regulations designed to battle run off of pesticide and fertilizer products, according to Langley. The issue is a political hot button because of the declining number of salmon in the Sound and the importance these fish play in the local economy.

"The city of Seattle believes there is an urban component contributing to the toxic load of the water," Langley related. "The city has already published ads in area newspapers telling citizens what they can do to protect the water quality,

and that includes no longer using pesticides or fertilizers."

Langley said contractors need to show the government how interested they are in working to fix the problem.

Questions for contractors to explore include:

- What are our loading and mixing operations like so there aren't residues left over?
- Do we need to apply liquid products in areas susceptible to product movement?
- Should we landscape some buffer zones around areas susceptible to movement?

CALIFORNIA. The Los Angeles City School Board voted to

'Unless other folks benefiting from all of this work step up to be counted, we may not have anyone to fight the fight.'

phase out the use of pesticides, following legislation passed in San Francisco earlier.

"The legislation calls for a complete phase out by 2002," Langley noted. "It's interesting to note that the school board recognizes that the program will cost an additional \$1.5 million to maintain the landscape annually.

"I see these initiatives as the beginning of a bigger trend of governments moving away from pesticide use, even if it may compromise public health," Langley added. "This

L.A. decision is being used as an example by groups in Massachusetts pushing two school bills to phase out pesticide use."

NEW YORK. If there are legislative concerns in New York, then they're likely to be centered around public notification requirements.

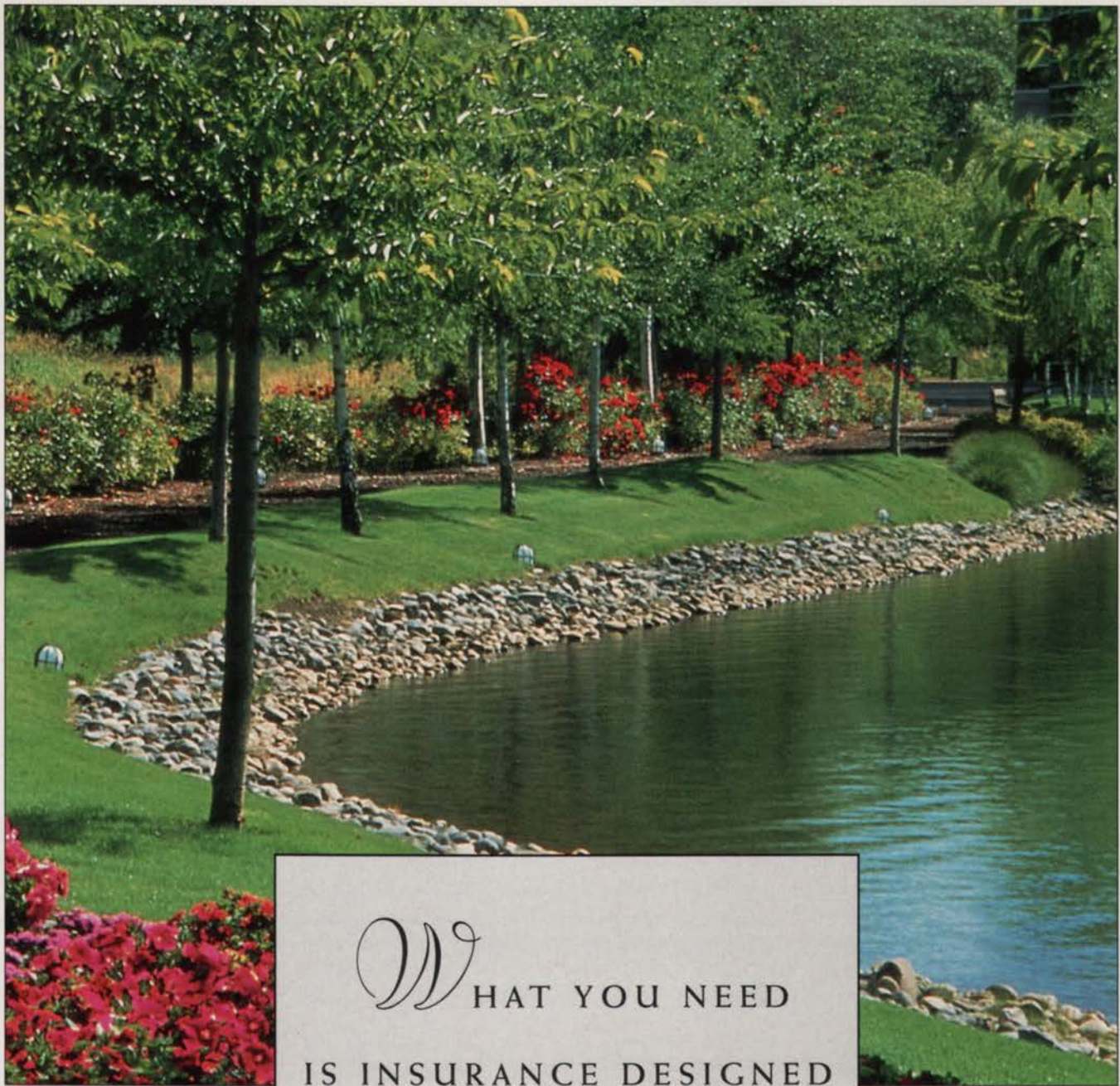
"There are no real public benefits by having each application announced," Langley claimed. "This is an area designed to be self serving for the activist community because it gives them more ammunition."

Langley explained that the notification legislation being considered would require contractors to alert all abutting neighbors to the property receiving the application 48 hours before the application.

On a broader scale, Langley voiced his concern that too few contractors are willing to get personally involved in fighting such legislative maneuvers.

"I'd like to say that we have everyone primed, ready and willing to jump into the fray, but I don't think we have that consistently across the country," Langley recognized. "Instead, it's the same groups and the same people called on every year to do battle, and eventually they will get worn out.

"Unless other folks benefiting from all of this work step up to be counted, we may not have anyone to fight the fight," he noted. — *Bob West*



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USE READER SERVICE #12

PROPER HEAD REPLACEMENT

YOU OR ONE of your employees just destroyed an irrigation head while performing normal site work or maintenance on a client's project. Now, according to your contract with the client, you have to replace the irrigation head. Which one of the 100+ available spray or rotor bodies and nozzles should you use?

The best way to replace the damaged head is with the same manufacturer's body and nozzle that was destroyed. Don't make the mistake of thinking it doesn't matter what body or nozzle you use as a replacement. All bodies and nozzles are not the same.

If you have to replace irrigation heads or you are installing new heads, here are some helpful items to consider when selecting spray or rotor bodies and nozzles.

BODIES FOR TURF. Generally speaking, always select a spray or rotor body pop-up height by the variety of turfgrass being irrigated. If you try to save a couple of dollars by using too short an irrigation head, you will ultimately be haunted by this decision with problems such as continually using string trimmers around the heads, raising buried heads to tripping height or nozzle blockage problems. In addition, the wrong size head can waste water and money for the client.

What is one of the most basic facts we know about turfgrass? It grows between mowings. That is why the grass height between mowings is a required consideration in selecting sprinkler heights.

For spray bodies, always select a body pop-up height that will put the fan of the spray

nozzle above the unmowed height of the grass. Remember, just one blade of grass can easily destroy the throw pattern of a spray nozzle.

Unlike the fine, thin fan of a spray nozzle, water generally comes out of a rotor nozzle in a single solid stream. This near solid stream generally has enough water volume and force

to make most grass blades lay down. This eliminates most grass blade throw and pattern disruption problems. However, you still want to generally use the highest possible rotor body pop-up height to get the nozzle above the unmowed grass height.

As a secondary consideration here, limit the use of concrete donuts around spray or rotor heads in

lawn installations. With what you charge for installing the donut, your charges for string trimming around the donut/head and the original cost to install the shorter pop-up height spray or rotor head, you can save yourself (and the client) time and money by selecting the right pop-up height in the first place.

Generally speaking, when mounting spray or rotor bodies on a riser in shrub beds, you always want to have the nozzle in the body several inches above the plants being irrigated. Again, if you try to save a couple of dollars by using too short of a mounting height, it will come back to seriously haunt you with problems such as continually coming back to raise heads, treating higher insect/disease/fungus problems for the plants, wasted fertilizing, etc.

And remember, the leaves and branches of shrubs are generally bigger, heavier and stiffer than grass blades. Therefore, one leaf or small branch can easily block the throwing distance and watering pattern of a spray or a rotor body.



Pop-up sprayheads or rotors should always be selected to rise above the immediate turf or shrubs. Photo: Peter Hughes

Secondary Considerations for Sprayheads or Rotors

1. You may want to consider painting PVC shrub risers to blend in with the background. Besides making the white PVC pipe less conspicuous, it can slow their deterioration from ultraviolet (UV) light rays. Or, use PVC pipe for risers that have UV inhibitors in them.

2. When you need to raise spray heads in shrub beds, they can easily and inexpensively be raised by installing a manufacturer's 6-, 12-, or 18-inch PVC riser extender (installed between the adapter and the nozzle). These extenders will eliminate the time and expense to cut and glue new riser pipe to the PVC riser. Besides, if shrubs need to be lowered by pruning, extenders can be quickly, easily and inexpensively removed.

3. Be careful where you install shrub spray or rotor heads on PVC risers — around swimming pools, along either side of sidewalks, beside front doors, etc. Many lawsuits and out-of-court settlements occurred when someone fell and injured themselves on a PVC riser installed in a shrub bed. A rough rule-of-thumb is to keep all PVC risers at least 6 feet (or the average height of a person) from areas where someone could trip and fall.

If your client doesn't want the sprayhead or rotor to be readily visible when it's not in use, try to use the highest possible spray or rotor pop-up body height mounted on a PVC riser. This way, when it retracts between uses, it will be hidden by the plants and still place the nozzle below the plants for waterings.

If your client doesn't mind the spray or rotor head showing when not in use, you don't necessarily need to use a pop-up body. Many manufacturers make shrub riser adapters for their spray nozzles or rotor bodies that don't pop-up for shrub bed installations. But be sure to mount the spray or rotor head, and nozzle, above the plants.

NOZZLE USE. Despite what people may tell you, all spray or rotor nozzles are definitely not equal. Because there are no required national standards, most manufacturers have different ways of testing and measuring throwing distance, distribution of water, etc. Even within a single manufacturer's advertised matched precipitation rate on a spray or rotor nozzle line, the precipitation rates can vary from 5 percent to 50 percent or more.

If you install exactly the same nozzle as the one you destroyed, you should not create any problems for yourself or your cli-

ent. But there is a relatively simple way of checking and comparing nozzles, if you want to use another manufacturer's nozzle. Compare the other manufacturer's published precipitation rate in inches per hour, throwing distance, gallons per minute, rotation speed (if it is a rotor head) and/or pattern at the same water pressure as the destroyed manufacturer's nozzle. If they are very close, (say within 5 percent or less), then it should work fine.

FINAL CONSIDERATIONS. Think about using the above information as a marketing/selling tool. Educate your clients and potential clients about how the uneducated landscape/irrigation professional can easily waste their water/money and create other problems for them with improper installations or repairs. Show them how you are looking out for their interests by using the proper components and the best installation practices. **LL**

— David Wickham

The wasting of as little as 1 quart of water per minute, per watering/run time, by 12 to 17 residential spray nozzles over the course of one year can cost the same as draining and refilling an average residential swimming pool.

The author is president of David Wickham & Associates, Inc., Lake Mary, Fla.

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A wide range of experiences has taught Drew St. John the important lessons for building a successful company.

By Bob West



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B

igger is better, right? Of course it is. If a company is doing \$500,000 in annual sales today, then it wants to be doing \$1 million a year from today. Doing \$1 million today? Then \$2 million mustn't be far off. And won't life be better once \$10 million in sales has been boosted to \$11 million?

Drew St. John has lived life at start-up companies with no sales and at a company that was the third largest landscape contractor in the country at one time. Part of what he learned going from a struggling start-up to the top of the industry is that being bigger certainly does have its benefits—fewer equipment worries, more glamorous contracts and jobs all over the country.

But St. John also learned that you don't have to be the biggest to be the best and you don't have to be serving hot markets like Atlanta, Dallas/Ft. Worth or Southern California to have a good company. As a result, he walked away from the world of working in the office all day with an army of employees to getting back in the field himself and building a company based on quality work and top-notch service.

LEARNING THE HARD WAY. Being a landscape contractor wasn't originally part of the picture for Drew St. John, president, St. John & Associates, Hattiesburg, Miss. Newspaper publishing in Hattiesburg, Miss., was the family business, and it was all St. John ever thought he would do until his family sold the paper after his freshman year at Mississippi State University.

At a loss for what to do professionally, St. John sat down with the university's course catalog and began flipping through it, soon finding the studies available in landscape architecture and contracting. After a visit with department chairperson Bob Callaway, the well-known father of what today is the Associated Landscape Contractors Association Student Career Days event, St. John signed on for the courses.

Upon graduation, St. John "thought I wanted to have my own business for some reason," he recalled, and so he went into business for himself back home in Hattiesburg.

Four years later, the company was still struggling to get on its feet, when St. John was offered the opportunity to work with Flat Rock, Mich.-based Reinhold Landscape. St. John started out in charge of the company's \$400,000 operation in Memphis, Tenn., which soon grew to about \$3 million in annual sales.

From there, Reinhold continued its expansion with offices in Nashville and Orlando, Fla., bringing \$11 million of annual work under St. John's care.

(continued on page 40)

St. John & Associates uses a four-day, 40-hour work week in order to build in additional personal time for employees and to leave Fridays available for necessary overtime work that doesn't cut into anyone's weekend. Photo: Francis Farmer

St. John & Associates

HEADQUARTERS: Hattiesburg, Miss.

FOUNDED: 1994

BRANCHES: Gulfport, Miss.

PRIMARY SERVICES: Landscape installation accounts for 50 percent of sales, with 40 percent from maintenance services and 10 percent from irrigation.

EMPLOYEES: 20 year-round, 8 seasonal

1998 REVENUES: \$1.485 million

1999 PROJECTED REVENUES: \$1.8 million

The Company

MISSION STATEMENT: St. John &

Associates provides high quality landscape and horticultural services. Our goal is to consistently exceed the client's expectations in Design, Materials and Service through our greatest asset, our Employees.

FUTURE CHALLENGES: Stay on five-year plan and grow in a profitable fashion. Continue to plug in competent personnel we need for growth in a tight labor market.

President:

Drew St. John, II

BACKGROUND: Studied landscape architecture at Mississippi State University. Worked as vice president of southern operations for Reinhold and, subsequently, Reinhold & Vidosh from 1985-1992. Became owner of Reinhold/St. John in Memphis and Nashville from 1992-1994, before founding St. John & Associates in 1994.

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USE READER SERVICE #100

cover story

(continued from page 37)

Then 1990 brought one of the industry's first major mergers of landscape contracting companies when Reinhold Landscape and Vidosh Landscape Services, Pontiac, Mich., formed Reinhold-Vidosh Landscape Services. St. John was executive vice president of the company that did as much as \$36 million in annual sales, and he had a bird's eye view of the problems the company ran into.

St. John & Associates is led by its management team of (left to right) Debbie Mahlis, office manager; Drew St. John, president; Kathy St. John, sales manager; and Glenn Raley, branch manager (standing).



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"The economy really turned in our major markets, like Detroit and Dallas, and we had to start pulling the reins in," he recalled. "Consequently, we had grown too fast, and the merger just didn't gel in reality like it looked like it would on paper."

Reinhold-Vidosh began selling off parts of the business to pay off debt, and St. John jumped at the opportunity to purchase Memphis and Nashville operations from the company in 1992. The company was called Reinhold/St. John and was doing about \$3 million in annual sales.

Despite the tremendous success he had running these operations as branches of a larger company, St. John made some mistakes as an owner.

"I learned some real good lessons at this point because we grew too fast and borrowed far too much money," St. John noted. "Our focus was large, commercial work, so we were in a lot of competitive bid situations dealing with general contractors."

It was also at this time that St. John was elected to serve on the ALCA Exterior Board, and he found himself in the company of some of the most successful contractors in the country.

"I still remember looking around that room and realizing that everyone in there either had a strong design/build focus, a strong maintenance focus or some combination of the two," St. John noted, adding that one of Reinhold/St. John's problems was a lack of focus. "I think that's true of all of the really successful companies in our industry."

GOING HOME AGAIN. St. John had the opportunity to exit the roller coaster ride Reinhold/St. John was experiencing, and he sold the company's contracts, leases and equipment to Environmental Design Group, Atlanta, Ga. His plan, at that time, was to

(continued on page 42)

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USE READER SERVICE #32



(continued from page 40)

remain in the Memphis area and focus on building a smaller company focused on offering design/build services.

Before he got this venture off of the ground, however, St. John made a visit back home and was struck by two market dynamics that led him to believe Hattiesburg was the market for him to start the company in.

"I couldn't believe how much growth

had taken place in Hattiesburg and how little professional competition existed for landscape services," St. John commented. "I figured I could start a design/build business here just as easily as in Memphis, so I started St. John & Associates in 1994.

It didn't take long for St. John's instincts about the market's potential to prove

(continued on page 44)

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USE READER SERVICE #33

A Budget Believer

Forming and following a budget isn't a revolutionary concept for business people, but not all landscape contractors give it the importance it deserves, according to Drew St. John, president, St. John & Associates, Hattiesburg, Miss.

"I see a lot of companies just charging a price that is a little bit above their costs, which means they are missing the understanding of what it really costs to operate a business," St. John noted. "We do a very, very intensive budget process every year, and we update it weekly and monthly as our road map.

"If we can hit our sales projections and control our costs for labor, then everything else should fall into place," he continued. "I haven't seen too many jobs that go over budget on material purchases. It's always the labor costs that cause the problems."

A key to making St. John & Associates' budget come to life in the business is management's ability to make the information a real part of the employees' daily jobs.

"We have scheduling boards on the wall, and we schedule each job by specific employees and hours each employee should spend on that job," St. John explained. "At the end of each day, each foreman updates his jobs by recording how many man-hours were used that day beneath the number of budgeted hours.

"This way, everyone knows what jobs we're over or under budget on every day, and we can fix problems before they get too severe," St. John added.

— Bob West

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USE READER SERVICE #34

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correct. Although it has only been in business for five years, the company did nearly \$1.5 million in sales in 1998, including \$400,000 out of its branch office 60 miles south of Hattiesburg in Gulfport, Miss.

The company has also already evolved from a company working to establish itself in a market to a company successful enough to decline certain contracts.

