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August 2001

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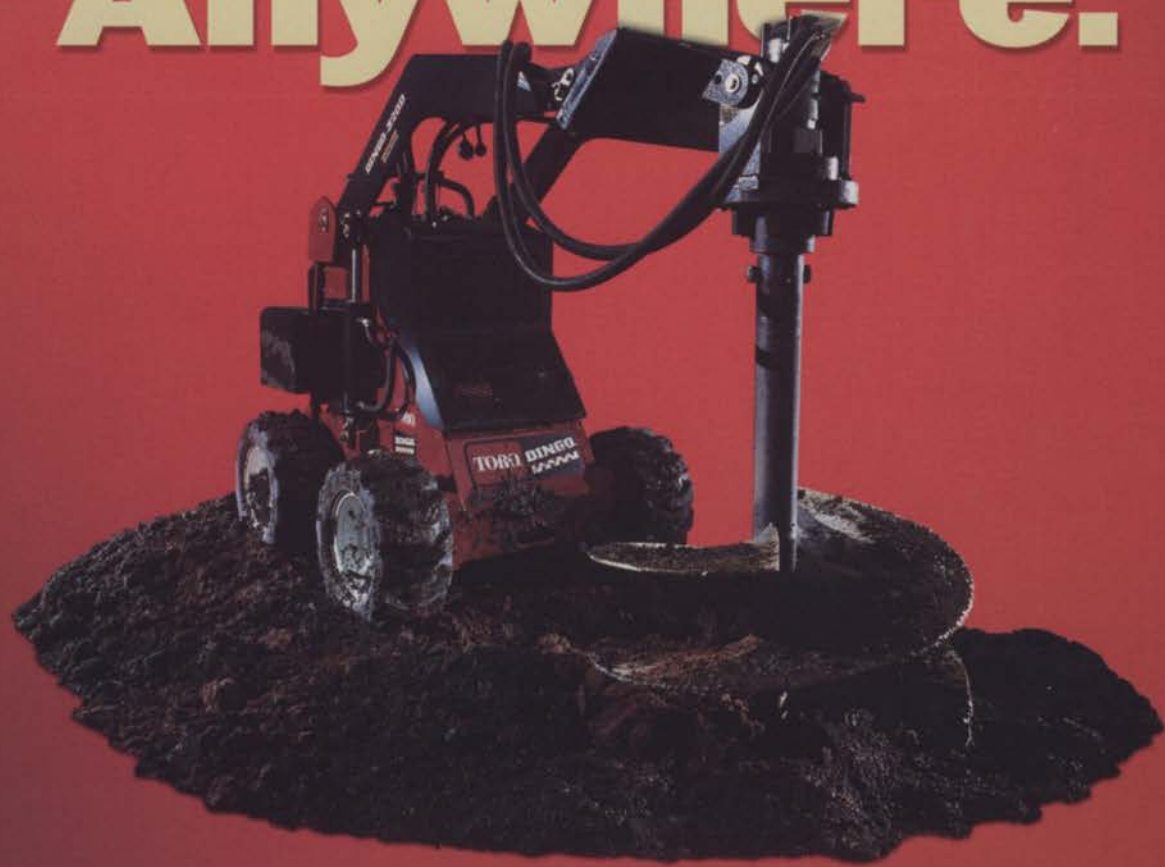
**Arbor Business
Buyers' Guide**

**Design/Build
Success Stories**

**Dale Micetic,
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**Hot
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in the
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Find this month's features plus exclusive online stories, industry databases and more at www.lawnandlandscape.com.

Extra Information Available Online

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Watch for the icon above in every issue of *Lawn & Landscape* for signals to visit our Web site for information available exclusively online. When you spot the icon with a story, go to the specified URL (Web page link) to find the supplemental information. To locate these special features, visit our homepage, click the "Magazine" link (www.lawnandlandscape.com/magazine) and either choose "More Features and Departments" for the current issue or "Back Issues" and the appropriate issue to find a list of that month's articles. Then, choose the name of the article or department to find the additional online stories.

Daily Features

Lawn & Landscape Online offers daily features on a variety of topics. Our current schedule is as follows:

Mon. - *Contractor Talk*: Profiles industry professionals and discusses common practices

Tues. - *Irrigation Issues*: Releases product updates and breaking irrigation news

Wed. - *Lawn Care Roundup*: Identifies problems and solutions for the lawn care world

Thurs. - *Landscape Issues*: Offers information to bolster landscape design, installation and maintenance skills

Fri. - *Business Management*: Gathers business advice from industry consultants and management firms

First Sunday of each month - *Plant Of The Month*: The August plant from author Barbara Ellis is *Brugmansia*, a family of South American shrubs and trees.

June Online Sweepstakes Winner

Congratulations to Chris Briscoe, National Maintenance Services Corp., West Allis, Wisc., for winning a Shindaiwa PowerBroom PB230 in the June online sweepstakes. Be sure to check www.lawnandlandscape.com/sweepstakes/ContestDetail.asp for this month's sweepstakes.

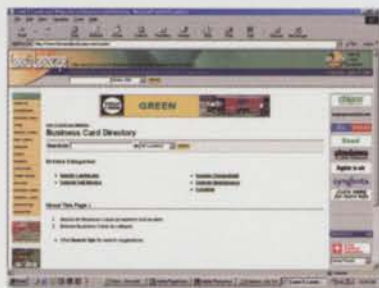
Add Your Business Card Online

Network with the rest of the industry by adding your name to the business card directory at *Lawn & Landscape Online*. All you need to do is register for a free My *Lawn & Landscape* account to

expose your name to thousands of users each month. In the registration process, you will want to include your full name, company name, address, phone number, fax number, e-mail address and type of company. Before saving your profile information, be sure to check the box that states "Add my name to the business card directory."

Register for your My *Lawn & Landscape* account and include your name in the business card directory at www.lawnandlandscape.com/my/adduser.asp.

Search the directory at www.lawnandlandscape.com/cards.



Online Contents

Check out these links to discover the tools available on *Lawn & Landscape Online* to help you stay on top of the latest industry news and grow your business:

Daily News and Features - Catch breaking industry news and daily features. www.lawnandlandscape.com

E-newsletter - Receive weekly industry news via e-mail. www.lawnandlandscape.com/my/customize_newsletter.asp

L&L Online LawnStore - Locate the best resources to help your business grow. www.lawnandlandscape.com/store

Message Boards - Discuss key issues with fellow industry professionals. www.lawnandlandscape.com/messageboard

Weekly Poll - Vote on industry-related topics and compare your answers. www.lawnandlandscape.com

Events Calendar - Locate industry events across the country. www.lawnandlandscape.com/events

Industry Research - Survey data and analysis of the industry as a whole. www.lawnandlandscape.com/research

Magazine Archives - Years of *Lawn & Landscape* magazine back issues. www.lawnandlandscape.com/magazine

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Lawn & Landscape

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Cover photo:
Eglin
Photography,
Scottsdale,
Ariz.