"We had to take on a good bit of residential maintenance work initially because we were getting started and we were glad to get what work we could," St. John recognized. "We probably earned 70 percent of our dollars from residential work in that first year, and that's been flipped around to 70 percent of our dollars coming from commercial maintenance work this year."

St. John also plans on reversing the company's current 60/40 ratio of construction-to-maintenance work by focusing on growing the maintenance portion of the business while maintaining the construction.

—And while he doesn't have any plans to return to the days of running one of the country's largest landscape companies, St. John sees definite growth opportunities for the company, both in Hattiesburg and at its branch location.

"We'll do \$1.8 million this year overall, and we think we can do \$2.5 to \$3 million combined," St. John related, adding that the company's five-year plan calls for growth from \$1.2 million to \$2.5 million by 2002. "Our growth has been real steady at 25 percent each year, and we'll probably throttle that down to 15 percent to 20 percent for a couple of reasons. First, so long as we remain profitable, we can handle the growth from a capital standpoint. Also, that rate of growth shouldn't force us to outstrip our people or equipment resources."

LEARNING LIFE'S LESSONS. Scaling back a company's growth to avoid abusing its resources may seem like a mistake to compa-

nies who want to take maximum advantage of the window of opportunity offered by the booming economy, but St. John learned what can happen when sales growth drives a company's efforts.

"When I first started my own business in 1985, I tried to be everything to everyone," St. John recalled. "I was doing installation, maintenance, running a garden center — we would do jobs 100 miles away where a flat tire would kill us for the whole day."

"Today, we focus on doing what we do best, which is design/build and maintenance work, and we won't do anything else," he continued. "For example, we learned that a plant looks the best the day it comes off the truck from a wholesaler, and it looks worse every day that it doesn't go into the ground. So, instead of a garden center, we have a holding nursery where we can keep plants that have been ordered for a specific job for two to three weeks and keep them irrigated."

(continued on page 46)



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(continued from page 44)

St. John was quick to credit his experience running his own business in 1985 and the lessons he learned from Melanie Reinhold as crucial to his success, although he appreciates the benefits of operating a smaller company these days.

"When I was at Reinhold-Vidosh, I had layers of people beneath me," St. John noted. "Now, it's a much more 'hands-on' atmosphere that allows me to convey our message directly to the employees."

In addition, St. John also enjoys being closer to the jobs themselves.

"The real beauty of projects involves taking them to the highest levels of completion, and that is done when designers are in the field," he explained. "I'm on a project at least twice a day, and I serve as project manager for half of our maintenance projects with Kathy, my wife, handling the other half."

Another lesson St. John learned from his early ownership experiences was the dangers of taking on too much debt.

"St. John & Associates bought all used equipment for our trucks and new equipment for our maintenance and construction equipment," he said. "We've intentionally held down the money we are willing to borrow, and we're trying to grow out of profits and capital instead. Right now, we've got a debt-to-equity ratio of about one-to-one, and we don't want to exceed that because then you're just spending all of your free cash servicing the debt, and you don't want to always have to borrow money just to buy new equipment. Plus, when the economy goes south, and it will at some point, sitting on a mountain of debt is a bad place to be."

And the timing couldn't be better for a landscape company to grow in the maturing Hattiesburg market.

"What we've been able to do is really service our clients by being close to the business and creating our own market niche by taking contracting to the next level," St.

John added, pointing to an emphasis on using quality products and doing construction with wood, concrete and bricks as key differentiating factors. "As a result, we've completed 12 installations worth more than \$100,000 each in the last four years, and all of the contracts have been negotiated."

"We've really been successful developing relationships with people, earning their trust and excelling with our design, our materials, the quality of the installation, and our follow up, whether it's handling the maintenance of the job or transitioning it over to another contractor," St. John concluded. "It's taken me 20 years, but I think I've kind of got it all figured out."

St. John & Associates can be contacted at 5263 Old Highway 11, Hattiesburg, Miss., 39402. Phone: 601/264-5030. **LL**

The author is Editor of Lawn & Landscape magazine.

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3. You are automatically entered when you purchase Talstar products and complete and return the attached card with your invoice. To enter without purchase, complete and return the attached card, checking off the appropriate box (do not include an invoice). Sweepstakes begins 5/1/99 and ends 9/30/99. This sweepstakes includes one First Prize drawing and 5 monthly drawings to award the Second and Third Prizes. Monthly drawings will be conducted for entries received for: May, June, July, August and September, 1999. To qualify for a given monthly drawing, your entry must be received by the last day of that month. Your entry will be included in the monthly drawing for which it was received, in subsequent monthly drawings (if applicable) and in the First Prize drawing. If no entries are received for a given monthly drawing, the next month's entries will be used to award the previous month's prizes. Incomplete entries are not eligible for drawing. Only one entry per person. Sponsor is not responsible for lost, late, damaged, illegible, misdirected, or postage due mail. All entries become the sponsor's property and will not be returned.

4. Random drawings will be conducted by an independent judging organization from among all eligible entries received. Judges' decisions are final. Monthly drawings will be conducted within 15 days of the end date of the each month. The First Prize drawing will be conducted on or about 10/1/99. First Prize winner will be notified by overnight carrier and will be required to complete and return (via prepaid overnight carrier) an affidavit of eligibility/liability publicity release which must be signed and received within 10 days of date printed on notification or an alternate winner will be selected at random. Travel companion to First Prize winner must also execute a liability/publicity release prior to travel. All other winners will be notified by first class mail. If a prize notification or prize is returned as undeliverable, the prize will be awarded to an alternate winner at random. Acceptance of prize constitutes permission (except where prohibited by law) to use winners' names, hometowns, prizes won, and likenesses for promotional purposes without additional compensation.

5. Prizes and their approximate retail values (ARV): 1 First Prize: Trip for two to Atlanta, Georgia. Includes: 3 nights double occupancy hotel accommodations, round trip coach airfare from/to closest major airport to winner's primary residence and two tickets to a football game (ARV: \$12,000). Actual value of trip prize depends on location of winner and fares at time of departure. Other incidentals and expenses not mentioned herein are not included and are the winner's responsibility. Trip prize winner must agree to travel on dates as specified by the sponsor or forfeit all rights to prize. If this is the case, an alternate winner will be selected at random. 25 Second Prizes (awarded 5 per month for five months as detailed in rule #3): Autograph Football (ARV: \$400 each). 100 Third Prizes (awarded 20 per month for five months as detailed in rule #3): Swiss-style military knife (ARV: \$10 each). Total ARV for all prizes: \$23,000. One prize per person with the exception of the First Prize which may be won in addition to any other prize. All taxes on prizes are the responsibility of the winners. Prizes are not transferable or redeemable for cash. No prize substitutions except by sponsor due to prize unavailability, in which case a prize of equal or greater value will be awarded. All prizes are guaranteed to be awarded and delivered to winners within approximately 60 days of drawings.

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7. Participating entrants agree to these rules and the decisions of the judges and FMC Corporation and release FMC Corporation from all claims or liability relating to their participation.

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After the Weeds ARRIVE

• Postemergence
weed control in cool-
season turf continues
to improve.

• By Ray Taylorson

For cons, attempts at controlling weeds involved some form of cultivation, cutting, digging or burning. These practices are of little use in turf, but hoes, shovels and hands still work OK in landscape plantings for those so inclined.

Modern technologies focus on the use of biologicals and herbicides. Biological agents include insects and plant pathogens. While considerable effort is being devoted to development of biological weed control agents, as yet there is not much available for the turfgrass and ornamental markets. A similar statement can be made for naturally occurring chemicals, sometimes thought of as being safer than synthetically produced herbicides. By far, the most predictable and effective materials remain the herbicides.

Postemergence herbicides offer lawn care operators advantages in that these products can be selective (meaning they control only specific kinds of weeds) or non-selective (control almost all kinds of plants, whether weedy or desirable). Further, they may be either contact (act only where droplets are deposited) or systemic (move from point of contact throughout the plant). Although all of these products work well when used properly, the effective use of herbicides requires the simultaneous implementation of good turf management practices.

Understanding the biology of the weeds to be controlled can help lawn care operators better target applications for improved product performance.



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USE READER SERVICE #43

postemergence

Understand the Enemy

If weeds are to be prevented or controlled, it is important to understand their life cycles and their means of reproduction. For this reason, weeds are divided into three groups based on their typical life spans. These are perennials, which live for more than two years, biennials, which live for two seasons, and annuals, which normally complete their life cycle in one season.

As a rule, the majority of weeds are annuals. Fortunately, of the three groups of weeds, the annuals are the easiest to prevent or control, as they usually lack any vegetative reproductive structures.

Biennials, like annuals, tend to reproduce from seed. However, they often possess a thickened storage root that allows them to survive the winter or a period of drought. Biennials occasionally cause problems, and since they possess storage roots they are often capable of reproduction by seed and by resprouting from sections of roots. Thus, their control is often more difficult than the control of annual weeds.

Perennial weeds are the most difficult group to control. Most perennial weeds reproduce both by seed and by vegetative plant parts. Perennial weeds can be subdivided into two groups: the creeping perennials and the simple perennials.

Creeping perennials reproduce by some type of vegetative organ, which may be rhizomes, stolons, tubers, bulbs or similar organs.

Simple perennials do not normally reproduce vegetatively, but may do so if they are disturbed. The common dandelion is a good example. Its normal method of reproduction is by seed, however, if the taproot is disturbed it is capable of sprouting from sections of the root.

Excerpted from Nursery & Landscape Weed Control Manual.

THE BEGINNINGS. Phenoxy herbicides ushered in the era of true, selective postemergence weed control and the foundations of modern weed control. Developed during World War II in the United States and Great Britain as a potential anti-crop warfare agent, 2,4-D and several close relatives have provided economical, dependable and (considering the huge amounts used by novice and professional applicators) relatively safe weed control, however they have been linked to numerous incidents over the 50 or so years of use.

Despite all of the purported problems, the extensive use of 2,4-D and its relatives as tools for selective broadleaf weed control in turf continues. Most use of 2,4-D is in combination with another phenoxy or a different type of broadleaf herbicide. Such combina-

(continued on page 57)

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Saturday Night



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- 2 Photocopy the form as needed for additional registrations, and keep a photocopy of your registration for your files and tax records.
- 3 Children under 16 at EXPO 99 must be accompanied by an adult at all times. In the registration area, pick up a free badge for each child.
- 4 For hotel reservations, call the Louisville Convention and Visitors Bureau, Monday - Friday, 10:00 a.m. to 4:00 p.m., E.D.T., 800-743-3100. (In Kentucky or outside the U.S. call 502-561-3100.) An \$80 per room deposit, including a \$5 processing fee, is required for all reservations. Please have the following information ready when calling: name of tradeshow; arrival and departure dates; number of rooms required; type of room(s); number of people in party; your fax number if you want your confirmation faxed; credit card type, number expiration date, and name on card; address of home or office; and a daytime phone number with area code first. On or before June 28, all changes should be made directly with the Convention Bureau's housing department. After July 3, changes should be made directly with the hotel.
- 5 Send in the attached advance registration form for free entrance to exhibit halls. (\$25 registration fee per person at the show if you are not preregistered before July 19.)
- 6 For airline discounts, you or your travel agent can call:
 - Delta Air Lines, 800-241-6760 - Refer to file 123273A.
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EXPO 99 is sponsored by the Outdoor Power Equipment Institute, Inc. Check out the website at <http://expo.mow.org>. If you have questions about the show, contact Sellers Expositions, 800-558-8767 (toll-free) or 504-562-1962.

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- 11 Servicing Dealer - Consumer
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(continued from page 52)

tions broaden the spectrum of weed species controlled and provide good control at reduced rates – akin to a synergistic response. Accordingly, formulators have created and marketed dozens of products that are combinations of two or three herbicides in various proportions.

Such numerous formulations are difficult to compare because some products try to target certain weed species while minimizing damage to particular turfgrasses, and many labels don't list the species controlled. As a result, users rely on three-component products that will control many species but may be overkill for some.

HIT THE BOOKS. Given today's environmental concerns and concerns relating to pesticides in general, we as professionals should make every attempt to minimize herbicide inputs into our control strategies. Part of doing so involves knowing the least impactful product and least amount of herbicide required to control the problem weeds in each situation. This also requires competence in weed identification since a weed name on a label is only useful to one who can identify the weed.

Weed identification is really only part of knowing a weed. Other important considerations involve knowing whether the weed is an annual, biennial or perennial weed. If it is an annual, is it a winter annual that blooms by late spring, or a summer annual that reproduces and dies by fall? If it is a perennial, how does it increase? Does it have rhizomes or other subterranean organs that are hard to kill, or does it spread by stolons, tillers or seeds?

While answers to these questions might not seem necessary, knowing something of the biology of the weeds one attempts to control will certainly lead to more successful control efforts. This expertise will also give clients more confidence in the professionals they hire.

Similar basic knowledge about how a particular postemergence herbicide works is also important. Such questions as timing of herbicide application relative to a weed's developmental stage, gallonage required for effective coverage, necessity of adjuvants for optimal effects, interval required for rain-fastness, dangers to nearby desirable species and other off-target hazards are some con-

siderations. And, always remember that "the dose makes the poison." As with table salt, sugar or even water, an excess can be lethal. Thus, while an herbicide can selectively control weeds at the label rate with minimal side effects, applying too much product can negate selectivity and cause severe environ-

mental damage.

Instances of herbicide overdose and the accompanying disastrous effects often form an image of all herbicide use in the eyes of many persons. It is essential that lawn care professionals commit themselves to proper

(continued on page 60)

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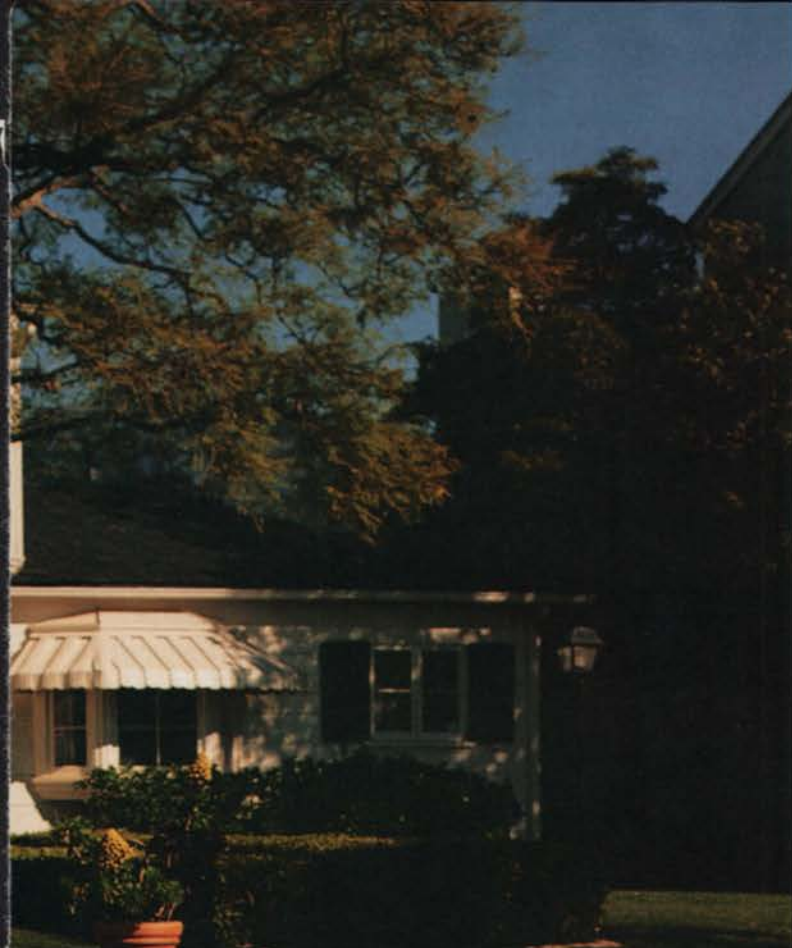
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postemergence

(continued from page 57)

training of staff and providing clean, well-calibrated equipment.

BROADLEAF CONTROL. As indicated earlier,

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Postemergence herbicides offer lawn care operators advantages in that they can be selective (meaning they control only specific kinds of weeds) or non-selective (control almost all kinds of plants, whether weedy or desirable).

.....

many broadleaf species can be controlled by combination products. The basic components are 2,4-D, MCPP (mecoprop), MCPA or 2,4-DP (dichlorprop). Another common

component of many combinations is dicamba, which is a benzoic acid derivative rather than a phenoxy. Dicamba is effective at very low rates and is frequently used by itself. In 2,4-D combinations, dicamba broadens the weed control spectrum. A downside risk is that dicamba can be quite mobile in soils and could have a negative effect on nearby trees and shrubs if it is absorbed by their shallow roots.

All of these materials produce formative effects on broadleaf weeds, which include twisting, curling, cupping and other malformations. Also, while grasses are seldom killed, some temporary yellowing can occur.

Some grasses, e. g. closely mowed bentgrass and fine fescues, can be severely injured. Generally, one wants to avoid applications when temperatures are in the mid-80s or

higher. Also, drought stress tends to reduce control effectiveness.

Formulations of the phenoxy (and other) herbicides can be either of the amine or ester type. Basically, the amines are water-soluble while the esters are oil soluble. The esters are formulated as emulsifiable concentrates that form milky suspensions while amines form clear solutions, and the formulations act differently as well. Amines are non-volatile, which means that they don't form vapors that can move to other plants as can occur with esters.

However, most ester products are of the low-volatile type, which reduce but don't eliminate the problem. High air temperatures increase volatility considerably. Generally, esters are thought to be the more potent form, mainly because they penetrate the waxy coating on leaves better. Both the amine and ester are converted to an acid form once in the plant. This conversion

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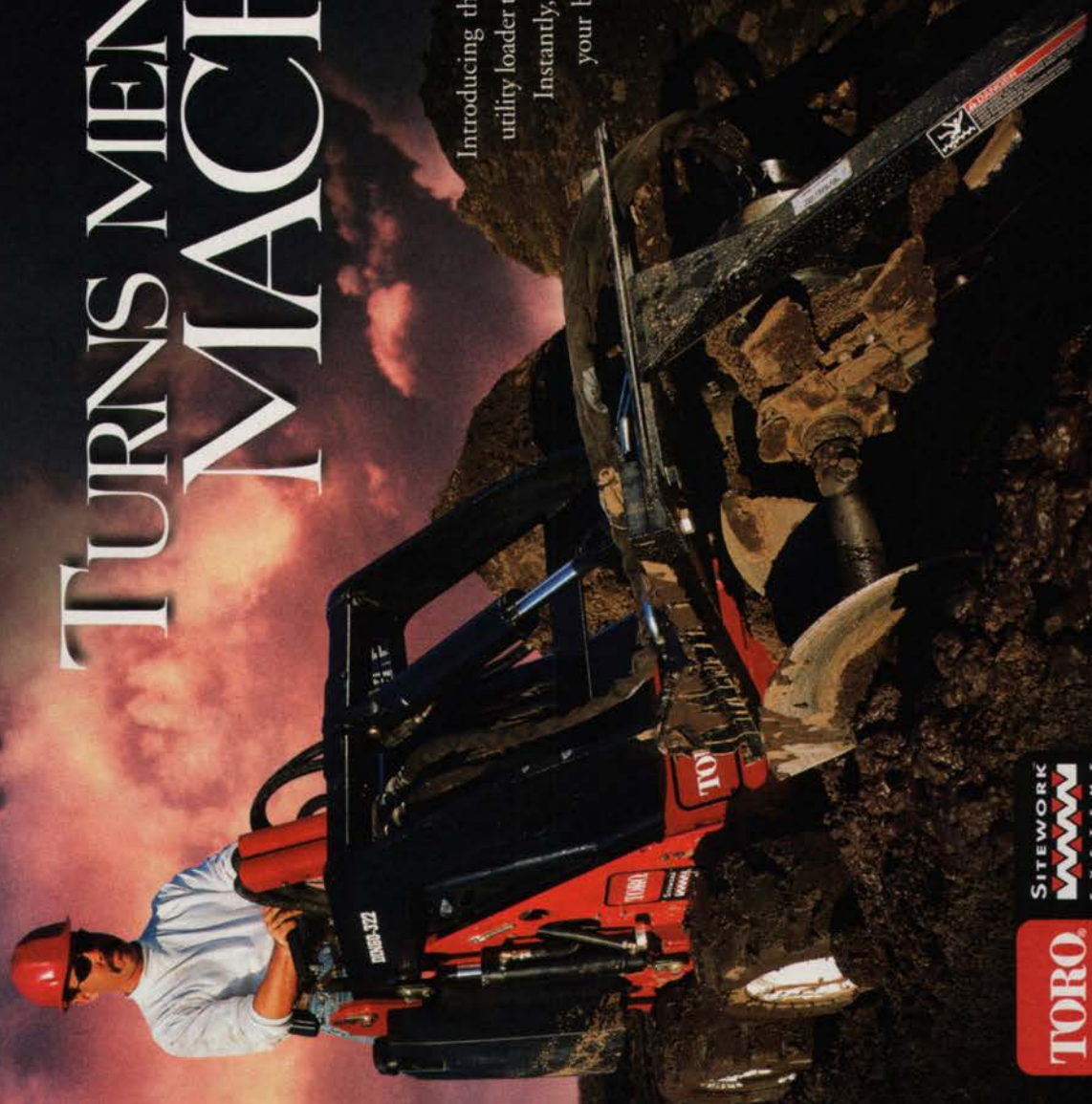
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USE READER SERVICE #49

postemergence

(continued from page 60)

gives rise to use of the term 'acid equivalents' on most labels.

Beginning in the 1980s, a new class of broadleaf herbicides having a pyridine base was introduced. The most useful compounds have the common names triclopyr and clopyralid. They were the first of the non-phenoxy herbicides developed in part to replace 2,4-D should its registration be cancelled, as was once feared.

Triclopyr products in the amine formulation are a combination of 2,4-D and triclopyr amines, while other formulation features both 2,4-D and triclopyr esters. However, the ester formulation of triclopyr isn't produced in combination with other products.

Basically, triclopyr is a broad-spectrum herbicide that controls some of the species that 2,4-D is weak on. It is also quite safe on cool-season turfgrasses. The ester formulation can control tough weeds like violets, ground-ivy and yarrow. These compounds

degrade fairly quickly in soils and have limited mobility so groundwater problems are not a concern.

The sister compound, clopyralid, is available to the turf market in combination with triclopyr. It is also marketed in some three-way combinations containing 2,4-D. These combination products are as effective as the various other 2,4-D products on many weed species and more effective on some of the species difficult to control with the phenoxy materials.

Clopyralid by itself tends to be specific in that it mostly controls many species within the sunflower, smartweed, potato and legume families. But, combining it with the broader spectrum triclopyr yields a synergy which actually makes both more effective. As with dicamba, clopyralid is fairly mobile in soils so it can be harmful to shallowly

rooted ornamental species and can reach groundwater on coarse soils with a shallow water table.

Questions frequently arise concerning

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Despite all of the purported problems, the extensive use of 2,4-D and its relatives as tools for selective broadleaf weed control in turf continues.

.....

when it is safe to apply broadleaf herbicides after seeding turfgrass. There is no simple answer to this since it depends on the turfgrass species, weed species present (this is a good time to know your weeds and their biology), drought stress and the herbicide used. A good rule of thumb, however, sug-

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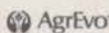
CAMPUS GROUNDS MANAGER MASTERMINDED ESPIONAGE PLOT

“Somehow he knew every-
thing” says awed crew “it was
uncanny.”



Keith Macdonald's work crews at Bridgewater State College campus swear he's a master spy, or psychic. "He knows when we've sprayed off an area with Finale® Herbicide without us even telling him," said a crew member "sometimes only 24 hours after the job's done." Keith laughs. "When it gets busy and I can't check with everyone, I simply drive around and see the results. It only takes a day or two for Finale to work. A month later, the area's still clear." But it wasn't always so easy. As assistant facilities director on the Massachusetts campus, Keith used to use the leading systemic herbicide. "It took 2 weeks before I knew I had a take," he says, "drove me crazy." Keith also likes Finale's ability to create perfectly clean edges around beds and baseball fields. "It's the no-creep feature," he says, "the one my crews apply to me."

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USE READER SERVICE #79

postemergence

(continued from page 62)

gests waiting until the second or third mowing. Since an application made too early can readily injure the young turfgrass, try to wait until tillering commences unless the weeds are threatening to crowd-out the turfgrass.

Another question concerns timing re-seeding application after an application of a

broadleaf herbicide has been made to an area. All of the postemergence herbicide products have some preemergence activity on grasses, albeit slight, but their residual is generally short. So re-seeding one month after the postemergence application should be relatively safe, but always check

Formulations of the phenoxy (and other) herbicides can be either of the amine or ester type. Basically, the amines are water-soluble while the esters are oil soluble.

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the label for specifics. Rate of application, soil type and environmental conditions can alter this timing.

Other selective postemergence broadleaf herbicides that are available lack the broad-spectrum control typical of the phenoxy and pyridine types. In other words, they control fewer species. Some, however, control both grasses and broadleaves. A few have very limited activity and will not be discussed.

Bromoxynil is primarily a contact herbicide that works best on small, broadleaf seedlings. It is mainly used in new seedings where there are heavy infestations of broadleaf weeds. The arsenical MSMA, sold under numerous product names, is used in turf to control annual grasses and nutsedge. It also controls some broadleaf weeds, notably yellow woodsorrel.

The newest turf herbicide on the market is quinclorac, which is chiefly a postemergence annual grass herbicide but controls a fair number of broadleaf species as well. Among those species are dandelion, white clover and some speedwells. **LL**

The author is adjunct professor of Turf Weed Management at the University of Rhode Island, Kingston, R.I.

Editor's Note: Mention of a tradename is for identification only and does not imply any endorsement or recommendation of this product by the author, the University of Rhode Island or Lawn & Landscape.

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The Seed Market Scene

By Nicole Wisniewski

As the industry continues to thrive during a growth year, consolidation concerns still loom overhead.

C

old' and 'wet' usually aren't the two words one would associate with spring weather. But when these two words are attributed to weather affecting the seed industry, it isn't necessarily a bad thing.

"Although temperatures in the 50s and 60s got spring off to a slow start, the overall seed movement since last harvest has been very good," said Keith Laxton, vice president, operations, Seed Research of Oregon, Corvallis, Ore.

"Seed sales may extend into late June," added Murray Wingate, turfgrass market manager, Lebanon Seaboard Corp., Lebanon, Pa., "instead of slowing down around June 1 because of the cooler weather."

With cool, damp weather, however, also comes some challenges, such as weeds like poa annua – a wet weather lover, Laxton acknowledged.

Despite such challenges, the seed industry is already having another great year – growing 10 to 15 percent from last year, pointed out Tom Stanley, marketing director, Turf-Seed, Hubbard, Ore.



Despite the cool, damp weather that kicked off Spring 1999, the seed industry is in good shape and seed movement has been active, according to turf seed manufacturers. Photo: L&L Staff

Seed Market Report



Due to spring's cool start, the harvest may be a little late this year for certain turfgrass species, depending on where fields are located up and down Oregon's Willamette Valley. Photo: Turf-Seed

However, as the industry continues to thrive and grow, especially with certain crops – primarily fine fescue – in better supply than last year, rumors about recent industry consolidation are leaving most turf seed suppliers wondering what's going to happen next.

LOOKING AHEAD. Because spring weather is so unpredictable, seed suppliers are noticing a trend toward more fall seeding than spring seeding, said Tom Peters, sales, Barenbrug USA, Tangent, Ore.

Turfgrass species, such as fine fescue, which are in short supply now, should be adequate this fall, Laxton said. And the high price tags that have remained on fine fescue for the last three years should stabilize due to the growth in supply.

"The shortage of fine fescue, which is a function of low yields at harvest time, doesn't affect landscape contractors severely," Laxton pointed out. "They only use it in shaded or low-maintenance areas, usually mixed with perennial ryegrass and bluegrass."

"There's an adequate supply of bluegrass, ryegrass and tall fescue," Wingate noted. "Demand isn't outdoing supply yet except for hard fescues, which are in the shortest supply, and creeping red fescue, which has gone up in price the

past two months by 20 percent."

"If there's a good harvest, overall prices will soften up a bit, but a bad or moderate harvest will keep them strong," Laxton explained.

Overall, prices on ryegrass, tall fescue, bermudagrass and elite proprietary bluegrass remain stable, Laxton said, while common bluegrass prices are commodity driven.

South of the transition zone, the largest volume of sales this fall should come from overseeding warm-season grasses that go dormant when it gets cooler with cool-season grasses, Nicholson stated.

"This is big for high-end residential customers who want a maintained lawn and have a high profile yard," Nicholson explained, "and businesses that want their grasses to stay green for tourism."

ON HOLD. AgriBioTech, breaking into the industry in 1995 with a plan of rapid consolidation, originally had the goal of integrating all 34 of its acquired seed companies into one organization within the next year. After examining the various strengths of its companies, ABT has changed its plans, according to John Zajac, director of ABT's turfgrass business unit, Henderson, Nev.

"We're going to consolidate into two

A Closer Look

| Turfgrass Species | Current Supply | Expected Harvest | Expected Prices |
|---|----------------|------------------|---------------------|
| Kentucky Bluegrass (<i>common</i>): | Adequate | Adequate | Fluctuating |
| Kentucky Bluegrass (<i>proprietary</i>): | Adequate | Adequate | Stable or Lower |
| Perennial Ryegrass: | Adequate | Adequate | Stable |
| Fine Fescue: | Limited | Fair | From High to Stable |
| Tall Fescue: | Adequate | Adequate | Stable |
| Creeping Bentgrass: | Adequate | Adequate | Stable |
| Bermudagrass: | Adequate | Adequate | Stable |
| Zoysiagrass: | Limited | Adequate | High |



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groups," Zajac explained. "One group will sell directly to the end user – retail and professional. The other group will remain a wholesale company and sell to the distributor."

This plan, which is at the implementation phase, according to Zajac, gives ABT the strength to increase its research involvement and develop a more efficient distribution method.

The challenge for ABT, Zajac said, will be integrating in a way that is "seamless" to the customer.

Zajac refused to comment on the status of the class action lawsuits against ABT alleging fraud and accounting manipulations. Other representatives at ABT did not return phone calls for comment.

As of presstime, ABT stock was trading at over \$6 a share, although over the past year, it's reached a high point of \$29.50 a share and a low point of a little over \$3 a share.

ABT competitors and other turf seed suppliers have a range of views about ABT's consolidation plans – many are waiting to see what happens before coming to any premature conclusions.

"If new management can make things work, it would be good," Peters remarked. "But ABT lacks any success to date with its original plans. Falling stocks and rumors can only create uncertainty."

Asked whether they think ABT's recent consolidation plans will succeed or fail, turf seed suppliers are undecided.

"I don't know how it will shake out," Laxton said. "Anytime there's upheaval in an industry, it can cause problems or present opportunities."

One opportunity for non-ABT companies is to establish new distributor relationships because of consolidation.

"Distributors who are dealing with four to five different companies are losing the ability to shop around," Laxton explained. "There are less small companies today than there were five years ago. Distributors who used to rely on six separate suppliers are now calling a seventh or eighth supplier to ask about their pricing because all six of their other contacts became one ABT entity and are all selling seed for the same price.

The Price is Right... For Now

Over the last few seasons, the turf seed industry has suffered little fluctuation in seed pricing.

"Worldwide, commodities, in general, have been weak," explained John Zajac, director of AgriBioTech's turfgrass business unit, Henderson, Nev.

Yet, as production costs rise due to an increase in pesticide use because of the field burning bans and as land values increase, most turf seed growers are speculating that seed prices may not remain so stable for too much longer.

"The seed trade has been good at keeping margins low," noted Steve Witten, research

director, Cascade International Seed Co., Aumsville, Ore. "But at some point the price of seed is going to have to go up.

"The seed market should be adapting to changes more than it has," Zajac added. "Even though production costs have gone up,

Most turf seed growers are speculating that seed prices may not remain stable for too much longer.

they have remained at a lid pricing."

Looking at the situation long term, Zajac said there will be a gradual increase in material costs. The species that will be affected the most, he pointed out, will be red fescues and common bluegrasses.

While most turf seed growers say the increase will be progressive, Keith Laxton, vice president, operations, Seed Research of Oregon, Corvallis, Ore., said quality seed will be the main target.

"When more inputs have been put into the field and the fields are cleaner, you're going to pay more for the quality seed that's being produced there," Laxton explained. "And significantly higher in price may mean just a few cents."

And, according to Rick Weigand, sales, The Seed Center, Columbus, Ohio, changes in seed prices may bring the cost of common variety seeds and proprietary variety seeds closer together. This will move more contractors toward the trend of buying quality seed over cheaper common seed, he said, because the difference in price won't become as much of a buying factor. – *Nicole Wisniewski*

"Distributors will want to license other varieties other than ABT's varieties," added Steve Witten, research director, Cascade International Seed Co., Aumsville, Ore.

Another positive that could come out

of this consolidation, according to Stanley, is the fact that production capabilities will be consolidated into fewer hands.

"It will help the industry get a better handle on inventories and keep a lid on overproduction," Stanley said.

One major concern expressed by most turf seed suppliers about consolidation is the consequences of ABT's possible failure – particularly what would happen to ABT's leftover pounds of seed.

"They would sell the remaining seed at a cheap rate to bring in money to cover

their debts," Peters speculated. "Companies have taken advantage of uncertainty and frustrations before by keeping their doors open and selling seed at a very cheap rate to generate dollars.

"It would be like a liquidation sale – a garage sale," Nicholson added. "It will

take away from the professionalism of the whole industry. Landscape contractors will buy cheap, and they'll forget about quality." **LL**

The author is Assistant Editor of *Lawn & Landscape* magazine.

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USE READER SERVICE #152

By Nicole Wisniewski

The Perfect Blend

Landscape contractors have many factors to think about when choosing the right turf seed mix.

W

hen Russ Fragala, president, Russ Fragala Landscaping, Coram, N.Y., buys turf seed, he has three different kinds in mind: a premium blend, a backyard blend and a contractor's blend.

The premium blend is usually about 70 percent bluegrass and 30 percent ryegrass; the backyard blend is a mix containing tall fescue so that it can withstand traffic; and the contractor's blend, a mix containing a majority of ryegrass, is used just to establish a turf area, explained Fragala.

When it comes to choosing the right turf seed blend, Fragala knows what he wants. He knows how pure he wants his seed to be and how much he needs based on an established planting rate. Fragala is a turf seed supplier's ideal customer.

Like Fragala, landscape contractors need to know the basics before calling their dealer. After a species is determined, then landscape contractors can get picky about specific varieties and preferred characteristics to find the right seed blend.

THE SPECIES. As a dealer, Fred Bosch, sales, Solution One, Ravenna, Ohio, starts a sales call by asking questions to determine the correct species a contractor will need.



| Species | Seeds/Pound |
|-----------------------------|-------------|
| Annual Ryegrass | 172,000 |
| Perennial Ryegrass | 280,000 |
| Tall Fescue | 225,000 |
| Fine Fescue (creeping type) | 320,000 |
| Kentucky Bluegrass | 1,300,000 |
| Bentgrass (creeping) | 7,000,000 |



"What is the area going to be used for?" Bosch will ask his customers. "An athletic field? A playground? A sloped area? Is it located up against a building? Does the area get a lot of sun/shade? Is the area irrigated or not? Is there sufficient drainage? Is it a new seeding or is it to be incorporated into what's already there? What's the soil depth in your area? What's the soil pH?"

From a landscape contractor's answers to these basic questions, a dealer can usually recommend certain turfgrass species that will work well together for that specific region.

"Typically, in the North, it's bluegrass with ryegrass and fine fescue thrown in," said Keith Laxton, vice president, operations, Seed Research of Oregon, Corvallis, Ore. "In the South, it's bermudagrass mixed with tall fescue."

THE VARIETY. Once the species is determined, a variety of some already existing blend is recommended or the dealer can have the supplier mix a special blend.

"Mixes can become outdated," Bosch explained. "If a landscape contractor wants to buy an old variety that isn't available anymore, we can usually come close to matching that variety's per-

formance with a special blend."

The gap between the quality of good and bad seed has increased due to field burning bans in Oregon (see "Burning Bridges," this page), so there are an increased amount of varieties on the market, Laxton warned, especially when it comes to ryegrass and tall fescue.

"Sometimes the cheaper blends are cheap performers," warned Wade Jacklin, sales coordinator, Medalist America, Post Falls, Idaho.

These 'cheap performers' can be found in all seed species, but are becoming more typical in cool-season grasses, such as perennial ryegrass and bluegrass mixes that have poa trivialis and poa annua weeds in them, respectively, Jacklin said.

A good way to look for the amount of poa annua in a bag of seed is to look at the label, unless you don't live in the 15 states (Ark., Conn., Del., Washington D.C., Fla., Ky., Md., Mass., N.J., N.Y., Pa., S.D., Tenn., Texas and Va.) that are required by law to list the amount of poa annua seeds per pound on the label, Laxton explained. In that case, a seed test will always show how much poa annua is in a bag of seed.