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ARBOR BUSINESS

Tree and shrub services continues to be a popular and profitable add-on service for lawn and landscape professionals nationwide. In this special issue, we'll discuss a wide range of subjects from macro- and micro-injection treatments to both installation and maintenance tips. **T1**



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Introducing key features of the lawn
and landscape industry's most interactive
Web site. **4**

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Water Works

I'm a little slow on the uptake at times, but even I'm starting to see just how big of an issue water consumption is becoming. The debate over how water gets used, who uses it and its cost rages intensely in California right now, which I realized during a three-day trip there last month. Billboards critical of government involvement in water regulation are common along many state highways, particularly those in the heart of the state where irrigation sustains one of the nation's largest agricultural areas.

As with other issues, however, irrigation matters outside of California as well, and the turf industry has plenty at stake. A recent *Time* magazine article said Arizona will pay residents up to \$1,000 to rip up water-consuming turf in their yard and replace it with native plants that require significantly less irrigation. A relatively new law in Nevada limits the amount of turf that can be installed on new properties. Florida's statewide water conservation committee held its first meeting in June to explore ideas for more efficient water use. Contractors in Georgia spent much of last year watching plants suffer through a seemingly endless drought. The list goes on.

If you install or maintain landscapes, then you're involved in the irrigation industry even if you don't know an irrigation controller from a garage door opener. You would be wise to spend more time thinking about how the way you design, install or care for properties influences water use. Is the landscape designed so that plants are grouped together based on their irrigation needs? Is turf minimized in areas where it's not critical or doesn't contribute to the overall appearance of the property?

If you do design, install and/or maintain irrigation systems, then you should realize the severity of this issue and take steps to improve the efficiency of the systems you have in the ground and identify strategies and technology to make sure new systems take care of the environment as well as the property. For example, while only a handful of states have laws requiring weather stations on all new irrigation installations, there is no reason not to install a wind or rain monitor on every job. I drive by a commercial shopping plaza on the way to work in the mornings, and its irrigation system is often on during the rain. That's more than just a waste of water—that's ignorance and professional neglect.

You can and should be better than that.



Bob West

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USE READER SERVICE #105

Market Trends

SEASONAL OUTLOOK

Bug Bites

This year, late summer may produce increased insect activity in some parts of the country, according to Rick Brandenburg, professor of entomology, North Carolina State University, Raleigh, N.C.

Due to sufficient rainfall, white grubs, particularly, the Oriental beetle, Japanese beetle and Masked Chafer beetle, will be widespread and not isolated to irrigated turfgrass areas, Brandenburg pointed out. "Control of larger grubs in the late summer and early fall is difficult and treatment of areas that consistently see white grub problems should not be delayed," he stressed.

Lawn care operators (LCOs) need to watch out for armyworms the rest of the summer as well, Brandenburg warned. "They have been popping up here and there and when they do, they cause serious problems," he said. "These worms generally do a good job of hiding from us when we look for them. The birds are much more successful and large numbers of birds in a turf setting are often an indicator of caterpillars."

Brandenburg recommended LCOs use soapy water to flush armyworms up out of the soil and thatch to the surface. "Place about 2 tablespoons of liquid dishwashing detergent in 2 gallons of water and slowly pour it over a 9-square-foot area," he explained. "Then observe the area carefully for about five minutes for the presence of worms."



According to a recent *Lawn & Landscape* online survey, most contractors – 46 percent – set annual marketing budgets.

In addition to creating a budget, contractors should institute strategies to ensure they're getting the most out of their marketing dollars, pointed out

John Graham, president, Graham Communications, Quincy, Mass.

Graham highlighted the following concepts, which are designed to benefit any type of landscape company:

- *Become a multi-niche marketer* – Focus on the needs of each of your market niches.
- *Save clients time* – To have their needs satisfied quickly, clients are willing to pay higher prices.
- *Give the buyer permission to take control* – Make clients feel like they are in charge of their service.
- *Portal the business* – Make a variety of services available from one location.
- *Give clients what they want* – Become an informative resource for clients.
- *Never stop recreating the company* – Recreation must be constant and move with clients' changing needs.
- *Get serious about change* – Those who are savvy enough to see new opportunities and seize them stay in business.

Market VALUE

Response	Percent of Contractors
Always sets an annual budget for marketing promotions	46%
Sometimes sets an annual budget for marketing promotions	18%
Never sets an annual budget for marketing promotions	36%

Source: www.lawnandlandscape.com/poll

LAWN & LANDSCAPE NEWS

A Prize-Winning Report

CLEVELAND - *Lawn & Landscape* and its sister publication, *Interior Business*, recently earned graphic and editorial recognition, including a national prize from the American Society of Business Publication Editors (ASBPE), Naperville, Ill., and the honor of being named the "Best Trade Magazine in Ohio" by the Press Club of Cleveland.

Contest judges shared their views on many of the winning publications, including *Lawn & Landscape*, calling it a "great looking magazine with great graphs and charts and a lot of information; very newsy and easy to navigate the whole issue," pointed out Press Club of Cleveland judges. "Good topics, well written and attractively displayed. It makes you want to read it."

ASBPE, which is an association for business and trade press, awarded *Lawn & Landscape* a second place national award for its "How We Do It" department, and regional awards, including first place for "How We Do It" and third place for the 2000 State of the Industry Report. *Interior Business* was awarded the prize for outstanding new publication and received a third place award for its "IB

(continued on page 12)



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Market Trends

(continued from page 8)

Upfront" news department.

In addition to the Best Trade Magazine in Ohio honor, the Press Club of Cleveland recognized *Lawn & Landscape* with two first place writing awards, a second place award for its 2000 State of the Industry Report and a first place award for cover design. *Interior Business*' State of the Industry Report also took home a Press Club honorable mention.

Lawn & Landscape also received awards from the Turf and Ornamental Communicators Association (TOCA), including a first place prize for its 2000 Aventis Leadership Issue. *Interior Business* won TOCA merit awards for writing and overall design.

"Our goal has always been to produce the finest business management publications for our readers," affirmed Cindy Code, group publisher, *Lawn & Landscape* Media Group. "One way we do that is by making sure we hire the most talented editors and designers. These awards are just another indication of how talented our staff is and our long-standing commitment to excellence."

Calendar of Events

TO ENSURE

that your meeting date is published, send an announcement at least 12 weeks in advance to *Lawn & Landscape* Calendar, 4012 Bridge Ave., Cleveland, OH 44113.

AUG. 15 Ohio Turfgrass Foundation Research Field Day, Columbus, Ohio. Contact: 888/683-3445

AUG. 17-19 Associated Landscape Contractors of America Design/Build Symposium, Atlanta, Georgia. Contact: 800/395-2522

AUG. 17-19 Texas Association of Nurserymen Nursery and Landscape Expo, Dallas, Texas. Contact: 512/280-5182

AUG. 19-25 Garden Centers of America International Garden Centre Congress and Tour, Westbury, N.Y. Contact: 202/789-5980

AUG 21 Cornell University Field Day, Ithaca, N.Y. Contact: 607/255-1792

AUG. 22 Michigan Turfgrass Field Day, Lansing, Mich. Contact: 517/321-1660

AUG. 24-26 Farwest Show and Ornamentals Northwest Seminars, Portland, Ore. Contact: 800/342-6401

AUG. 29-SEPT. 1 CalScape Expo, San Diego, Calif. Contact: 707/462-2276

SEPT. 9-11 ANLA Legislative Conference, Washington, D.C. Contact: 202/789-2900

SEPT. 11-12 Plant Health Care Multi-Lakes Conservation Association Camp, Walled Lake, Mich. Contact: 517/482-5530

SEPT. 12 Virginia Tech Hampton Roads Agricultural Research and Extension Center Field Day, Virginia Beach, Va. Contact: bapple@vt.edu

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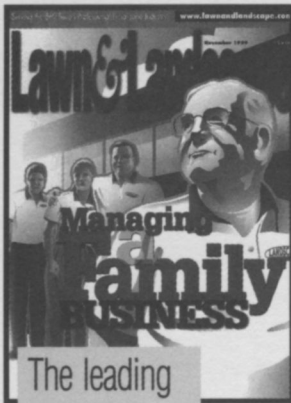
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 - 4. Ornamental Shrub & Tree Service
 - 5. Irrigation Contractor
 - 6. Landscape Architect
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- 7. Turf pesticide application
- 8. Ornamental/tree pesticide application
- 9. Turf fertilization
- 10. Ornamental/tree fertilization
- 11. Tree Pruning
- 12. Snow Removal
- 13. Interiorscape
- 14. Other _____

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5. What year was your business founded?