"Poa is a bigger problem in the Willamette Valley now vs. five to six years ago," he said. "When we field burn, we burn all the poa seeds left

Oregon Grown Grass Seed Characteristics

| Growth Habit | Establishment Rate | Leaf Growth Rate | Competes With Weeds and Other Grasses | Thatch Formation | Shade Tolerance | Drought Tolerance | Cold Tolerance | Traffic and Wear Tolerance | Seeding Rate |
|--------------------|--------------------|------------------|---------------------------------------|------------------|-----------------|-------------------|----------------|----------------------------|---------------------|
| Bunch Type | Very Fast | Very Fast | High | Low | Fair to Good | Good | Good | Very Good | 450-600 pounds/acre |
| Bunch Type | Very Fast | Very Fast | High | Low | Good | Very Good | Good | Excellent | 250-400 pounds/acre |
| Bunch Type | Medium | Medium | Low to Medium | Low to Medium | Very Good | Very Good | Very Good | Very Good | 250-400 pounds/acre |
| Spread by Tillers | Medium | Slow to Medium | Low to Medium | Medium | Very Good | Good | Very Good | Poor | 200-300 pounds/acre |
| Spread by Rhizomes | Slow | Slow to Medium | Medium | Medium to High | Fair to Good | Good | Very Good | Good | 60-100 pounds/acre |
| Spread by Stolons | Medium | Medium to Fast | High | High | Fair | Poor to Fair | Excellent | Good | 30-50 pounds/acre |

Burning Bridges

there after a harvest. We don't catch all the seeds when we don't burn. So, more and more poa seeds are left every time. And for three years we've had the kind of wet, mild winters poa loves."

How much poa per pound in a bag of turf seed is too much? Laxton said a pretty low level is nine poa annua seeds per pound, which equates to one poa annua seed in one sample of that blend.

"You should try to find lots with a little poa," Laxton said. "You'd prefer to have lots with no poa at all because it is a prolific seeder. If you start with a little, you could end up with quite a bit."

Looking for the amount of crop, weed and inert matter in a turf seed blend is searching for the mechanical purity of the seed. Most of this information can be found on a seed label, but all of it is available on a seed test.

"The only problem with a seed test when it comes to purchasing turf seed blends is that you rarely get to see a test of that mixture because there are three or four species in a blend," Laxton points out. "You usually get a test of each component of that mixture."

The Oregon blue tag, separate from a seed label, verifies that the levels of mechanical purity in a blend have reached a certain standard, Laxton explained.

"It tells contractors that they're actually getting what they ordered," he said. "There's no quality required without the blue tag. Just don't forget that weed seeds like poa trivialis and poa annua are allowed in certified seed, so contractors still have to be mindful of it."

To get an Oregon blue tag, an official, unbiased sample is drawn up of the turf seed blend and is taken to Oregon State University for testing. Mechanical purity is determined based on specific species standards, Laxton pointed out.

"You'd like to see seed that is 100 percent pure, but that never happens," he said. "Ryegrass usually has a standard in the high 90 percent range. Tall fescue and bentgrass must be 98 percent pure to be certified. Fine fescue must be 97 percent pure. The standard for bluegrass is 95 percent. Bluegrass and fine fescue always have lower purity standards be-

Turf seed growers have been banned from burning a majority of their fields to clean them before planting seed – and this has led to a vast variance between the good and bad quality product.

"Purchasers of seed have to know now more than ever what they are buying before they buy it," noted Scott Harer, national sales manager – turf, Advanta Seeds Pacific, Albany, Ore. "If the price is cheap – there's usually a reason why. Fifteen to 20 cents can make a difference."

Besides other weed, disease and insect infestations, the biggest weed problem turf seed growers are having due to a lack of field burning is poa trivialis in ryegrass fields and poa annua in bluegrass fields.

"Weed control is a bigger issue than disease control and pest control," said Keith Laxton, vice president, operations, Seed Research of Oregon, Corvallis, Ore. "It's an ongoing control issue that effects overall quality. It means we have to use more pesticides to control the problem, and pesticides can be a mixed bag – there are things we can't control."

A lack of burning, said Tom Stanley, marketing director, Turf-Seed, Canby, Ore., has also resulted in shorter crop rotations.

"The stand life for a tall fescue field was six to eight years with burning," he said. "Now that stand life has been reduced to three years."

Despite the bans and additional production costs, Stanley said growers have readjusted well to the changes by developing their post harvest techniques and still getting decent yields without burning their fields.

"After a harvest, we make sure the straw is removed, usually by baling it off," Stanley explained.

Although field burning is a cheap, rapid and effective way to purify the field and get rid of insects and disease, Tom Peters, sales, Barenbrug USA, Tangent, Ore., said growers will do what they can to produce quality seed.

"If we can't grow the finest seed," he said, "we will find a way to clean what we grow."
– Nicole Wisniewski

cause they have high levels of inert matter and are harder to clean."

Another thing to watch out for when purchasing turf seed varieties is common, or VNS (Variety Not Stated) varieties. VNS on a label usually means that the specific turfgrass varieties are unknown.

"The advantage to buying VNS seed is that it's less expensive," Bosch said. "The disadvantage is that you just don't know what you're getting. Sometimes you get what you pay for."

WHERE NTEP MATTERS. Although National Turfgrass Evaluation Program tests are an unbiased way to get information about turf seed varieties overall, according to most suppliers, it's also important for landscape contractors to consider other information when purchasing seed.

"A lot of times the best varieties listed on NTEP aren't available," pointed out Steve Witten, research director, Cascade

International Seed Co., Aumsville, Ore. "The best available variety may be located on the second page of the test. The reason being that it's a general rule of thumb that the best turf types are the worst seed producers and vice versa."

NTEP results do give purchasers of seed an indication as to a turf seed variety's adaptability to a certain region of the country, said Dave Nelson, administrator for the Oregon Tall Fescue Commission and executive secretary for the Oregon Seed Council, Salem, Ore.

"If grasses do well in a certain region of the country," Nelson stressed, "then they rank up there with the top-rated turfgrasses on NTEP results as far as adaptability is concerned and will make a fine seed blend no matter what page they're on." **L**

The author is Assistant Editor of *Lawn & Landscape* magazine.

By Nicole Wisniewski

T

raveling to Russia, China and around the rest of the world, poking their noses around cemeteries and parks—anywhere a strange turfgrass may be growing, researchers and turf seed growers are always digging up unusual turfgrass species for examination.

It's something they are doing in search of what they call an endophyte – it's naturally occurring and is found in one out of every 10 grass cultivars collected, according to Doug Brede, research director, Jacklin Seed, Post Falls, Idaho. There are also many different strands of it out there. Yet endophytes are a welcome intruder in the eyes of turf seed growers and landscape contractors because they produce alkaloids to kill or repel common insects that feed on turf.

As endophyte-enhanced grasses become more popular because of their resistance to pests and as herbicide-resistant grasses become more of a possibility, the research surrounding new turfgrass developments also expands.

ENDOPHYTE ENHANCED. It was around 1980 when reports first surfaced in the turfgrass industry of grass cultivars that were naturally resistant to certain common turf insects.

While endophytes are hosted well by turfgrass species that have naturally occurring endophytes, such as tall fescue and ryegrass, they are not as readily accepted into fine fescues and bluegrasses, according to Dave Nelson, administrator of the Oregon Tall Fescue Commission and executive secretary of the Oregon Seed Council, Salem, Ore.

After endophytes are found in turfgrasses, researchers grow them and insert them into a new grass plant. The endophytes will affect one out of every 10 plants through this method, Brede said.

"Most endophyte-enhanced varieties on the market now – about 90 to 95 percent – have been produced using this method," added Keith Laxton, vice president, operations, Seed Research of Oregon, Corvallis, Ore.



With endophyte-enhanced and herbicide-tolerant grasses, research surrounding new turfgrass developments with enhanced resistance to pests and herbicides is expanding. Photo: Dow AgroSciences

Endophyte enhancement and herbicide resistance are among the most notable ongoing developments in new turfgrass varieties.

Top Trends in Turf

Bluegrass, however, is particularly resistant to endophyte enhancement, and a Kentucky bluegrass with naturally occurring endophytes has yet to be found, Brede stated.

"We speculate that there is a naturally occurring mechanism in bluegrass that

repels endophytes," Brede pointed out.

Frequently, when bluegrasses and fine fescues are injected with endophytes, a fungus called choke results. The fungus acts as a naturally occurring collar below the seed head and cuts off the circulation to the plant, killing it, Nelson said.


"Last year, 90 percent of the plants we injected with endophytes choked," Brede continued. "This year, we're looking very closely at the 10 percent that didn't choke. We probably have two to three years of lab studies before perfecting this, but we're working quickly."

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FIGHTING WEEDS. After 10 years of naturally breeding turfgrass, spraying it with glyphosate and keeping the survivors for further testing, Turf-Seed, Canby, Ore., will introduce an herbicide-tolerant tall fescue and hard fescue this fall, according to Crystal Fricker, director of research at Pure Seed Testing and vice president of research at Turf-Seed.

One of the major benefits of an herbicide-resistant grass, Fricker said, is eliminating weeds, such as poa annua, that have become a big problem lately.


"With our grasses, you can kill poa annua by using 4 ounces of glyphosate in two applications without harming the turf," Fricker explained.

This is the natural method of breeding an herbicide-resistant grass. Creating an herbicide-resistant turfgrass through a transgenic or biotechnological method is still four or five years off, Fricker noted.

Concerns surrounding the breeding of an herbicide-resistant grass have included fears that the grass could get into the environment and become uncontrollable. Tom Peters, sales, Barenbrug USA, Tangent, Ore., said it has the possibility of restricting the rotation of crop fields.

"I don't see a huge benefit for producing an herbicide-resistant grass," Peters said. "Farmers are constantly trying to kill grasses that come up in their fields with glyphosate, and these fields are rotated with grass fields. Then the grasses in the crop fields won't die and the rotation of fields will become limited."

By producing a glyphosate-tolerant grass, Fricker said those fears can be eased.

"With these grasses you can still kill the weeds," she pointed out. "You just need a larger dose of glyphosate - about 1-2 quarts." 

The author is Assistant Editor of Lawn & Landscape magazine.

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Seed Market Report

1999 Turf Seed Buyers' Guide

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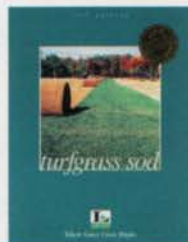
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To assist its readers in energizing, diversifying and redefining their businesses to meet the management challenges of the 21st century, *Lawn & Landscape* magazine announces dates for the **2000 School of Management Conference**. The conference will be held **February 13-15, 2000** at the Dallas Marriott Quorum Hotel in Dallas, Texas.



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School of Management Research Fast Fact



[Source: 1999 School of Management Attendee Survey]

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- 5:00 - 6:30 p.m. Opening Session
- 6:30 - 8:00 p.m. Welcome Reception



Monday, February 14

- 7:30 - 8:15 AM Continental Breakfast
- 8:15 - 10:25 AM General Session
- 10:25 - 10:45 AM Refreshment Break
- 10:45 - 12:00 PM Concurrent Educational Sessions
- 12:00 - 1:15 PM Contractor Roundtable Lunch Sessions
- 1:30 - 2:45 PM Concurrent Educational Sessions
- 2:45 - 3:05 PM Refreshment Break
- 3:05 - 4:20 PM Concurrent Educational Sessions
- 4:30 - 5:45 PM General Session
- 5:45 - 7:00 PM Cocktail Reception

Tuesday, February 15

- 7:30 - 8:45 AM Breakfast Workshop
- 9:00 - 10:25 AM General Session
- 10:25 - 10:45 AM Refreshment Break
- 10:45 - 12:00 PM Concurrent Educational Sessions
- 12:00 - 1:15 PM Contractor Roundtable Lunch Sessions
- 1:30 - 2:45 PM Concurrent Educational Sessions
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[Source: 1999 School of Management Attendee Survey]

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• While most parts of the
 • body are susceptible to
 • cumulative trauma
 • disorders, one key in
 • preventing injuries is
 • designing equipment that
 • is adjustable to each
 • individual operator.
 • Photo: Scag

E

ngineers always want to build a better mousetrap. No matter how good the design is, it can constantly be improved.

When it comes to ergonomics, this is no different. Mower manufacturers have been improving on and continue to refine the design of their equipment so that it is ergonomically compatible with human capabilities and limitations.

Rather than design tools and tasks without any thought to how the human fits in, ergonomics seeks to understand anatomy and physiology, and then design equipment to fit those requirements. According to Dan

MacLeod, a consultant in ergonomics, the field provides a strategy for engineering design and a philosophy for good management.

These concerns have become a key component in mower design. Manufacturers are now involved in identifying which body parts are sensitive to ergonomic controls, the disorders that can be caused by poorly designed equipment and how to improve upon the ergonomic development of mowers.

A SENSITIVE TOPIC. In order to design equipment to better suit ergonomic needs, it is important to know exactly what areas of the body are sensitive to proper ergonomic design.

"There are probably no body parts that aren't sensitive to proper ergonomics," MacLeod commented. "But the joints of most concern today are the wrists, elbows, shoulders, neck and lower back. People who work on their knees a lot might have problems there. If you walk a lot, especially on hard surfaces like concrete, you can have problems with your heels."

"I think that just about all of the parts of the body are susceptible because any repetitive

With ergonomics becoming a factor in mower design, contractors should know their options when purchasing equipment.

By Angela Dyer

Healthy Alternative

12 Principles of Ergonomics



1. Keep everything in easy reach
2. Work at proper heights
3. Reduce excessive forces
4. Work in good postures
5. Reduce excessive repetition
6. Minimize fatigue
7. Minimize direct pressure
8. Provide adjustability and change of posture
9. Provide clearance and access
10. Maintain a comfortable environment
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motion can strain body parts," added Don St. Dennis, managing director of corporate communications for The Toro Company, Bloomington, Minn. "If you continue to strain them, then you can intensify any problems."

John Crowson, national sales and marketing manager for Scag Power Equipment, Mayville, Wis., said that the parts of the body that may be affected varies widely with the type of product being used and the individual using it.

"The back, shoulders, neck, arms, hands and legs can all be impacted by ergonomic designs," Crowson mentioned.

Getting a little more specific, Deven McGhee, project engineer for Encore Manufacturing, Beatrice, Neb., commented that with walk-behind mowers, the most sensitive area in the hands.

"This includes hand position and the distance the hand has to travel," McGhee stated. "This also, in turn, affects the shoul-

der. What helps prevent any problems is making the machines adjustable to the person's stature."

McGhee also added that on riding mowers, the most stress can occur on the lower back area and the legs. "These crew members may sit for three or four hours at a time and they need comfort in the ride for that long of a period," he said.

Because of these areas that are sensitive to ergonomic design, problems can occur such as wear and tear on the joints and the surrounding tissue, which are known as cumulative trauma disorders, MacLeod commented. "Depending on the situation, non-ergonomic design can be inefficient, prone to mistakes and errors, and can also cause fatigue," he added.

One of the most well known of these cumulative trauma disorders associated with ergonomics is Carpal Tunnel Syndrome.

(continued on page 88)

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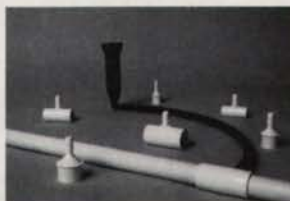
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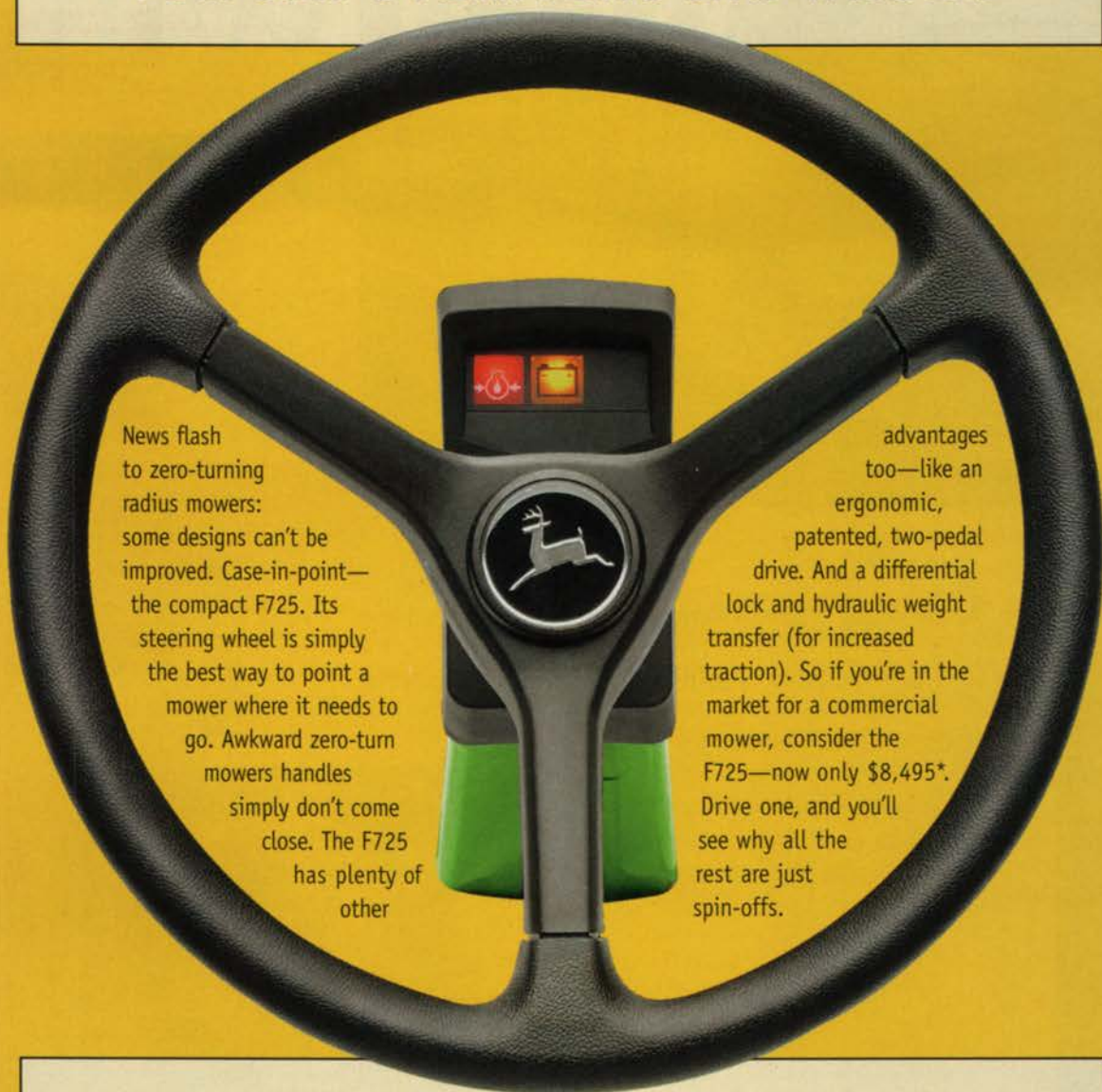


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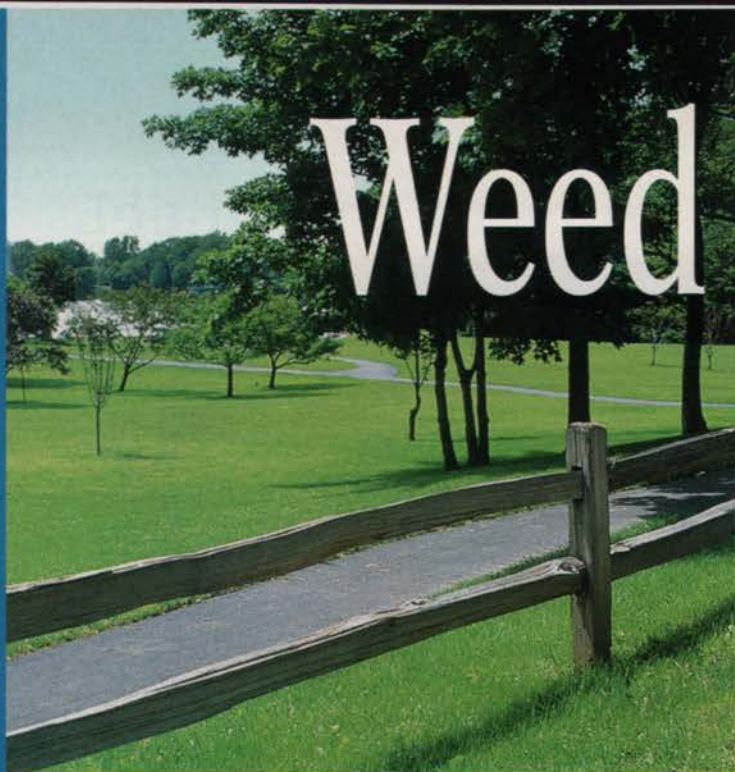
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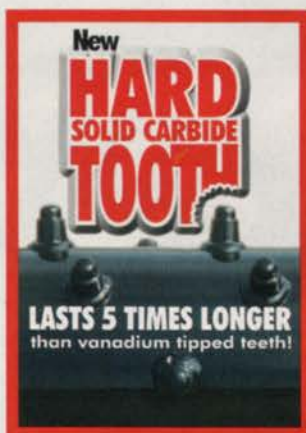


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mower ergonomics

(continued from page 84)

The Elements of Risk

According to Dan MacLeod, an ergonomic consultant who conducted a study on ergonomics in the mower industry, several factors can increase the risk of developing a cumulative trauma disorder. A CTD can be described as wear and tear on the joints and the surrounding tissue because of overuse. The more factors that are involved and the greater the exposure to each, the higher the chance of developing a disorder.

- **Repetition**—the number of motions made per day by a particular part of the body.
- **Force**—the exertion required to make these motions.
- **Static Load**—Continuous loading of a muscle group.
- **Awkward Postures**—The positions of the body that deviate from neutral in making these motions, primarily bent wrists, elbows away from their normal positions at the side of the body, and a bent or twisted lower back.
- **Contact Stress**—Excessive contact between sensitive body tissue and sharp edges or unforgiving surfaces on a tool or piece of equipment
- **Vibration**—Exposure to vibrating tools or equipment, whether a hand-held power tool or whole body vibration.
- **Temperatures**—Exposure to excessive heat and cold.

A common injury with walk-behind mowers is Carpal Tunnel Syndrome, which is often caused by vibration, gripping, direct pressure on the wrist and repetitive hand motions. Photo: Toro



ligaments that goes across your palm," MacLeod explained. "Under certain conditions, this nerve can be compressed or damaged, resulting in soreness, pins and needles in your fingers, weakness and other symptoms."

MacLeod added that the conditions that can damage this nerve include vibration, constant gripping, direct pressure applied on the wrist – or even worse, using the hand as a hammer – heavy squeezing, working with a bent wrist, cold and/or repetitive hand motions.

DESIGN AND DEVELOP. Several mower enhancements have occurred in the design process that have improved design from an ergonomic standpoint.

"One of the big breakthroughs has been in the creation of the hydrostatic drive because it increases productivity and also gives the operator more maneuverability," McGhee explained. "Then workers don't have to spend as much time doing trimming

"Carpal Tunnel Syndrome is one of the biggest problems and it primarily occurs with walk-behind mowers," McGhee noted. "One of the nerves that runs down the

arm to the hands and fingers happens to pass through the Carpal Tunnel, which is a small channel in the wrist formed by bones on the back of your hand and the band of



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USE READER SERVICE #60

mower ergonomics

or edging with hand-held equipment. A hydrostatic mower also offers additional flexibility."

Specifically, in terms of the grip design on mowers, MacLeod listed a host of factors that have driven the need for change.

"A variety of factors affect grip design," MacLeod remarked. "These include the size of the grip, the force required to squeeze the hand brakes, the lack of ability to vary the position of the hands (such as constantly having to keep hands in a gripping position), the posture of the wrist, vibration transferred to the hand and pressure points that press into the hand - hard edges and narrow points of contact between the hand and the grip."

He added that the height of the handles can also affect the posture of the wrist depending on how tall the person is.

St. Dennis explained that when it comes to new designs and developments, Toro starts with a safety committee that evaluates every project.

"This means everything from trying to modify the height of mowers for the design to accommodating different body types," St. Dennis mentioned. "We don't make just one standard design because there is more than one-sized person out there."

DECISION TIME. What should contractors look for when purchasing a mower? What ergonomic needs should they be on the watch for? Manufacturers shared some ideas about what to buy.

"Contractors need to look at the durability of the mower," McGhee recommended. "They need to evaluate the adjustability of the controls to see if they will meet the needs of their physical size. If they walk up to a machine and put their hands on the controls and they fit the hand

•••••

One of the most well known cumulative trauma disorders, today, associated with ergonomics is Carpal Tunnel Syndrome.

•••••

Cost Conditions

In an ergonomics study conducted by a certified professional ergonomist, Dan MacLeod, the financial costs of poor ergonomics can be as severe to employers as the physical symptoms are to those affected. Cumulative trauma disorders (caused by wear and tear on joints) can increase costs in a variety of direct and indirect ways:

- 1. Workers' Compensation**—A growing portion of workers' compensation payments are related to cumulative trauma of the lower back and upper limbs (lost time, medical treatment and disability costs).
- 2. Turnover**—Dissatisfaction caused by fatigue, working in uncomfortable positions and experiencing symptoms of cumulative trauma may

easily lead to increased employee turnover.

- 3. Absenteeism**—Similarly, a common reason why workers are absent is that they are experiencing early stages of a cumulative disorder. Work that hurts is not satisfying.
- 4. Morale**—Discomfort, aches and pains caused by poorly designed tools and workstations can affect morale.
- 5. Quality of Service**—People working at awkward and uncomfortable work stations or with poorly planned procedures are not in position to do their jobs "right the first time." Unsatisfactory work is more common.
- 6. Paperwork**—The paperwork involved in handling cumulative trauma cases can also entail significant staff time and costs.
- 7. OSHA Fines**—Some of the largest fines issued by the Occupation Health & Safety Administration have concerned repetitive trauma and related record keeping.

well, then that is what they need to look at."

St. Dennis explained that contractors need to find equipment that offers angles where the operator is the most comfortable. "Look for something that provides a certain amount of flexibility," he added

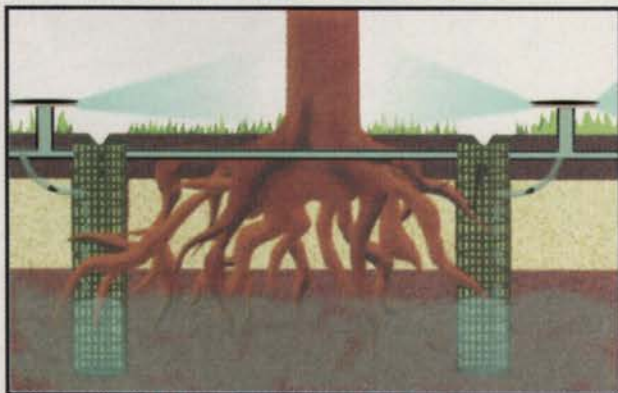
McGhee added that contractors need to purchase equipment with good cushions on the seat of a riding mower. Also on riding mowers, it is important to have arm rests so all of the force isn't on the shoulder. These positions should be adjustable for different statures of people.

"Contractors should look for mowers that deliver comfortable operation for their employees, which will minimize fatigue and maximize productivity," Crowson stated. "Cutting all day long is physically demanding work. Keeping the operator safe and comfortable is the key to overall productivity." **LL**

The author is Assistant Editor with Lawn & Landscape magazine

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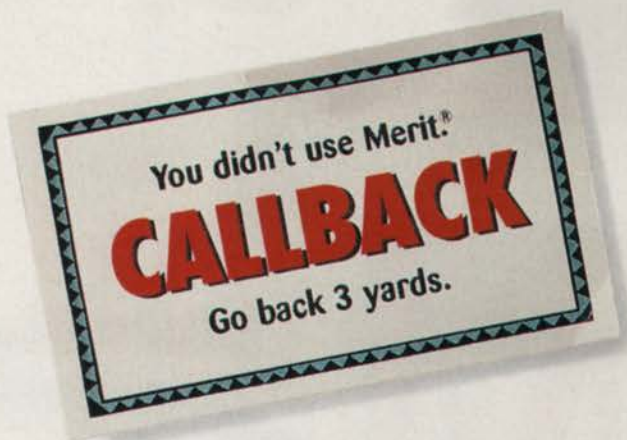
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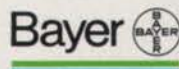


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USE READER SERVICE #54

• Monitoring the
• landscape's moisture
• is a key element to any
• successful irrigation
• system.

• By Angela Dyer

M Good Measure

W

hen it rains, it pours. But when it doesn't rain, an irrigation system is a contractor's answer to regulating landscape moisture. A key to having an efficient irrigation system is being able to monitor the landscape moisture levels in order to keep plant material in perfect health.

"It is important to monitor landscape moisture to determine if you need to make adjustments in your irrigation system," explained Takeshi Yamamoto, irrigation division manager at Del Conte's Landscaping, Fremont, Calif.

Ken Peshka, service manager at Cascade Lawn Sprinkling, Ada, Mich., explained the biggest importance to monitoring soil moisture is that grass is a cool-season plant and it will go dormant during dry spells.

"Grass needs moisture or it will shut itself down," he noted.

Both contractors and manufacturers defined the importance of frequent moisture monitoring along with how to make an adjustment, when needed, in the irrigation system.

METHOD FOR MEASURING. Contractors have many ways of keeping track of the moisture in a landscape. Some prefer the soil probe method while others opt for high-tech solutions.

"We use conventional soil probes,"

(continued on page 96)

Monitoring landscape moisture is important for determining when adjustments need to be made to an irrigation system. Photo: Bob Hobar



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USE READER SERVICE #66



2500 Series

landscape moisture

(continued from page 94)

remarked Yamamoto. "This method is mostly through visual observation. The probe pulls a 1/2-inch diameter of soil out of the ground so the contractor can see how far the moisture has gone through the soil. It's a more subjective method. It's one of those things where you just know what you are looking for based on past experience."

David Wickham, president of David

Wickham & Associates, Lake Mary, Fla., believes that using an irrometer is the best way to measure moisture.

"Using an irrometer is one of the better ways to measure and it also is the best known," Wickham commented. "It's beneficial if you have a large irrigation area like a commercial park or even a golf course. In

(continued on page 98)

Today's Technology

A common way of monitoring the moisture in any landscape is simply observing the plant material with the naked eye.

However, this method requires years of experience and knowledge in the green industry. According to Environmental Sensors, Escondido, Calif., there is now a more scientific way to check the landscape's moisture level.

Based on a technology known as Time Domain Transmissometry, Gro-Point is a portable sensor that offers an immediate response to changes in soil moisture. TDT technology measures the time that an electromagnetic wave travels along a given length of transmission line in the soil. This wave signal travels at different rates in wet soil and dry soil, then it is measured at the other end of the line from the transmitter. This wave will measure differences in the soil moisture up to 3 inches from the rods along all sides. The sensor can simply be installed in the landscape's root zone, and the percentage of soil moisture will appear on the display.

A similar technology, Time Domain Reflectometry, is the underlying technology that provides moisture profiling capabilities in a broad range of soils. TDR technology also measures the time a fast pulse edge takes to travel along a section of transmission line, however, TDR is based on a reflected wave and the time measure in a two-way or round-trip travel time. — *Angela Dyer*

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USE READER SERVICE #67

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OCTOBER/NOVEMBER 1998

A Diversified Workforce

| Education Level | Percentage |
|-----------------|------------|
| Less than HS | 14% |
| HS | 18% |
| Some College | 22% |
| College | 28% |
| Postgraduate | 18% |

What percent of your workforce is Hispanic?

T&O Service Tech To Expand to Six Issues

T&O Service Tech magazine has continued to grow since its debut three years ago. As a result of that growth and the overwhelming positive feedback the magazine generates with each issue, its publication frequency will increase to bimonthly in 1999.

Beginning with our January/February issue, readers will receive T&O Service Tech magazine every other month.

"Our fans go wild for our readers," related Chuck Cooke, group publisher of T&O Service Tech and Lawn & Landscape magazines. "When we introduced T&O Service Tech magazine to the industry in 1995, people scoffed at the notion of a publication written specifically for technicians, but our readers have made it clear to us that this is a valuable product that they rely on to continue their own education and training. It is because of this reader support that we are increasing our publication schedule in 1999."

In addition, Cooke announced that Bob West, who has served as editor of Lawn & Landscape magazine since August 1997, (see T&O on page 3).

TECHNICIAN of the YEAR AWARDS

T&O Service Tech magazine is proud to present our Technician of the Year program, an award designed to honor the best technicians for outstanding professional, dedication and community service to the green industry. Turn to page 12 to meet our best-ever Technicians of the Year. After reading about their accomplishments and commitment to the industry, nominate a technician for the 1999 Technician of the Year award on page 8.

community program suggests half-throttle blower use

KINGSTON, PENN.—A program was initiated in a small Pennsylvania community that had requested that landscape contractors limit their half-throttle use of gas-powered blowers. LNSK, Lansdale, opens its doors with Neighborhood 4. Kulis, promotes the use of gas-powered blowers at half-throttle within 150 feet of residential areas. The program, after a research discovery process by its founders and Kingston residents Mary and George Wiegler, is backed by three local landscape contractors, the Pennsylvania Department of Environmental Protection and Ekin, Lake Burke, PA.

"The Wieglers' and other community members' original intention was to ban the use of blowers in their community, according to Mary Wiegler, but the LNSK on page 3."

Some landscape contractors are working to establish blower use standards that avoid residential areas.

Photo: John

T&O Reader Poll

Please take a moment to answer our T&O Service Tech Reader Poll. This issue we want to know whether or not you think green industry technicians are fairly paid for their work. To respond, copy this page and fax it with your answer to Nicole Witkowski at 216/961-0364, or e-mail your response to witkowsk@qic.net.

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landscape moisture

(continued from page 96)

this case, it's good to have one irrometer for each irrigation controller."

According to the Weather Systems Company, Santa Clara, Calif., an irrometer operates on the tensiometer principle, which is different from systems that measure percent moisture. The irrometer consists of a sealed, water-filled tube equipped with a special vacuum gauge. A porous tip is installed in the ground at desired root-zone depths. In dry soil, water is drawn out of the instrument, reducing the water volume in the instrument and creating a partial vacuum, which is registered on the gauge. The drier the soil, the higher the reading.

Using a different method, Peshka puts his customers in charge of watching their own landscapes. He explained that when the grass is too dry, it gets a purple haze and the customers know to watch for this.

"I have customers in charge of their own irrigation systems," Peshka noted. "I set up

(continued on page 100)

Percentage Perception

According to Environmental Sensors, Escondido, Calif., moisture readings must be interpreted for site-specific conditions. The following percentages are the actual figures the moisture sensor reads. When checking levels, the field capacity percent is the maximum amount of water a soil can hold. The permanent wilting point is the level where the plant will die from a lack of moisture. Available moisture content is the field capacity percent minus the permanent wilting point.

| SOIL TYPE | FIELD CAPACITY PERCENT | PERMANENT WILTING POINT | AVAILABLE MOISTURE CONTENT |
|-----------------|------------------------|-------------------------|----------------------------|
| Sand | 10 | 4 | 6 |
| Loamy Sand | 16 | 7 | 9 |
| Sandy Loam | 21 | 9 | 12 |
| Loam | 27 | 12 | 15 |
| Silt Loam | 30 | 15 | 15 |
| Silty Clay Loam | 36 | 20 | 16 |
| Clay Loam | 32 | 18 | 14 |
| Sandy Clay Loam | 29 | 18 | 11 |
| Sandy Clay | 28 | 15 | 13 |
| Silty Clay | 40 | 20 | 20 |
| Clay | 40 | 22 | 18 |

Source: Blaine Hanson, Ph.D., Extension Irrigation and Drainage Specialist at the University of California at Davis

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*Mean Turfgrass Quality ratings of tall fescue cultivars grown in full sun at 27 locations in the U.S. LSD values 1-4/129

landscape moisture

(continued from page 98)

the timings on each zone and as the landscape becomes drier, the length of the application needs to increase."

He added that some of the probes on the market can cause an added expense to the customers, which can be a big factor in how the moisture is monitored.

Another option on the market now is a moisture sensor designed to measure the water content of the soil to find the trends of where the moisture is in the soil, according to Jan Windscheffel, sales and marketing manager for agricultural products, Environmental Sensors, Escondido, Calif.

"A sensor is a way to make sure that the adequate amount of water is being supplied and that the plants are not being over-watered," said Windscheffel.

"This will work like radar in the soil," Windscheffel mentioned. "It measures the moisture in the radius of the sensor to about 2 or 3 inches. It can be integrated into an irrigation system where it will help make the

decision whether or not the landscape needs irrigation."