6. What were your company's gross revenues for 2000?

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- 2. \$50,000 to \$99,999
- 3. \$100,000 to \$199,999
- 4. \$200,000 to \$299,999
- 5. \$300,000 to \$499,999
- 6. \$500,000 to \$699,999
- 7. \$700,000 to \$999,999
- 8. \$1,000,000 to \$1,999,999
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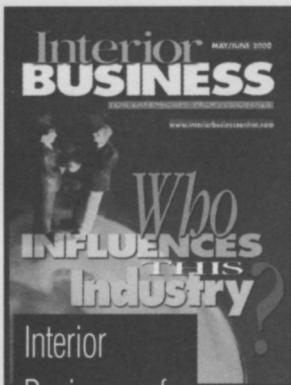
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- 4. Interior Landscape Design
- 5. In-house Interior Contractor
- 6. Grower
- 7. Other Contract Services (please describe) _____

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- 14. Others (please describe) _____

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IN THE NEWS

Bayer Expected to Buy Aventis CropScience

FRANKFURT/PARIS- Aventis and Schering announced that the negotiation process concerning the potential sale of Aventis CropScience will continue exclusively with Bayer.

Aventis said Bayer was the most promising partner "financially and socially" for CropScience, in which it owns 76 percent and Schering 24 percent. This acquisition, which would be the largest in Bayer's history, would more than double its existing business, remarked Manfred Schneider, Bayer's chairman of the board of management. "By merging the two businesses, we would create one of the world's leading companies in this industry - headquartered in Europe with global reach," he said.

While no price details were revealed, analysts said the deal could value CropScience at \$6.8 billion, positioning Bayer close to Syngenta, the current market leader in annual sales.

SEPT. 13 California State University Southwest Palm Seminar, Yorba Linda, Calif. Contact: 909/880-5977

SEPT. 13-14 Southwest Horticultural Trade Show & Conference, Tempe, Ariz. Contact: 480/966-1610

SEPT. 14-15 WALP Certified Landscape Technician Testing, Spokane, Wash. Contact: 800/833-2186

SEPT. 15 CLP Interior and Exterior Exam, Cleveland, Ohio. Contact: 800/395-2522

SEPT. 18-19 Virginia Tech and Virginia Turfgrass Council Turfgrass and Landscape Field Days, Blacksburg, Va. Contact: 540/231-5897

SEPT. 22-25 American Society of Landscape Architects Annual Meeting, Montreal, Canada. Contact: 202/898-2444

OCT. 3 Washington Landscape Trade Show & Field Day, Puyallup, Wash. Contact: 800/833-2186

OCT. 3 CLP Interior and Exterior Exam, Austin, Texas. Contact: 800/395-2522

OCT. 7-9 Lawn & Landscape Business Strategies, Phoenix. Contact: 800/456-0707

OCT. 10-11 Southern California Turfgrass Council Turfgrass Landscape and Equipment Expo, Pomona, Calif. Contact: 800/500-7282

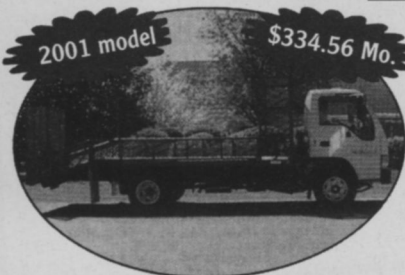
OCT. 10-11 California Association of Nurserymen Western Nursery & Garden Expo, Las Vegas, Nev. Contact: 800/748-6214

OCT. 11-13 Southern Nursery Association Southern Plant Conference, Athens, Ga. Contact: 770/953-3311.

OCT. 12-13 Plant Health Care, Inc. Plant Biology Workshop, Frogmore, S.C. Contact: 888/290-2640.

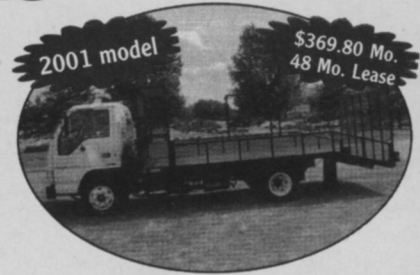


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USE READER SERVICE #12

Market Trends

Investors say the deal is logical for all parties, but some are concerned Bayer may overpay, warning that since the farm chemicals market is growing in low single-digits, the prospects for agrochemicals are unexciting. "It's a slow-growth business," said Reinhard Pfingsten, fund manager, ADIG in Frankfurt, who owns Aventis, Bayer and Schering stocks. "We don't know what synergies Bayer might extract but the figures of \$6 billion or more look expensive, making it a better deal for Aventis and Schering than Bayer."

Duesseldorf-based analyst Andreas Theisen of WestLB Panmure said acquiring CropScience was a "unique chance" for Bayer, which has been frustrated in its past attempts to build up its life sciences business. It lost a bidding war for DuPont Pharma to Bristol-Myers Squibb in June and was beaten to Cyanamid, the agrochemicals unit of American Home Products, by BASF last year.

As the deal progresses, industry watchers believe Bayer might sell its insecticide business to BASF to pre-empt anti-trust issues.

(continued on page 18)

Association NEWS

Bill Klutho of John Deere and Demie Moore of Aquatrols joined the **Evergreen Foundation** board of directors. The Foundation focuses on developing a national greenway system and fostering an appreciation for green spaces.

The **Ohio Lawn Care Association** reelected Joe Reynolds to president, Fred Schillinger to vice president and Kim Kellog to secretary/treasurer. Mark Grunkemeyer will continue his role as immediate past president. In addition, Jeff Bisker will serve as membership services and events committee chair, Joe Duncan will chair the bylaws committee and Glenn Scherzinger will chair the legislative committee.

Jim Mason was elected president of the **Iowa Nursery and Landscape Association** for 2001 at the Iowa Nursery and Landscape Association Annual Meeting and Trade Show. Mason is co-owner of Country Landscapes in Ames, Iowa.

The **Pennsylvania Turfgrass Council** awarded its Distinguished Service Award to George Hamilton, a senior lecturer of turfgrass science in the Department of Agronomy at Penn State University. The award is presented to individuals who demonstrate outstanding service to the state's turfgrass industry.