He added that on a commercial building's irrigation system, for example, the sensor will check the moisture before the system starts to make sure the soil can hold that amount of moisture.

FREQUENCY FACTOR. No matter what method a contractor uses, following through on a monitoring schedule is important to the health of the plant material.

When the contractor is monitoring on a regular basis, it is often necessary to use a more exact method than just looking at plant material to determine if the soil will require moisture.

"Contractors have to measure the moisture in the soil," Wickham suggested. "It takes a lot of experience to look at the actual

.....

A key to having an efficient irrigation system is being able to monitor the landscape moisture levels in order to keep plant material in perfect health.

.....

plant material and determine the moisture content."

Yamamoto explained that to some degree a contractor can check the moisture level by looking at the plant, but it isn't a tell-all method.

"Contractors could easily be severely overwatering and the plants would still look good for quite awhile," Yamamoto said. "This means that they may not even realize the damage being caused, such as root damage. This method is acceptable for the short term, but contractors have to measure soil for long-term monitoring. Contractors

often over-water and it isn't obvious right away. This is unlike underwatering, which is apparent by looking at plants if there is too little moisture."

(continued on page 102)

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USE READER SERVICE #19

landscape moisture

(continued from page 100)

"Our account managers monitor on a regular basis – about twice per month," Yamamoto remarked. "Then we get feedback so we can adjust the controller."

According to Windscheffel, if a sensor is connected to an irrigation controller, then it can be set to check the moisture level twice each day, if necessary.

Monitoring should be an ongoing pro-

cess with irrigation, according to Peshka.

"During rain spells, customers may need to shut the system down," Peshka added. "We have to tell customers what their soil type is because this will be a factor in how much water the landscape needs."

AN ADJUSTMENT PHASE. When contractors are out on the properties taking measure-

ments and checking plant material, it is important to know the range that soil moisture levels can fluctuate before a change needs to be made.

"If you rate the levels of moisture as 'bone dry' being a one and 'super saturated' being a 10," Peshka noted, "the moisture level should be right in the middle, around five, but it could drop to even a three or four without being too damaging."

Windscheffel recommended placing a sensor in an area that has the highest moisture demand and tying the application of water to that area's need. This will keep any plants from being underwatered.

"The range of soil moisture depends on the soil type," Windscheffel mentioned. "A general range is about $\frac{3}{4}$ to 2 inches of water per foot of soil. However, in the top 6 inches of soil, some types can hold more than an inch of water each day and some as little as $\frac{1}{4}$ inch.

"With some sensors, contractors measure the volumetric water and soil," Windscheffel added. "On a typical loam soil, you need to maintain 25 to 30 percent of volumetric soil moisture. Clay soils require a higher percent and sandy soils need less to maintain optimum growth." (see sidebar, page 98)

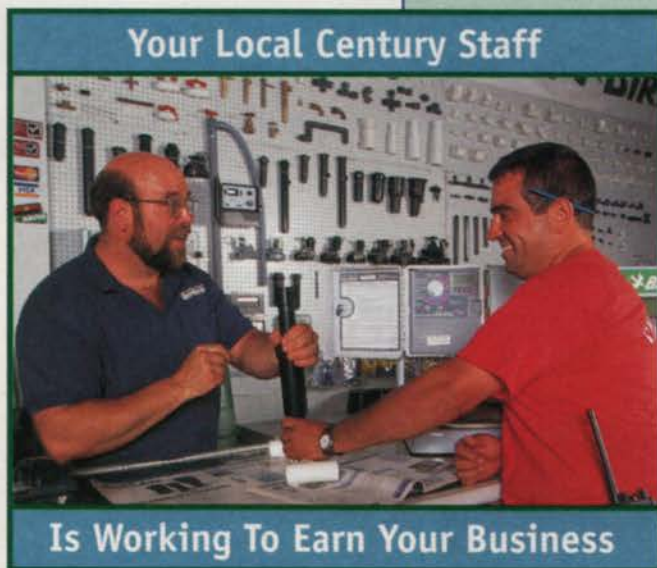
When a contractor determines that the moisture level is not in the proper range for a certain soil type, it's time for a change. Fixing a soil problem is often as easy as changing the controller program.

"Fixing a problem can be this easy, but it really depends on the specific situation," Wickham stated. "Sometimes I can simply adjust the irrometer."

Yamamoto agreed that dealing with moisture problems often a simple matter of controller adjustment.

"However, sometimes within one zone where you have a controller, there may be different watering needs in that area," he remarked. "This becomes a distribution problem because some spots may need more water while some may need less, but those areas might be in the same zone. When this happens, contractors may have to make adjustments by adding or removing sprinklers to get the proper distribution." **LL**

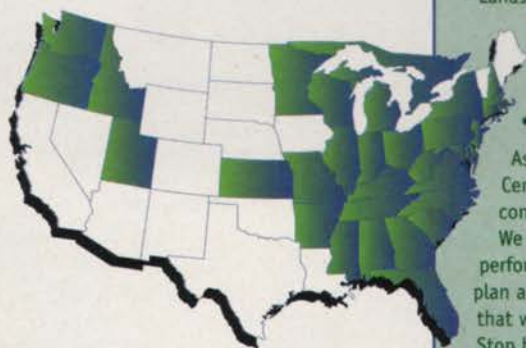
The author is Assistant Editor of Lawn & Landscape magazine.



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Trucks get all of the attention, but oftentimes it's the trailers that do the real work.

By Bob West

Bringing up the Rear

T

rucks are fun to talk about, right? They're big, powerful and considered very masculine, which makes them a real hit in the landscape industry.

But while contractors may focus heavily on their trucks, it's actually the trailers attached to those trucks that do the real work hauling equipment from the shop to the job and back each day. And, as more contractors take long-term views of their equipment expenditures and see trucks and trailers as true investments, the industry is moving away from traditional trailers and purchasing more chassis-mounted bodies, enclosed trailers and enclosed truck hauling setups.

A survey conducted via Lawn & Landscape Online found that 41.4 percent of respondents favor traditional open-style trailers with rear gates and 37.9 percent use enclosed trailers, which shows how popular enclosed trailers have become in the industry.

PUT ON THE ROOF. "I started my company after working for a larger company where we used all

(continued on page 106)

Using an enclosed trailer for transporting equipment gives contractors a mobile billboard projecting a professional image through the neighborhoods they work in. Photo: Wells Cargo





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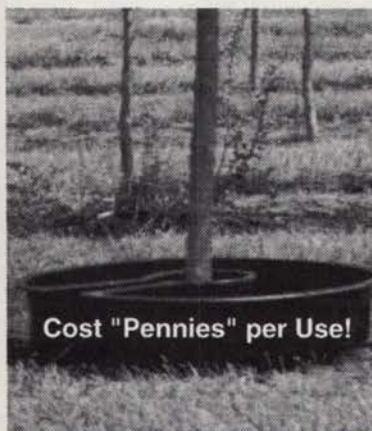
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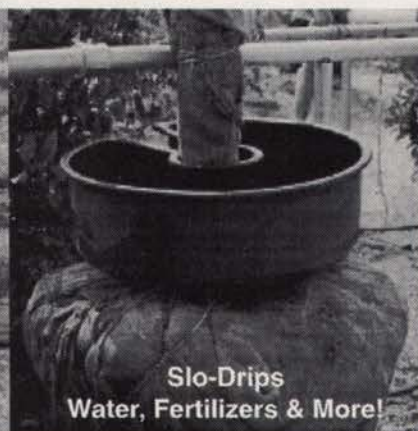
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trailers

(continued from page 104)

open-sided trailers," noted Mark Smith, president, Environmental Design Landscape, Charlotte, N.C. "The problem with those trailers is protecting the equipment, keeping it dry and keeping water from getting into the fuel and the fuel systems.

"You can put plugs on the spouts and caps on the vents, but those are only as good as the people putting them on. Then, when you have a cold day, the moisture collected in the carburetor will freeze up and the equipment won't start," continued Smith, adding that he only uses enclosed trailers now for his company. "Enclosed trailers cost a little more, but the cost is inconsequential because of the savings we get protecting the equipment and the protection from vandalism or theft as well."

Randy Lewis, national sales manager, Featherlite Trailers, Cresco, Iowa, pointed out that contractors can take advantage of the enclosed sides of a trailer for tremendous marketing opportunity.



The chassis-mounted landscape bed style of trailers seen here has become particularly popular with contractors in the Southeast as it offers better vehicle maneuverability in tight areas. Photo: Wil-Ro

"An enclosed trailer with a professional vehicle presents a quality image of a company as it's moving down the road," Lewis observed. "It's basically a traveling billboard once the contractor adds graphics, the company's name and its phone number.

"Plus, the enclosed sides essentially give contractors a garage on wheels that they can move, park, lock and leave secure when going into a restaurant for lunch or when on the job working," added Lewis.

Tony Bass, president of Bass Custom

Landscapes and Super Lawn Trucks, Boanire, Ga., speaks from experience when he talks about switching over to enclosed vehicles for transporting equipment.

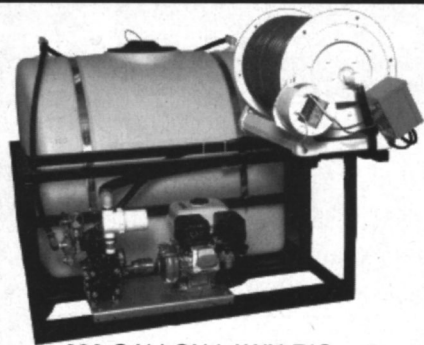
"I wanted to eliminate trailers entirely from my business and use a heavier duty truck designed for commercial applications," reasoned Bass when recalling his switch from open trailers to enclosed truck bodies mounted on a chassis.

"The key difference between open and closed trailers is the marketing potential,



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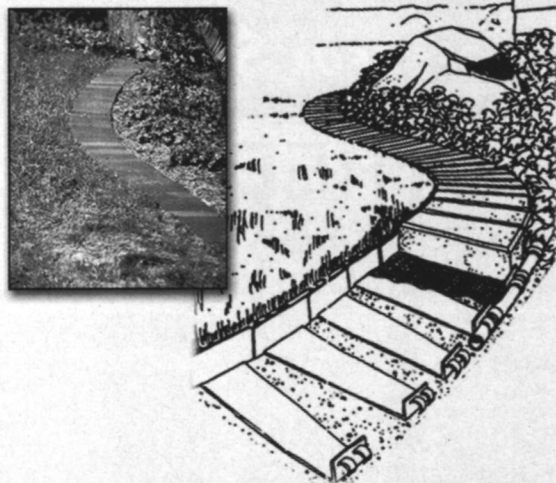
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with security coming in a close second," Bass continued. "Putting a company's name and phone number in such a visible spot as the side of a truck helps potential customers find you. Plus, the company also stands to make a huge impression on the general public by not exposing itself to other risks

.....

While contractors may focus heavily on their trucks, it's actually the trailers attached to those trucks that do the real work in hauling equipment from the shop to the job and back each day.

.....

associated with mobilizing equipment like having equipment fall off trailers or giving a sloppy image of your company."

Larry Hemmer, midwest sales manager, Wells Cargo, Elkhart, Ind., noted additional benefits to using enclosed trailers vs. open trailers.

"In order to reduce labor or driving time, some companies will use one truck to drop off a couple of trailers on large jobs where the crews will work all day," Hemmer commented. "That way the entire crew isn't being paid to drive from the shop to the job, and then

the truck can just come by at the end of the day and bring the trailer back to the shop."

"Also, brake replacement is a big issue on

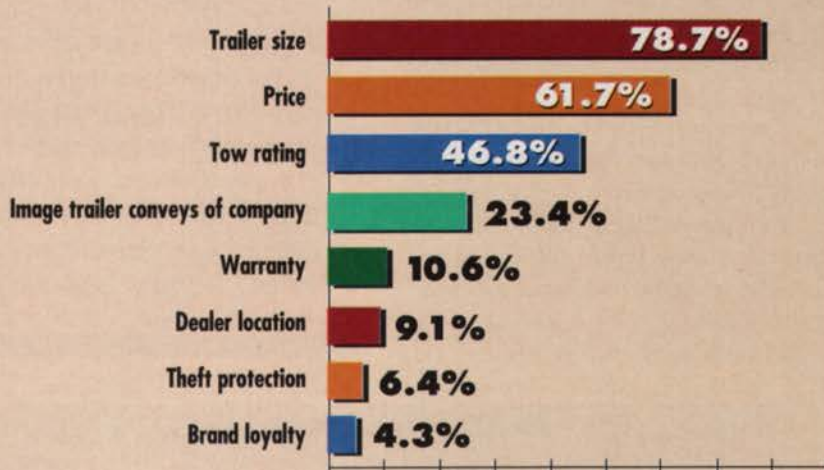
Trail Blazers

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A survey of 1,000 *Lawn & Landscape* readers focused on truck and trailer preferences, and here are some of the findings:

When asked what size trailer they prefer to operate, 35.6 percent responded that they prefer 7-foot by 16-foot units. This was closely followed by 6-foot by 10-foot models (31.9 percent) and 8-foot by 20-foot models (29.8 percent).

Respondents were also asked what three factors have the greatest impact on their trailer purchasing decision, and here's what they said with the percent of respondents naming each category as one of its top three:



Source: *Lawn & Landscape Online Reader Poll*

trucks towing trailers all day," added Bass. "And a driver can operate a vehicle with a cab-over design and an enclosed body in a much smaller area than he or she can with a half-ton pickup truck and a trailer."

TRAILER TIME. When it comes to using open-style trailers to transport equipment, some contractors have found a successful solution by mounting a landscape bed directly on the chassis of a truck.

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foot model, and then we add a 5-foot dove-tail slanting down to the ground to the end of that and a 4-foot drop down ramp," noted Terry Whitaker, sales manager, Wil-Ro, Gallatin, Tenn. "Springs can then be added to the ramp's hinging system to assist technicians in lifting the ramp each time they load equipment to reduce worker's compensation claims."

Nancy Hammond, fleet account manager for Peterbilt Carolina, Charlotte, N.C., said landscape beds as Whitaker described are increasing in popularity in her market and throughout the southeastern part of the country.

"Contractors really like the flatbed style with a 12- or 18-inch high side that can fold down," Hammond related.

"Incorporating the drop-down sides lets contractors use a forklift for loading and unloading plant materials or pallets of sod," noted Whitaker.

"Eliminating the trailer entirely saves

Dump Trailers

These units provide the capabilities of using many different style containers, i.e. open top (in sizes from 6 cubic yards up to 25 cubic yards), tool cribs (for on-site storage) and recycle-style containers. Also available are flat deck equipment carriers in sizes from 8 feet by 10 feet up to 8 feet by 16 feet for hauling anything from lumber and supplies to front loaders and tractors.

The units (containers/decks) roll completely off the trailer or truck and may be left at any location, giving contractors the convenience of having multiple containers at various job sites and the luxury of picking them up and hauling them to the landfill whenever necessary.

The trailer-style models hydraulic lift and winch is powered by a gasoline engine, while the truck-style models hydraulic lift and winch is powered by the PTO unit of the truck. Two control handles make operation very simple in that one-handle raises and lowers the tilt frame and the other handle operates the winch (on and off of the container). These units raise to an angle of approximately 52 degrees, which will easily dump most any type of debris.

The payload of the trailer models is about 3½ tons, while the payload of the truck models depends on the chassis and gross vehicle weight of the truck. A minimum ¾-ton truck is required for pulling the trailer-style models, while a minimum 1-ton truck is required for mounting a truck hoist. No commercial driver's license is required to operate and transport any of this equipment. — *Holt Specialty Equipment, Eagleville, Tenn.*

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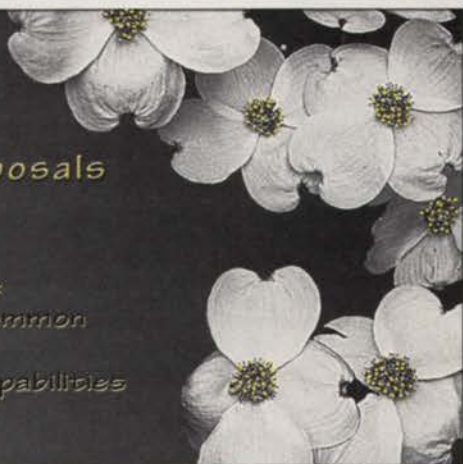
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the contractor some money and maintenance time in terms of insurance, tires, tags and wiring, and there's less maintenance required for bearings, breaks and shocks with a chassis-mounted trailer," added Hammond. "Plus, it's much easier to maneuver a truck with a mounted bed around a culdesac than it is to do when pulling a loaded trailer."

Even after deciding on a trailer style to employ, contractors have some decisions to make in terms of outfitting trailer with various accessories.

"Contractors have a number of options from installing heavier duty plywood side wall lining to tie down systems that secure equipment in place for transportation and a number of options for the floor deck," remarked Hemmer.

"We recommend contractors use a metal floor for the trailer to make it easy to wash out any gas or oil spills or grass clippings and dirt that accumulates," added Hammond.

.....

'Eliminating the trailer saves the contractor some money and maintenance time in terms of insurance, tires, tags and wiring, and there's less maintenance required.'

.....

"A ¾-ton pickup truck and a 16-foot trailer will probably cost about \$25,000 for a contractor, whereas a cabover body and a mounted body will cost about \$27,000," recognized Whitaker.

Hammond agreed that a landscape bed costs about \$3,500 on average, and even those models can be enclosed for an additional \$2,000 to \$3,000 depending on the whether the sides are made of aluminum (which is less expensive) or fiberglass reinforced panels (which is more durable).

Meanwhile, purchasing an enclosed trailer, which most manufacturers say will last eight to 10 years, to pull behind a pickup truck can cost anywhere from \$7,500 to \$12,500 for a 20-foot model. **LL**

The author is Editor of Lawn & Landscape magazine.

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Landscape fabric, with its many functions, can offer value to the landscape contractor.

By Angela Dyer

T

he green industry typically isn't the first that comes to mind when thinking of industry workers who may have an eye for fabric. In actuality, landscape contractors do need to be fabric savvy – with landscape fabric, that is.

There are many choices of fabric on the market today and several purposes it can be used for – weed control, erosion control and soil stabilization, for starters.

With these numerous options available, contractors need to be aware of what functions fabric can serve, which materials are suited for what applications and the steps to follow to make a fabric installation a success.

FUNCTIONAL FABRIC. Among the many functions that fabrics serve, contractors often use them primarily for weed control and erosion control.