The **Ohio Turfgrass Foundation** and **The Ohio State University** held its annual OSU/OTF Turfgrass Research Field Day Aug. 15 on campus in Columbus, Ohio. Green industry professionals viewed results and learned about current research on active turfgrass and ornamental studies conducted by OSU researchers.

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 Red callouts highlight features:

- Doorknob Hanger**: A red circle pointing to a hole punch on the top of the proposal form.
- Estimate**: A red circle pointing to the 'LANDSCAPING ESTIMATE' form.
- Proposals Laser & Manual**: A red circle pointing to the 'LANDSCAPING PROPOSAL' form.
- Lawn Maintenance Invoice**: A red circle pointing to the 'LANDSCAPING WORK ORDER/INVOICE' form.
- Work Order/Invoices Laser & Manual**: A red circle pointing to the 'LANDSCAPING WORK ORDER/INVOICE' form.

 A central graphic shows a sample of the 'LANDSCAPING ESTIMATE' form with the text: 'Approximately 32 characters and spaces per line, 8 lines maximum.'

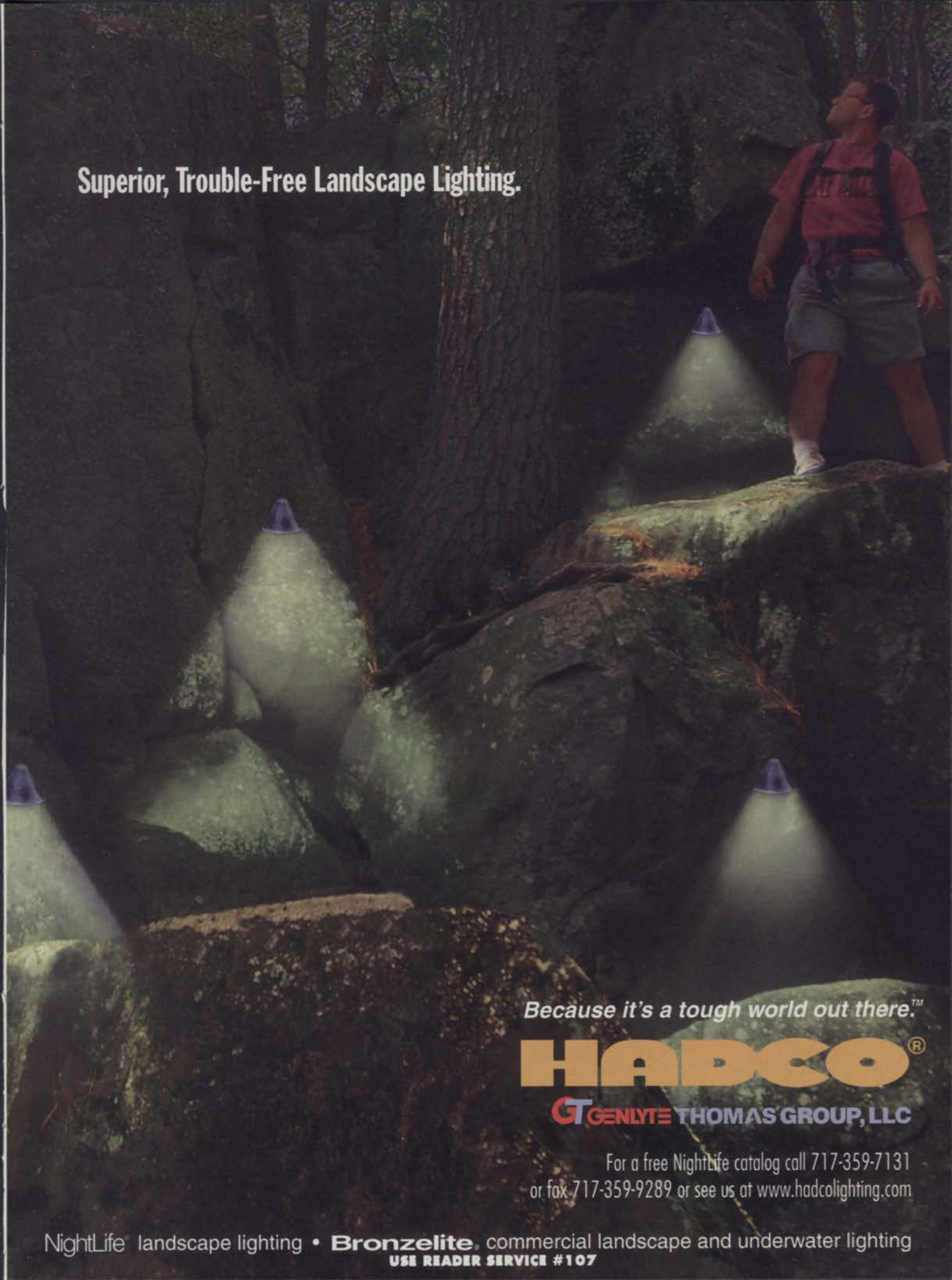


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Market Trends

(continued from page 15)

Aventis' decision, stemming from its focus on the pharmaceutical business, does not constitute any legally binding agreement between the two companies, but does move the process forward in terms of evolving purchasing dialogue and procedures.

IN THE NEWS

Syngenta, Bayer Continue Patent Dispute

BASEL, Switzerland, and LEVERKUSEN, Germany - The legal battle between Syngenta Crop Protection and Bayer over thiamethoxam patents took a significant turn when the Board of Patent Appeals and Interferences of the U.S. Patent and Trademark Office denied Bayer the right to claim priority of its initial U.S. patent, which covered thiamethoxam. Bayer has since secured a second patent, also covering thiamethoxam.

Thiamethoxam, a class of neonicotinoid

(continued on page 22)

People

ProSource One added **Jay McCord** as turf seed development manager and **Jeff Schmalz** as sales representative for the East Pennsylvania, Philadelphia and New Jersey markets. **Brad Boroughs** joined the company as turf representative in the Texas market, **David Auchter** will serve as vegetation management representative in Minnesota and **Jennifer Smith** is an ornamental sales representative in the South Central turf and ornamental market.

The Chipco Professional Products group of Aventis Environmental Science appointed **Scott Parker** to sales representative for southern Indiana, northern Kentucky and central Illinois. The company named **Joseph Grippi** sales representative for western Michigan and northern Indiana.

Bob Jones rejoined Ruppert Nurseries as director of landscape operations.

Rain Bird Corp. promoted **Ken Mills** to vice president, turf division, **Janet Reilly** to vice president, contractor division and **Karl Altergott** to director, commercial division.

William Baxter was named business manager for the turf, ornamental and pest control group at BASF. **Richard Kalik** is national accounts manager, **Derek Miller** is marketing communications manager, **Kyle Miller** is senior technical specialist and **William Strickland** is marketing manager for the group.



Kalik (top),
Grippi (bottom)



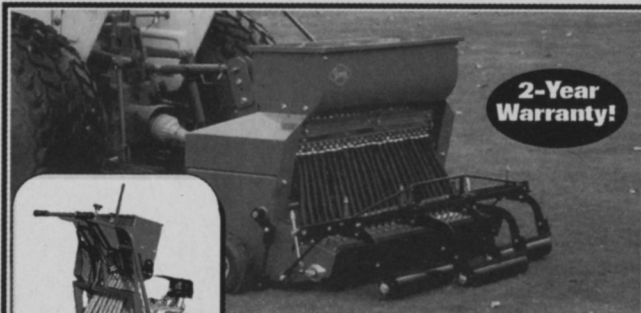
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State of Emergency – Is Your Facility Ready for the Challenge?

Lawn care operators who don't have an emergency response plan in place for their facilities should prepare one immediately, according to the Professional Lawn Care Association of America's Safety & Regulatory Manual.

Setting up this plan can be easy, as long as a few simple steps are followed.

First, select an emergency coordinator and alternates. Then work up response agreements with local emergency teams and contractors (fire department, police, doctor, hospital, clean-up contractor, etc.).

Second, evaluate the site's current emergency response system, including the condition of the existing firefighting equipment, such as extinguishers. This also involves evaluating the facility's drainage pattern and water movement offsite. The key here is to ensure that a major spill or water runoff from firefighting activities can be contained. While conducting this evaluation, check that pesticide storage areas are properly marked as well.

After performing a site evaluation, certain

documents must be prepared to aid in emergency response. These include:

- A detailed facility site plan showing the pesticide storage area, all firefighting containment equipment, shut-off valves for gas, electricity and water, a site drainage plan and evacuation routes and a preselected staging area.

- A map of the surrounding area. Mark routes of ingress/egress and also all neighbors needing special attention during a crisis (i.e. hospitals, nursing homes, schools, etc.).

- A list of emergency equipment located on site, as well as a listing of other people who can be contacted to obtain additional equipment (backhoes, barricades, extra dirt or other absorbent material) that may be needed on short notice.

- A listing of the pesticides stored on site, as well as an inventory of approximate quantities normally present. For each product on-site, a

Material Safety Data Sheet (MSDS) and associated label should be kept. These documents will provide emergency personnel with information that can be crucial to their assistance during a crisis.

After an initial emergency response plan is compiled, duplicate it and distribute copies to all individuals who are needed in an emergency, including in-house emergency coordinators and alternates and key contacts outside of the company.

All this planning is only effective if it is tested. Conduct varying drills on a regular basis to see if the plan works and to better acquaint all involved with the plan. The plan should be updated annually and distributed.

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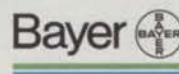
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USE READER SERVICE #101

Market Trends

(continued from page 19)

insecticides, is the active ingredient in Syngenta's agricultural seed treatment products, Adage and Helix, and also in two of Syngenta's products currently in development - Meridian for lawn and golf applications and Flagship for ornamental applications.

Bayer said its initial patent and its second patent, which was granted May 15, both cover the thiamethoxam class. Therefore, the company has maintained that Syngenta

should not be allowed to use thiamethoxam to directly compete against Bayer's imidacloprid-based product, Merit. Imidacloprid is the active ingredient in Merit, which is an insecticide used on turf and ornamentals.

The Board of Patent Appeals and Interferences decision means that all claims contained in Bayer's initial patent are invalid because the compounds claimed were different from those described. The ruling strength-

ens Syngenta Crop Protection's claim that it was the first to invent thiamethoxam, according to Syngenta Communications Manager Ken Gordon. "Now the company can move forward and market its thiamethoxam-based products," he said. "The USPTO ruling simply reinforces our position that the Bayer patent was invalid."

Although disappointed in the USPTO's ruling, Bayer believes it is still positioned favorably for a legal victory because of the second patent granted to the company, according to Bayer Spokesperson Dr. Franz Josef Placke, Leverkusen, Germany.

"The initial patent had some formal weaknesses which were due to the practices used to file patents in the United States," Placke said. "Our newest patent does not have the formal weaknesses of the prior patent. From an intellectual property point of view we are at least in as good a position as before."

Bayer AG and Syngenta Crop Protection are also involved in a separate patent infringement lawsuit over thiamethoxam filed in 1998 in the Louisiana District Court. **LL**

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VITAL STATISTICS

The Crane Fly Classifieds

Crane flies or leather jackets are common names for large mosquito-like flies and their tough-skinned larvae. Crane fly larvae live in aquatic, semiaquatic and terrestrial habitats. The European crane fly is considered a turfgrass pest in British Columbia, Nova Scotia, Washington and Oregon. Other species occur in the cool-season turf areas of North America and are generally considered nuisances more than pests.

Adult crane flies are slender-bodied, brownish-tan, long-legged, mosquito-like flies with two smoky-brown wings. They are commonly seen flying singly or in swarms around ponds, streams, meadows and golf courses at twilight. European crane fly adults emerge after sunset in southwestern British Columbia and western Washington, and can become so numerous that they cover the sides of houses overnight. On golf courses, the adults of other species become nuisances as they fly in the faces of golfers passing through swarms.

DIAGNOSIS. Larvae feed on roots and crowns below the surface and on grass blades

and stems on the surface. The European crane fly causes bare and/or sparse turf areas, which become evident from March to April.

Unless extremely numerous, other species, apparently, cause little damage. Native species also feed on decaying thatch or may be associated with turf damaged during winter months by diseases.

LIFE CYCLE & HABITS. The European crane fly seems to require mild winter temperatures, cool summers and average annual rainfall of at least 24 inches. Adult flies emerge from lawns, golf courses, pastures and roadsides from late August to mid-September. Mated females begin to lay black, oval eggs within 24 hours after emerging. In about two weeks, the eggs hatch into small, brownish maggots, which begin feeding by using their rasping mouthparts on plant roots, rhizomes and foliage. By winter, the larva has molted twice and reached the third instar. These larvae feed slowly during winter temperatures and reach the fourth instar in April and May.

The leather jackets stay underground during the day but come to the surface to feed on damp, warm nights. Damage resembling that caused by black cutworms can occur on golf course greens.



Crane fly adult on turf (above). Notice the black head and characteristic fingerlike projections around the tip of this crane fly larva's abdomen (right).

Insect I.D. features excerpts from Destructive Turf Insects by The Ohio State University entomologists Harry Niemczyk and David Shetlar. For more information on the book, call Lori Skala at 800/456-0707.



Horticulture Forum

SEASONAL OUTLOOK

Winterizing Trees & Shrubs

Have you started thinking about winterizing your trees and shrubs yet? Fall is a time of change and reorganization within a tree, and contractors can help trees survive and thrive with proper fall care.

Trees sense changing seasons in three ways: via a dormancy timer in the leaves; due to changing temperatures; and by the amount of light they get. Old leaves, buds and inner bark have a pigment that can tell the seasons. As the days shorten in fall, this pigment, called phytochrome, tells the tree to shutdown for the winter.

Trees prepare for winter through an organized process called senescence. This includes shutting down summer growth and conservation of valuable resources. A message is sent from the tissues with phytochrome, which signals senescence. Senescence brings both the fall colors and leads to renewed spring growth.

Many of the materials a tree collected during the growth season are withdrawn from soon-to-be dead leaves. The last bit of tree food is stockpiled in the living cells of the outer annual growth rings. Twigs, branches and roots become the collection sites and warehouses of materials needed for the next season. Within the tree, biological doors and windows are being closed and locked. From the moment last spring's green leaves expanded and began to make food, winter dormancy has been designed into the tree system. The process of spring and summer growth reset and started a dormancy timer that now hurries the tree preparations.