"Landscape fabrics should be used to block weeds in landscape areas, around trees and under decks," Wright suggested. "If permeable enough, fabric may be used behind retaining walls for soil retention or under brick or block patios and walkways for stabilization. It can also be part of a blind drain system or used to wrap corrugated drain pipe to eliminate soil clogged drains. Most landscape fabrics must be covered with mulch or stone so this requirement sometimes limits its use."

Livingston added that fabrics definitely cut down on the maintenance hours needed for weed control. "Fabrics are woven in a way to let the water and air move through them," he noted. "Because of this, materials can be very useful for someone who doesn't mind the

(continued on page 112)



One function landscape fabric serves is weed control. When it is used in this capacity, it should separate the mulch from the soil and limit the maintenance required for beds. Photo: Reemay

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landscape fabrics

(continued from page 110)

expense and wants the maintenance help."

To determine when landscape fabrics are required on jobs, contractors must understand what types of jobs require fabric installations.

According to Jane Wright, business unit manager for Reemay, Old Hickory, Tenn., a primary function of fabric is to block weeds, thus minimizing maintenance in the landscape.

"The fabric should act as a separator," Wright explained. "In the case of beds, it offers weed control. In drainage, it is separating soil from pipes or fields. Under walkways, it is separating the soil or sand from brick or block."

"We use fabric primarily for weed control in our nursery and for under hardscapes likes patios and walkways," commented Hendrikus Schraven, president of Hendrikus Schraven Landscape Construction & Design, Issaquah, Wash. "We use it under patios so customers won't have large weeds like dandelions coming through any cracks in the hardscape."

Material Mishaps

Just as landscape fabrics have many purposes — weed control, erosion control and soil stabilizer — there are many mistakes contractors can make when installing the material. "The most common mistake made by contractors is buying a fabric based on price alone," stressed Jane Wright, business unit manager at Reemay, Old Hickory, Tenn. "To ensure maximum efficiency, the fabric must be strong enough to block weeds, yet porous enough to ensure the passage of necessary water and nutrients."

According to Patrick Blackburn, national sales manager for Fabriscape, Chicago, Ill., occasionally contractors think fabric will kill the weeds when that isn't its purpose.

"Contractors need to be sure to lay the material gently around the plant material," Blackburn added. "Also, for fabrics that aren't treated against ultraviolet rays, be sure to put down a lot of mulch or stone on the top of the material. If sun rays can get to the fabric, the ultraviolet rays will damage the fabric and cut down on its life expectancy."

The landscape bed needs to be raked very smooth, added David Livingston, president of Green Earth Services, Columbia, S.C. This will reduce the chances of any weeds coming up out of the ground and into the fabric.

"It's also important not to overlap too much," Livingston said. "Material shouldn't overlap more than 6 inches. If it does, it will hurt the potential water and air penetration to the roots."

Along those lines, Blackburn also pointed out that that it is necessary to overlap some so that mulch or stone won't get in the seams between the fabric. — *Angela Dyer*

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David Livingston, president of Green Earth Services, Columbia, S.C., uses fabric as a weed barrier under mulch.

"We also use it for erosion control under stones by a drainage ditch, for example," Livingston stated. "First, we cover the ground with the fabric, then we lay stone down."

"Fabric can also be used for slope stabilization," he continued. "You can just pin fabric to the slope and this slows down erosion and keeps the ground in place."

Contractors need to control erosion before it gets started, according to Todd Croke, assistant manager of technical services at North American Green, Evansville, Ind. "You want to stop it as soon as possible. That is when you want to use erosion control fabric."

A MATTER OF CHOICE. Once a decision has been made as to whether or not fabric is a necessary element of a landscape job, it's time to choose a fabric.

"Certain fabrics are better for different applications," mentioned Patrick Blackburn, national sales manager for Fabricscape, Chicago, Ill. "For good weed control, contractors may want a spun-bond material. If the fabric will be exposed to the sunlight, contractors may want to use a material with an ultraviolet stabilizer, which is usually a woven material."

"Woven nylon fabrics are popular fabrics on the market," Livingston echoed. "There are other synthetic materials available as well, such as rayon."

Wright explained that many landscape fabrics are made from polypropylene even though the manufacturing process for them will vary. When contractors are trying to

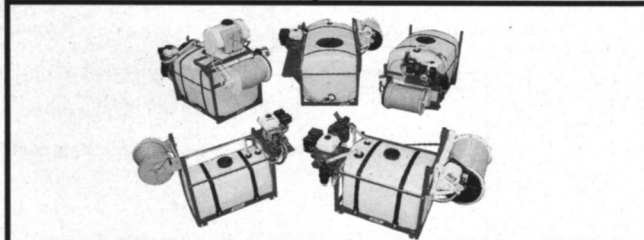
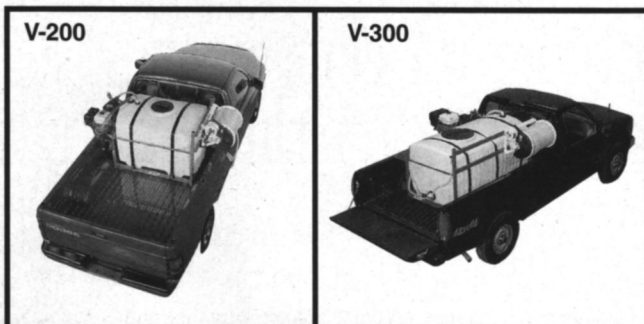
make their fabric selection, she suggested four considerations.

"First, the fabric must be permeable enough to pass moisture easily. This also prevents the wash-off of mulch," Wright recommended. "Second, fabric must have

Price is always a factor in any decision and fabric is no different. For erosion control blankets, Croke said the installed price may range anywhere from 45 cents to \$7 per square yard.

good tear strength to survive the rigors of installation. Third, its apparent opening size must be uniform in coverage to prevent weed penetration, and, finally, fabric must have good puncture strength to prevent rupture when loads are placed on it."

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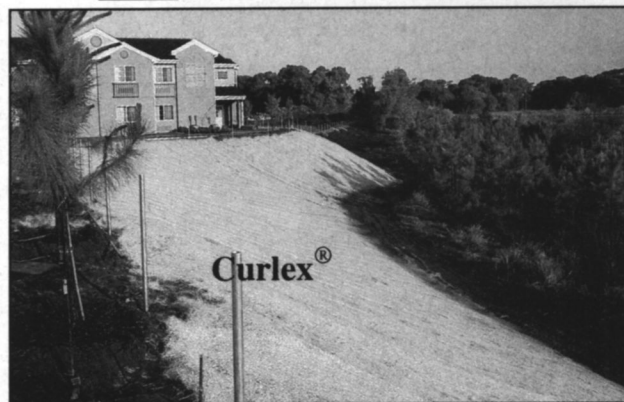
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EARTH SCIENCE DIVISION

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the right material is the slope of the ground on which the fabric will be applied.

"You have to know what type of application the fabric is going to be used for before you purchase it," Blackburn pointed out. "For example, if the area is sloped, you will want a non-woven material for weed control because it will attach better to the ground. If you are placing the material on a level area, you may want a spun-bond material because it has less 'grab' to it."

When choosing a fabric specifically for erosion control, Croke explained some available options.

"Products are temporary or permanent. You can use the temporary blankets in situations where vegetation would eventually be used for erosion control and the blanket is only necessary to get it started. The permanent variety is used to reinforce and aid the vegetation in erosion control," he noted, adding that the temporary blankets are either photodegradable or biodegradable.

Croke added that fabrics are made of a polypropylene netting and can have either a straw or coconut fiber, or a combination of both. Another option is a natural fiber netting for environmentally-sensitive areas.

"The coconut or straw fiber reduces the impact of raindrops on the ground," Croke remarked. "Since straw or coconut is part of the blanket and not just loosely thrown down on the ground, the water won't wash the straw or coconut away, which would mean the contractor would have to come back two or three more times and re-apply it. The straw or coconut also helps retain heat and moisture on the soil surface."

Price is always a factor in any purchasing decision, and fabric is no different. For

If the fabric will be exposed to the sunlight, contractors may want to use a material with an ultraviolet stabilizer, which is usually a woven material.' – Blackburn

erosion control blankets, Croke said the installed price may range anywhere from 45 cents to \$7 per square yard.

According to Blackburn, depending on the fabric type, pricing could range from 4 to 10 cents per square foot.

Livingston also mentioned that to install fabric, he has encountered prices as low as 20 to 30 cents per square foot.

TRICKS OF THE TRADE. After all of the options have been weighed and a final decision made, the installation is all that is left. Easy, right? It can be if the proper steps are taken.

(continued on page 131)

How to be outstanding in the rain, without being out, standing in the rain.

Let the Mini-Clik II® Rain Sensor work in the rain so you don't have to. Your customers will recognize your outstanding work, professional standards and service when you truly automate their irrigation system. At Glen-Hilton, we can't stop the rain, but we can stop the sprinklers!

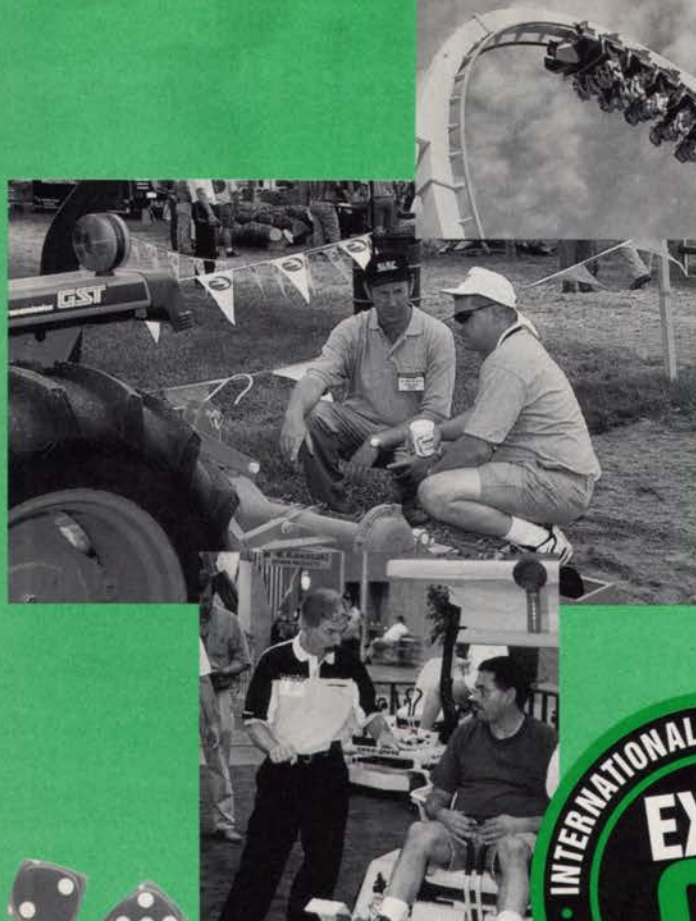


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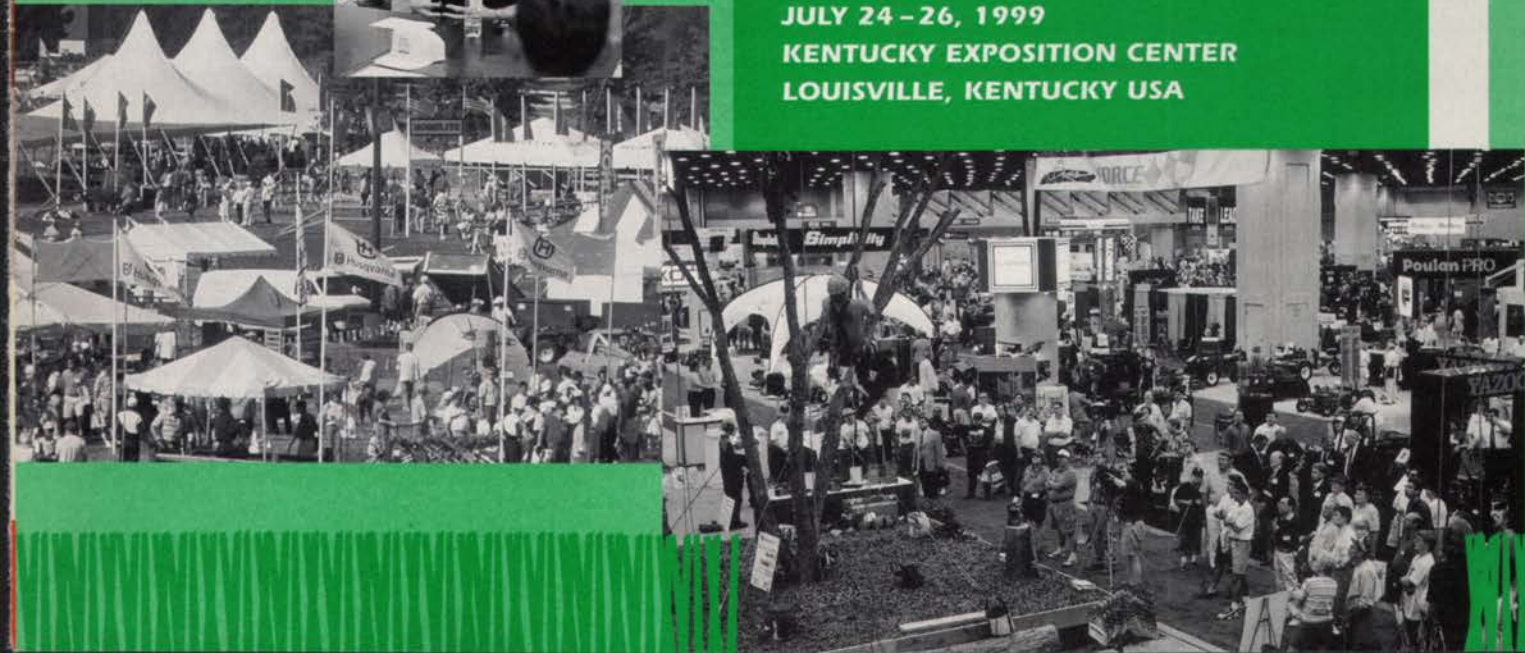


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L&L Looks Back **at the Early 80s**

EDITOR'S NOTE:

As Lawn & Landscape magazine begins its 20th year of publishing, we will be presenting a look back at the industry over the last two decades by revisiting some of the articles published in the pages of Lawn & Landscape soon after its inception.



While *Lawn & Landscape* got its start as *American Lawn Applicator* in 1980, our current owner, GIE Publishers, also started a green industry publication in December 1981. *ALA* was eventually merged with *Lawn Care Professional* after we acquired *ALA*.

A survey presented in the January 1983 issue of *Lawn Care Professional* noted that 64 percent of all lawn care businesses averaged less than \$50,000 in business in 1981, with 78.5 percent of them doing so profitably. (*Lawn & Landscape's* 1998 market research found that just 9 percent of the industry did less than \$50,000 in business in 1998, with 81.2 percent of the entire industry reporting some profitability.) The 1981 survey found that the industry billed \$1.5 billion in sales collectively, compared to \$61 billion in 1998.

The 1981 survey also estimated that lawn care professionals serviced 7 million lawns that year, with another 21 million not being serviced by contractors.

Yellow Pages advertising was, as it is now, a tremendously popular marketing method. More than 70 percent of respondents in 1981

used the Yellow Pages, followed in popularity by newspapers (49.2 percent) and direct mail (40.9 percent).

Labor prices have obviously been on the rise since the early 1980s, as survey respondents then put the average labor cost for salaried workers at slightly less than \$6 per hour, whereas many contractors today report paying more than \$10 an hour for hourly personnel.

PRICE CUTTING CONCERNS. "Price Slashing—Is It Everyone's Problem?" was the cover story of *Lawn Care Professional* in March 1983, and, obviously, no one has found a solution for this industry scourge as of yet.

Contractors interviewed for this 1983 article sounded remarkably similar to their 1999 counterparts as they lamented the frustrating frequency with which competitors "stole" business via under-measuring lawns, intense telemarketing or other unpopular approaches, and the struggling economy of the early 1980s wasn't helping matters.

"The recession may be actually swelling the ranks by making the easy way out of cutthroating seem more attractive to legitimate, but struggling, lawn care businessmen," wrote then-managing editor, Tim Weidner. "Many lawn care operators see budding cutthroats enter their local market with low-price, high-volume tactics, and they think that these people cannot possibly survive very long. In fact, most of these cutthroats do not survive because they don't possess enough business sense, but the few who do possess these skills continue to grow at an alarming rate." — Bob West

What Do You Think?

Have you watched the professional lawn care, landscape and irrigation industry grow up over the last 20 years? If so, do you have any thoughts on what have been the most important changes — for better or for worse — that have occurred in that time? Or do you want to share your thoughts on what are the most important issues and challenges facing the industry as a whole for continued success in the next 20 years?

Let us know by faxing us at 216/961-0364 or e-mail us at bwest@gie.net, and we'll share them in a future issue.

Lawn & Landscape

June 1999

Dear Green Industry Professional,

It's no secret that our industry is facing a severe labor shortage. In March, representatives from 18 of the nation's most prominent landscape companies came together at Husqvarna Forest & Garden's North American headquarters in Charlotte, N.C., for a two-day industry roundtable focusing on issues surrounding immigrant labor. Discussion at the event touched on a number of topics, with a central theme being the contractors' concerns that current federal legislation doesn't allow for reasonable opportunities to use legal immigrant labor.

Landscape contractors who have attempted to work with legislators to fix this problem, however, say that those individuals responsible for making the laws don't adequately realize the significance of this industry's labor shortage. As a result, *Lawn & Landscape* magazine is contributing these two pages to initiate the gathering of necessary information from the industry to open legislators' eyes to the severity of this problem.

For this effort to be successful, however, it is imperative that we maximize the number of responses to this survey. Otherwise it is easy for politicians to argue that the labor

shortage must not be too severe of a problem if contractors can't take the time to fill out one short survey. Readers are asked, however, to only submit one completed survey per company so we can compile the most accurate data possible. This survey will also be distributed via national, regional and local green industry associations, and association executives and officers are encouraged to contact us at 800/456-0707 or bwest@gie.net to request copies of the survey.

We have been told time and time again that the green industry is heading toward a real crisis that can threaten businesses' ability to grow and remain healthy. The time to act is now. Please turn to the next page and complete this survey and fax the page back to us at 216/961-0364.