Most of the growing points in the tree are protected inside overcoats called buds. During the winter, each growing point waits for the correct message to signal a new season of growth. Only then will it be apparent

(continued on page 26)

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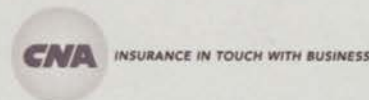
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Horticulture Forum

(continued from page 24)

whether the tree has put aside and saved enough resources to respond to the new season of growth.

Winter is a difficult time for trees. Trees must endure the drying and cold winds, food reserves must be carefully conserved for the coming needs of spring and water will be lost from the tree. Hungry animals will feed on the resting buds and twigs.

Little things can help your trees effectively survive a long winter. A few small investments now can payoff in a big way, yielding a healthy and structurally sound tree. — *Steve White* **LL**

The author is owner of Second Nature Lawn Care, Nashville, Tenn.

CARE TIPS

Winterizing Your Trees

Here are nine things you can do to winterize your tree:

1. Remove or correct structural faults and deadwood that are clearly visible. Try to make small pruning cuts that minimize the exposure of the central heartwood core on branches.
2. Properly prune branches that will hang too low when loaded with rain and snow. Foliage and branches that are in contact with soil can invite undesirable pests and problems.
3. Remove damaged and declining twigs, branches and bark. Do not leave pests food and shelter for the winter.
4. Remove any new sprouts that have grown at the tree base or along stems and branches. Pruning should conserve as many living branches as possible with only a few selective cuts.
5. Spread a thin layer of composted organic mulch to blanket the soil. Cover an area at least as large as the branch spread. Mulch is nature's way of recycling valuable materials, but be careful of pests hitching a ride.
6. Properly wrap new trees that have not developed a corky bark and could be easily damaged. Mechanical injury from the environment, including chewing and rubbing by animals, must be prevented.
7. Aerate soils if they are compacted and poorly drained. It is critical not to damage tree roots in the soil. Saturated and dense soil can suffocate roots.
8. Fertilize with all the essential elements, if they are in short supply within the soil. Be sure to go lightly with nitrogen, especially under large, mature trees and around newly planted trees.
9. Watering may be needed where soils are cool but not frozen, and there has been little precipitation. Winter droughts need treatment with water the same as summer droughts, except it is much easier to over-water in winter.

Trees are investments that require a small amount of care. For the sake of your tree's quality of life and your own, take a few minutes to winterize your tree. Wonderful springs come from well-tended winters. — *Second Nature Lawn Care*

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Company owners who want to hold on to their employees are wrapping up benefits bundles of insurance, 401(k) and savings plans, and tying on perks like vacation days, flex time and performance-based profit sharing incentives.

Finding qualified labor is a strain in today's market, and benefits programs can attract and keep employees, said Jeff Bowen, president, Images of Green, Hobe Sound, Fla. "Anything that keeps my employees is worth it to me," he noted.

COVERING INSURANCE. Covering the cost of medical, health and life insurance can burden a business' bottom line. Some small businesses cannot afford to pay 100 percent of their employees' benefits, especially with rising insurance rates, explained Chris Raimondi, Raimondi Horticultural Group, Ridgewood, N.J.

"The most difficult part is to manage the employees' needs against competitive pricing," he said. "I would love to give all the employees all of the benefits possible and then some, but that would affect our bottom line to the point where we would have to increase our prices."

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Raimondi covers 100 percent of his employees' long-term disability and group life insurance – a \$25,000 policy he offers those who work more than 30 hours per week. However, he covers only a portion of healthcare costs, which he said are a “killer, so we can't pay much for a single rate.”

In addition, employees can participate in a savings plan similar to a Roth IRA where the company deducts money after taxes and puts it into an account that can be invested in stocks, bonds and aggressive money markets. And since Raimondi's company belongs to the New Jersey Business and Industry Association, his workers realize discounts up to 20 percent on premiums for car, renters' and homeowners' insurance.

“Our program is fairly competitive and we've added these other minor perks – the discounts – and customized the benefits to do as much as we can and still afford what we have,” he noted, adding that the benefits

surpass an individual's term of employment. “Even if an employee leaves we really try to show we care, and they can continue their life insurance through the company forever. Same with the savings plan.”

Affording these benefits is a concern with escalating costs – constant changes, amendments and extra fees add up to extra dollars, Bowen added. But the value of benefits cannot be taken lightly, he reminded. He covers 100 percent of his salaried employees' dental, medical and life insurance and offers a 401(k) program, long-term disability insurance and simple IRAs, even though these benefits are becoming a stretch, he said.

“The prices increase on a normal basis, and the more this continues, the more I wonder whether or not the employees should contribute to the program,” he admitted. But Bowen knows that his employees value his full-coverage program, and he emphasizes the importance of keeping it that way. “I try

to do everything I can to keep an employee, from offering benefits to

401(k) to the bonuses to training programs.” **SHOP AROUND.** Choosing an insurance provider that offers a comprehensive physician list, prescription coverage and bearable premiums can be a challenge. “Shop around,” Raimondi advised. “The swings in fees we saw when we shopped were incredible.”

Raimondi suggested gathering information from local and national trade organizations. “There is safety in numbers,” he noted. “There is better cost efficiency by getting into larger groups.”

Bowen also comparison shopped before instituting his benefits program, however he looked at other businesses to see what they offered employees. “I didn't compare on company size, but on what I was seeing and hearing about how larger companies were keeping their employees,” he explained. “Some of the things that fell into place are because of following the example of others.”

– Kristen Hampshire

The author is Associate Editor of Lawn & Landscape magazine.

Want to know how other contractors handle a particular business challenge? Ask us, and we'll find out. Send ideas for “Minding Your Business” topics to bwest@lawnandlandscape.com or via fax at 216/961-0364.



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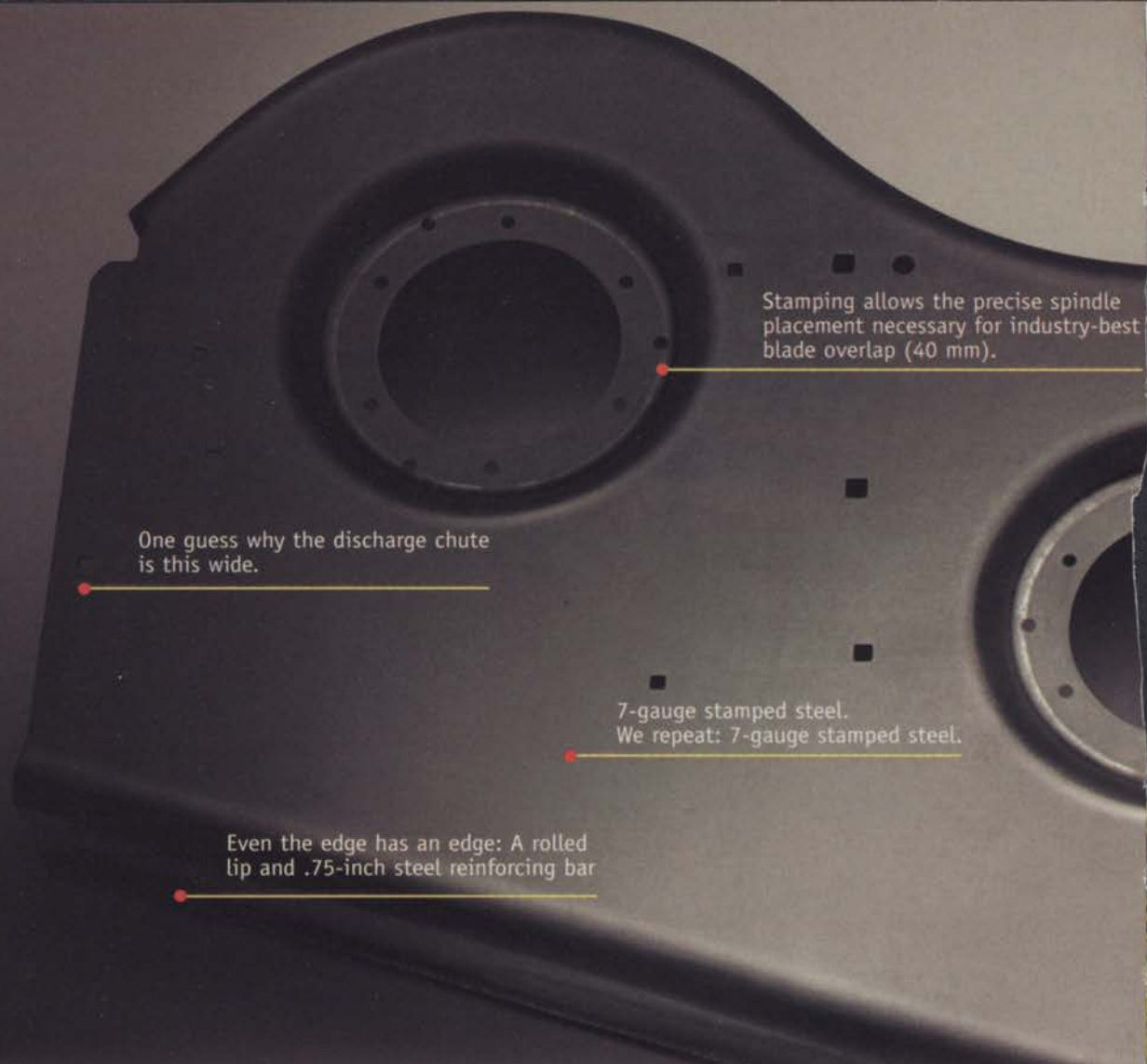


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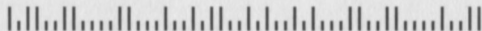
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Cover Story

by Bob West

Despite a mercurial construction market, business looks to be heating up for Terrain Systems.

A photograph of four men standing in a field of vibrant orange flowers. The man on the far left is wearing a dark polo shirt. The man in the center is also in a dark polo shirt. The man behind him is wearing a dark polo shirt and glasses. The man on the far right is wearing a light blue dress shirt and a red tie. They are all smiling and looking towards the camera. The background shows a blurred building and more flowers.

HOT Times in the DES

Don Schlander, Dan Scholl, Tom Beckley and Dale Micetic (left to right) hope to build Terrain Systems into a regional player in the Southwest. Photo: Mike Eglin

Imagine trying to comb a bald man's hair. That's what landscaping in the desert is like to people from most of the country.

The constant shortage of water for irrigation means turf anchors just a handful of properties compared to what contractors in the Northeast, Midwest or even the recently drought-stricken Sunshine State expect. Mowing and fertilizing take backseat positions to irrigation and landscape installation for a lot of Arizona companies, and Phoenix-based Terrain Systems fits that bill.

Approximately three-quarters of the company's 2000 sales came from installation work, with the remainder resulting from the company's three-year-old and growing maintenance division. And while Phoenix's population explosion for much of the last decade has fueled similar revenue growth for the company, a hiccup in the local construction market last year left the company 23 percent below its 1999 sales mark.

Fortunately, the construction market returned by the end of last year. That, combined with Terrain System's diversification and ongoing spirit of internal competition, keeps the company optimistically looking forward.

CRASH & LEARN. Dale Micetic may have gotten into the landscape industry because of his life-long interest in the environment and his entrepreneurial nature, but a

water skiing accident that left him bed ridden for a month may have been the catalyst that drove him to succeed. Micetic founded his company as an irrigation firm in the mid-1970s, which he ran as a one-man operation, but the aforementioned accident opened his eyes to a significant flaw in his organizational plans.

"I learned that the company couldn't be dependent on me to do all of the work," he related. "That's when I realized I needed to be a manager and I had to reinvent myself so I wasn't just the technician anymore."

Once he returned to work, Micetic gradually moved himself out of the field and into the office. "I hired some men to do the field work, and as they got more experience I spent less time with them," he explained. Eventually, he promoted a foreman to superintendent to manage the field personnel as part of this "step-by-step" process.

"You can't just flip a switch and go from being the foreman to being the manager overnight," Micetic pointed out. "It doesn't work that way."

His more gradual transition did work, and the company steadily grew through the 1980s and 1990s with its focus on commercial installation

Terrain Systems

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TERRAIN SYSTEMS

HEADQUARTERS: Phoenix, Ariz.

FOUNDED: 1974

SERVICES: Eighty percent of the company's revenue comes from commercial accounts, with the remaining 20 percent derived from residential customers. About 75 percent of the company's work is installation work with the remaining 25 percent being maintenance work.

2000 REVENUE: \$10.5 million

2001 PROJECTED REVENUE: \$15 million

EMPLOYEES: 225 year-round

EQUIPMENT: 25 walk-behind mowers and 6 riding mowers, 15 trimmers, 15 blowers, 15 edgers, 15 pruners, 3 chainsaws, 15 hedge trimmers, 18 maintenance vehicles.

THE COMPANY

CORE VALUES: Continual improvement, Mutual respect, Team effort and Repeat relationships.

CHALLENGES: Finding enough people to staff projects properly by actively recruiting through trade schools, community colleges and other industry related business concerns.

THE OWNER

DALE MICETIC

BACKGROUND: Earned a degree in biology. Founded Terrain Systems as a sprinkler repair company in 1974.

At a
Glance

Cover Story

projects. Today, with more than 225 full-time employees and a 2001 budget calling for sales of \$15 million, Micetic is a long way from fixing sprinklers by himself as Dale's Sprinkler Service.

Today, he defines his role primarily as a cheerleader. "I need to be the one offering encouragement, pats on the back and letting

people know I'm glad to work with them," he said. "I also see myself as more of a resource person – a consultant to our maintenance division, someone who can share experience with our estimators and someone who can make sure we're getting the right information and reports into the hands of the people who need it."

"You can't just flip a

switch and go from

being essentially the

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manager overnight."

– Dale Micetic

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STRUCTURED FOR SUCCESS. Many companies have different divisions to handle different types of work. Terrain Systems takes that idea one step further by structuring its landscape and maintenance divisions as entirely separate companies. Terrain Systems tried its hand at maintenance twice during its first two decades using the traditional divisional set up, but both of these efforts failed.

"I realized that we needed someone personable who can handle the marketing and really drive the maintenance work with our clients," Micetic related, explaining that his first foray into maintenance failed because it wasn't planned well enough, and the second venture fell short due to people problems. "I couldn't do it all. So I had to either buy a maintenance company or get the right person to oversee maintenance because every job we installed was a lost opportunity if we didn't offer maintenance work."