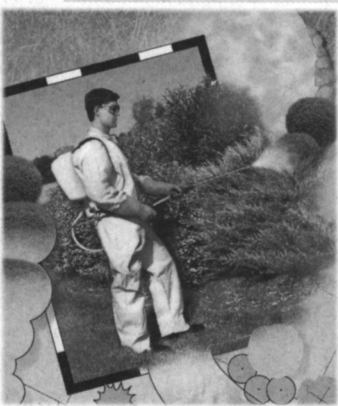
Best regards,

Cindy Code

Cindy Code, Group Publisher

Bob West

Bob West, Editor



**Your
Opinion
matters.**
*Please
respond
today!*

Lawn & Landscape

Landscape/Lawn Care Industry

1. What were your 1998 sales? _____
2. What is the current unemployment level in your local community?
_____ %
3. What different nationalities (i.e., Mexican, Colombian, Polish, etc.) do you currently employ? _____

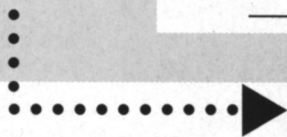
4. Approximately how many of your employees (as of July 1, 1999) will be Hispanic? (% and number)
_____ % _____ (actual number)
5. How many employees do you estimate you will employ on:
July 1, 1999? _____
July 1, 2002? _____
July 1, 2004? _____
6. How many more employees would you hire today if you had an unlimited supply? _____
7. How many more dollars in sales could your business have done in 1998 if you had this unlimited labor supply? _____
8. What state are you located in? _____
9. Are you participating in a recruiting program such as H2B for legal immigrants?

10. Please feel free to share any additional comments _____

**Your
Opinion
matters.**

*Please
respond
today!*

*Please
fax back to
Bob West*



216/961-0364

Ditch Witch Model 5000 Trencher

- 50-hp machine
 - Features a standard ground-drive foot control
 - Single handle controls the backfill blade
 - Has a "float" function for easier job site restoration
 - Can be equipped with a variety of work modules
 - Heavy duty, all-hydrostatic design
 - Oil-cooled Deutz engine
 - Seat swivels 20 degrees
- Circle 200 on reader service card**

K-Rain K2 Sprinkler

- Gear-driven
 - Has seven interchangeable 27-degree trajectory nozzles and four low angle 12-degree nozzles
 - Has a 5-inch pop-up height
 - Includes an advanced seal design
- Circle 201 on reader service card**

Vermeer Stump Cutter

- Self-propelled stump cutter is mounted on rubber tracks in its horsepower range
- Designed to climb and descend inclines and travel through narrow openings

- 50-hp diesel engine
 - Patented gear-driven cutter wheel system
 - Hydraulically-driven, two-speed, ground-drive system
 - Features a swing-out operator's station
 - Two joysticks control zero-turn radius steering and cutter wheel position
- Circle 202 on reader service card**



Grasshopper Collection Systems

- Quik-D-Tatch Vac unit attaches to Grasshopper 44-, 48-, 52-, 61- and 72-inch outfronts decks
 - It is available with 8-, 12-, 15-, and 25-cubic-foot rear-mounted collectors
 - Moves a high volume of air to carry wet grass and dethatching debris to the collector
 - Easy conversion to non-collection operation
- Circle 203 on reader service card**

Rohmid Fertilizer Formulations

- MACH 2 turf insecticide is now available in fertilizer formulations
 - In a class of chemical compounds called molt-accelerating compounds
 - Interferes with the normal molting process of the targeted pests
 - Controls a variety of grubs and caterpillars
 - Can be applied at low use rates
 - Poses little risk to fish, birds or mammals
- Circle 204 on reader service card**

Irritrol Controller

- 24-station model is an expansion of the Total Control Series
 - Designed for light commercial and residential use
 - Offers programming flexibility
 - Controls a wide variety of watering requirements
 - Four independent programs offer concurrent operation capability
- Circle 205 on reader service card**



DTN Turf Manager Product Labels

- Turf Manager provides satellite-delivered weather and specialty information
 - Label feature provides label text for 600 products
 - Labels contain complete information on types of plants, other areas for product use and pests that it controls
 - Provides critical rates, mixing and applications instruction
 - Storage and disposal information also available
 - Label printed directly from DTN system
- Circle 206 on reader service card**

Gehl Skid Loaders

- Model 4635 features a standard 44-hp oil-cooled diesel engine
- Model 4835 offers a 57-hp



- turbo diesel engine
 - Both models offer a choice of three control options
 - Standard equipment includes the All-Tach universal attachment mounting
 - Auxiliary hydraulic system enhances productivity
- Circle 207 on reader service card**

StoneWay Asphalt Paver

- Available in sandblasted or ground finish
 - Can be used for vehicular or pedestrian traffic
- Circle 208 on reader service card**

NEW PRODUCTS

Kohler engine

- An electronic fuel injection system is now available on the Command Pro 26 hp engine
- Fuel injection systems offer greater fuel efficiency and increased horsepower
- Helps lower engine emissions through efficient use of fuel

Circle 209 on reader service card

BlueBird Aerator

- EasyScape 742 Aerator offers productivity of more than 37,000 square feet/hour
- Free-wheeling tine design provides maneuverability
- Handles tight turns



system distributes weight over tine shaft

Circle 211 on reader service card

Caterpillar Skid Steer Loader Line

- Line includes six models
- Operator station has



ergonomic features such as low-effort controls and suspension seat

- Pilot-operated joystick control
- Hand throttle allows operator to set RPM at any desired speed

Circle 212 on reader service card

Glenmac Stone Picker

- Harley Model B is for large capacity stone removal
- Ideal for large or small space site work
- For tighter turning maneuverability

- Picks up stones, roots and trash
- 11 GPM @ 1500 psi hydraulic required
- Picks up stones, roots and trash in a 1/2- to 18-inch diameter
- Available in two models

Circle 210 on reader service card

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Lawn & Landscape

CHAT SESSION

magazine features its first organized, **LIVE** chat session via Lawn & Landscape Online

WHEN: Thursday, June 10

WHERE: www.lawnandlandscape.com

WHAT TIME: 8 p.m. to 9 p.m. EST

WHO: Hal Cranston, vice president of the western division at TruGreen-ChemLawn's landscape management division, *Lawn & Landscape* Editor Bob West and Assistant Editor Nicole Wisniewski

TOPIC: Consolidation in the green industry

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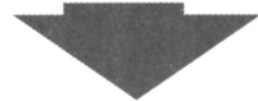
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| 2 | 26 | 50 | 74 | 98 | 122 | 146 | 170 | 194 | 218 | 242 |
| 3 | 27 | 51 | 75 | 99 | 123 | 147 | 171 | 195 | 219 | 243 |
| 4 | 28 | 52 | 76 | 100 | 124 | 148 | 172 | 196 | 220 | 244 |
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| 16 | 40 | 64 | 88 | 112 | 136 | 160 | 184 | 208 | 232 | 256 |
| 17 | 41 | 65 | 89 | 113 | 137 | 161 | 185 | 209 | 233 | 257 |
| 18 | 42 | 66 | 90 | 114 | 138 | 162 | 186 | 210 | 234 | 258 |
| 19 | 43 | 67 | 91 | 115 | 139 | 163 | 187 | 211 | 235 | 259 |
| 20 | 44 | 68 | 92 | 116 | 140 | 164 | 188 | 212 | 236 | 260 |
| 21 | 45 | 69 | 93 | 117 | 141 | 165 | 189 | 213 | 237 | 261 |
| 22 | 46 | 70 | 94 | 118 | 142 | 166 | 190 | 214 | 238 | 262 |
| 23 | 47 | 71 | 95 | 119 | 143 | 167 | 191 | 215 | 239 | 263 |
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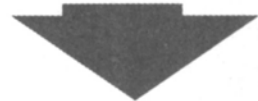
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Dairon Soil Renovator

- RDH-60 has a quick attachment system
 - For use with skid-steer loaders
 - Primary function is the fine cultivation of topsoil for seeding and reseeding
 - Rugged construction
 - Features patented self safety system that protects operators from flying debris
 - Uses the time-tested, oil-bath chain drive system and hydraulic motor
- Circle 214 on reader service card

Wikco Turf Spreader

- Model 800 estate turf spreader is a ground-driven fertilizer spreader
 - Has a durable poly hopper that won't corrode
 - Hopper has a 9-cubic-foot capacity
 - Will hold up to 800 pounds of lime or sand
 - Internal drag chain helps break up the material
- Circle 215 on reader service card



Lesco Spreader

- Mark II Rotary 100-pound spreader has a 3-position handle assembly
- Large capacity polyethylene hopper

- Stainless steel frame
 - 5-to-1 sealed gear box
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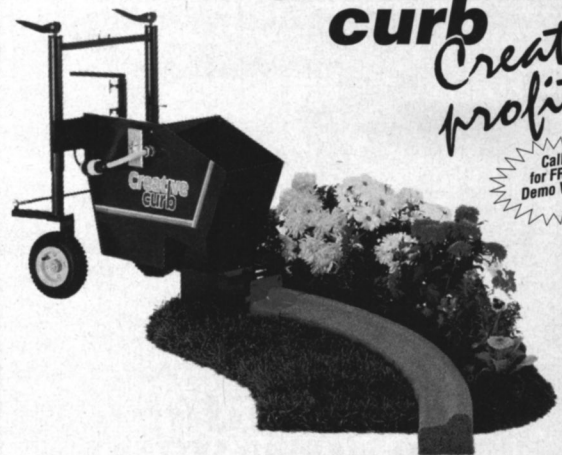
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- One-piece solenoid design
- Slow closing action prevents



- water hammer
 - Conforms to water pressures up to 200 psi
- Circle 217 on reader service card**

Woods Zero-Turn Radius Mower



- The 6225 Mow'n Machine offers a 25-hp Kohler engine
 - Features a 48-, 52-, 61- or 72-inch deck
 - Designed with a low, out-front, three-spindle deck
 - Allows for easy mowing under shrubs and low hanging branches
 - Floating deck kit allows free movement over terrain, while remaining parallel to the ground
 - Grass collection systems are available in 7.5-, 15- and 25-cubic-foot models.
- Circle 218 on reader service card**

Tanaka Trimmer

- TBS-2510 grass cutter/brushcutter weighs 12.4 pounds
 - Features the TH-97 BRAIN fully automatic cutting head
 - Contains a wide radius safety guard adding protection from debris
 - Heavy-duty anti-vibration system
 - Bearing supported, solid-steel drive shaft
- Circle 219 on reader service card**

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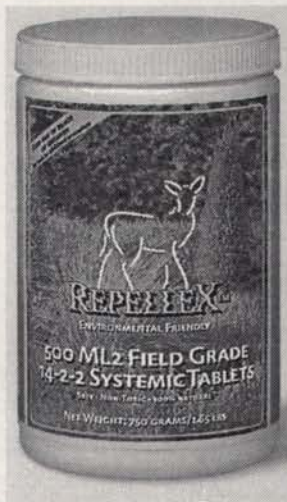
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NEW PRODUCTS

John Deere Hedge Trimmers

- H20D and H20S gas-powered hedge trimmers weigh 12.5 pounds
- Both models feature double-



reciprocating blades
 • Heavy-duty, two-shoe clutch prevents blades

- from slipping
- 24-inch, dual-sided blade on the H20D features backward and forward cutting motion
- Circle 220 on reader service card**

Kubota Front Mount Mowers

- F60 Series front-mount mowers offer compact design
- Diesel-powered 2- and 4-wheel drive
- Single-pedal operated hydrostatic transmission
- Auto-assist 4-wheel drive
- Dual-acting overrunning clutch system offers maneuverability

Circle 221 on reader service card

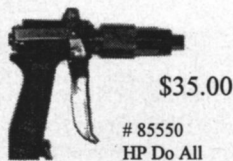


Walker Boom Sprayer

- SP6640 boom sprayer is easily mounted to all 36-, 42- and 48-inch Walker decks
- The sprayer also offers a 96-



- inch spray pattern
- Has a spray gun with a 20-foot hose as well as an adjustable spray tip
 - Operators can spray a mist and adjust to a 35-foot stream
 - 25-gallon tank contains sump that allows for easy cleaning
- Circle 222 on reader service card**



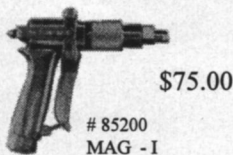
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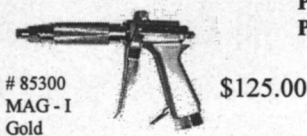
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MAG - I



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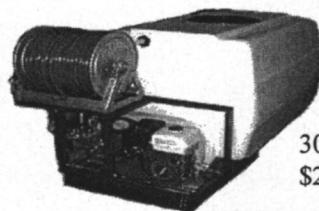
85300
MAG - I
Gold



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Spring
Specials



300 Gallon Spray Rig
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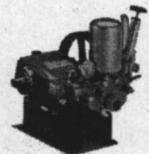
Shurflo 3GPM
2088
\$ 75.00



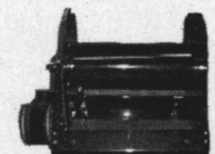
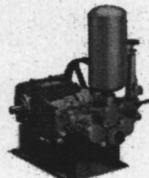
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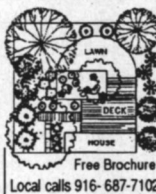
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- Landscape Designer
- Crew Leaders

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landscape fabrics

(continued from page 114)

"There are two primary ways to install — either before or after the plant material is installed," Livingston pointed out. "I believe it is easier to put the fabric down first and mark it where the plants will go. Then cut the fabric."

Livingston outlined a five-step method for a smooth installation:

1. Perform proper bed preparation.
2. Stretch the fabric so it is taut.
3. Use 6-inch staples to hold the material down.
4. Cut the fabric to closely fit the bed's configuration.
5. Mulch over the fabric.

Proper bed preparation, which Livingston listed as the first step, consists of clearing out grasses or weeds and then leveling the area, according to Blackburn.

Schraven described the staples that Livingston mentioned as steel pins that are approximately 6 to 8 inches long. After Schraven lays the fabric, he pins it down every 2 or 3 feet.

Blackburn added that these staples might not be necessary if the contractor is using a lot of stones that will hold the fabric in place without the use of steel staples.

Schraven also mentioned another key to keep in mind during installation. "Normally, you will have the bed made, you lay the fabric, punch holes for the plants and lay the mulch after plants are planted," he noted. "If you puncture the fabric too much it won't be effective because there won't be enough material left to stay attached to the ground. This is why fabrics are ideal for large commercial properties where contractors are planting only a few trees or plants in a large area."

This installation process is nearly identical for erosion control materials.

"If you have a slope application, you can roll the material down the slope and secure it with staples," Croke suggested. "You can use steel or even plastic or wood biodegradable staples. The choice would depend on the budget and the application."

"Steel is the least expensive but in areas like parks or other environmentally-sensitive areas," Croke added. "You may want to use the biodegradable staples so there won't be any damage to the environment." **LL**

The author is Assistant Editor of Lawn & Landscape magazine.

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CUSTOMER SERVICE AT RAYMOW

FROM THE TIME I was 12 and cut my first lawn, I knew I had to do something to make myself stand out from my friends who also cut lawns in the neighborhood. At that time, I didn't have access to "real" capital; it was just me, my mower and a trimmer. With that kind of equipment, I couldn't very well diversify my services. The only way I could add value to my service was to "do whatever it took" – a philosophy instilled in me – to please my customer, all the while only having access to a mower and a string trimmer.

Customer service has been Raymow's sole marketing tool from the beginning. For example, our largest customer today, generating almost 1/3 of this year's projected \$3 million in revenue, was also one of my first customers more than a decade ago, generating only a couple of hundred dollars per month.

At Raymow, we have broken down our philosophy into five key principles: 1) responsiveness, 2) flexibility, 3) dependability, 4) diversity and 5) exceptional quality service.

To us, responsiveness encompasses timeliness and accessibility. Our policy is that a supervisor must respond to all service requests within 24 hours. This offers us a slight com-

petitive edge considering that many companies' supervisors are inaccessible. At Raymow, we view problematic situations as opportunities to let our customers see first-hand that we don't just talk the walk, we walk the talk.

You may be saying to yourself, "How do they keep such demanding requirements on follow-up time?" Actually, it's pretty simple. Our \$3 million in revenue comes from just 10 customers. One contract covers a lot of bases. The limited customer base we've crafted over the years make responsiveness an attainable goal.

Another component of the customer service mix is flexibility. By flexibility, I am referring to the willingness to provide our customers with services that don't necessarily fall "inside the box." For instance, one of our customers, a developer, was having a problem with his company's signs within a community. During

the early morning hours and late at night, someone was stealing the signs that directed potential homeowners to his model centers. So the customer asked us to take on the responsibility of putting up these signs early in the morning and taking them down in the evening, seven days a week. Of course, we willingly took on the responsibility and have since been asked to perform various other value-added services for that customer, as well as for many others. Flexibility goes a long way toward your bottom line.

Hand-in-hand with flexibility comes dependability, another ingredient in the recipe of providing outstanding customer service. When your customers know they can depend on you to not be late, to not miss an appointment, to basically do what you say you're going to do, when you say you're going to do it, they come to trust you. And, as we all know, trust is the foundation of all relationships.

The next customer service component, also along the lines of flexibility and dependability, is diversification. Contrary to flexibility, when I speak of diversifying our services, I am primarily referring to diversifying service capabilities

within normal expectations of the green industry. For instance, Raymow began as a grounds maintenance company, but about five years ago we started adding services to meet our customers' needs. Our customers began requesting that we submit a price to install a landscape here and there, to prune a few palm trees, to install an irrigation zone and so on – all the while knowing we were only a grounds maintenance outfit.

Finally, Raymow's do-whatever-it-takes philosophy comes full circle with our commitment to provide exceptional quality service. In order to keep customers, you have to deliver quality. My customers know they are receiving quality because of the investment I've made in my people.

From being timely to being flexible and dependable, my company's do whatever it takes philosophy has resulted in the establishment of long-term relationships with my customers. So, instead of knocking on new doors, look to your current accounts and see what opportunities lie there. Start with the little add-ons, learn to do them well, and then market them to your current customers. Soon you will be growing your company without growing your customer base.

– Ray Bradley

The author is president of Raymow Enterprises, Oldsmar, Fla.

5 Key Principles

Customer Conscious

1. Responsiveness
2. Flexibility
3. Dependability
4. Diversity
5. Exceptional quality service



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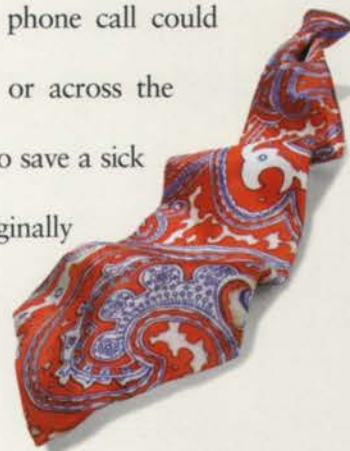
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