In addition, most of the company's approximately 100 annual installation jobs include a warranty for between 90 days and one year, which often forced Terrain Systems to subcontract this work. "Since we weren't doing the maintenance ourselves, the jobs weren't showing well, which hurt us with current customers as well as potential new customers," Micetic added.

Micetic brought on Don Schlander to head up the maintenance efforts in 1999. At the same time, he used his maintenance work to form the basis of a new company – Landscape Care, L.L.C. – which specializes in exterior maintenance.

Landscape Care focuses on commercial work because of the revenue these clients provide per stop for the crews, and about half of its clients are Terrain Systems' installation accounts while the remaining clients belong solely to Landscape Care.

Micetic learned to appreciate the recurring nature of maintenance work when the installation jobs disappeared early last year.

(continued on page 36)

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USE READER SERVICE #25

Cover Story

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(continued on page 38)

Dan Scholl understands the frustration of not being able to find quality plant material when you need it. As a landscape contractor in the Phoenix, Ariz., market, Scholl's plant problems eventually prompted him to launch his own nursery growing operation, now known as Southwest Tree Growers. "I just got tired of not being able to get good plants or the right sized plants," he explained. "We started out small, but now we've got about 10 acres of material that we either grow or buy from other growers and maintain until it goes to a job."

While Scholl was able to slowly but surely establish his nursery operation along with his landscape company, now he benefits from greater financial resources since he sold his company and the nursery to Terrain Systems so he could focus full time on the nursery operation. "Now we've got the cash behind us to grow the nursery, and that's critical because growing a tree inventory isn't cheap," he explained.

Dale Micetic, owner of Terrain Systems, explained that his company installs 75 percent of the nursery material that Southwest Tree Growers sells. "Those plants are sold to Terrain Systems at the lowest market price so that we have a real sense of the economics behind both companies, otherwise we'd have a false economy where we just shift profit from one division to another division," Micetic explained. "But having the nursery helps us ensure that we'll always have quality trees available to us." The nursery's remaining plants are sold to area contractors.


Owning a nursery with six to eight full-time employees for three years has taught Micetic about the challenges of doing so profitably, and he admits that Southwest Tree Growers just recently became profitable. "Nurseries require a lot of up-front investment, so I don't think owning a nursery makes sense for every contractor, but we think Southwest Tree Growers can be a profit center for us and provide Terrain Systems with a competitive advantage," he related.

— Bob West

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USE READER SERVICE #51

Cover Story

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"Now we have a way to straddle slow construction cycles, not to mention a lot of help paying corporate overhead," Micetic pointed out. Plus, while the installation work normally generates three times as much profit as the maintenance work, both divisions contributed equally to the company's bottom line in 2000. "Most of our maintenance cli-

ents are commercial or industrial properties because they have a consistent agenda year in and year out. They want responsiveness and service instead of just a low price."

BONUSES GALORE. With more than 200 employees in three operating areas, Micetic knows he has to motivate people throughout

the organization for the company to achieve its potential. Performance-related bonuses do this well, whether they reinforce the importance of safety training or a crew's performance vs. budget.

Motivating employees about safety perplexes many companies, so Micetic devised a bonus system that rewards his employees for their attentiveness during safety training. "The program is set up so the employees get their name entered in a drawing for each safety session they complete," he explained, pointing out that there is a monthly drawing

(continued on page 40)

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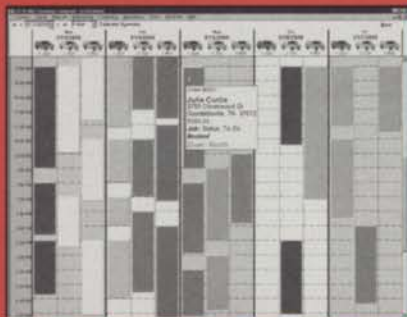
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When Dale Micetic opened the doors at Terrain Systems in 1978, he committed himself to creating a company that exemplified professionalism. "Our performance would earn a lot of people's respect, but we needed to have the right image as well to be considered on par with the other trades," he explained. Nearly 25 years later, Micetic identified four keys that will help any contractor show potential customers they mean business.

1. Clean, accurate paperwork. "With computers, there's no reason you can't have present professional-looking documents."
2. See it from the client's perspective. "Landscape contractors tend to take a defensive posture and snap back verbally when they feel criticized, but most clients want someone who will work with them."
3. Dress appropriately. "People identify with those most similar to themselves. Dress like the people you're going to meet with will dress. If you'll be in an architect's office, clean up and wear a nice shirt or even a tie. Don't come in with mud all over some old boots. But if you're meeting on a job site, wear jeans and work boots."
4. Clean your equipment. "People want to be proud of whoever is on their property. They don't want you lugging dirty, rusty machines around their building." - **Bob West**

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USE READER SERVICE #138

Cover Story

(continued from page 38)

for free televisions, barbecues tools and so forth. "Back strains and lacerations are the most common injuries we see, so whoever presents the sessions focuses on ways to avoid these problems. After each session, the employees have to immediately sign a sheet indicating they were present for the session, and the presenter may ask them a couple of questions about what we discussed."

Micetic also noted that these "Safety Minutes" help demonstrate a company's com-

Systems delivers employees' paychecks to the job sites since employees report directly to the job and rarely show up at the office, employees who don't turn in any Safety Minutes in a month have to report to the office to pick up their check.

The real savings, however, come from performance bonuses given to crews. Micetic realized he needed to offer his superintendents and foremen a reason to control labor hours once he discovered the company consistently exceeded its labor budgets for jobs by 15 to 20 percent. "The foreman can't control materials costs, but he determines whether or not a job goes over on labor," Micetic maintained. "So we pay a bonus based on how well the foreman controls the labor costs vs. what was bid."

The bonus isn't figured until the client acknowledges that the job is done, and then the foreman is paid based on a formula Micetic devised. "The superintendent for that job also gets a bonus equal to half of the

foreman's bonus. This keeps the general superintendent focused on helping his site foremen be successful. If a project foreman fails, neither of them gets a bonus," he added.

While the program has succeeded and helped the company consistently complete jobs with less labor than what was budgeted, Micetic said an additional benefit has been the foremen's increased involvement with the jobs. "Putting money in their pockets really gets them to pay attention, and we analyze each job with the foremen before and after we do the work so they see where the problems are at," he said.

Such performance bonuses have helped the company minimize its overhead throughout the year, dropping it by 3 percent. "The goal is to keep overhead low and make the adjustments at year end, based on the company's performance," he explained. ■

The author is Editor of Lawn & Landscape magazine.

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USE READER SERVICE #33

Cutting Deck Designs

by Kristen Hampshire

Durable, versatile and efficient cutting decks will polish off a mower's power.

Cutting the DECK



Image: John Deere

Choosing a mower compares to ordering a meal at a gourmet restaurant. Countless side dishes accompany rows of entrees, their extravagant names could stump a spelling bee champ, and the right side of the menu can ruin the whole flavor.

However, translating *Tarte au Pommes* is like decoding equipment vernacular – what sounds like a gobble of words is really just apple pie. Once contractors know what will fill their plates and satisfy their application needs, they can select each course – each mower component – and feed their appetite for productivity, quality and profitability.

This means remembering the meat and potatoes: the cutting deck. Without it, a dinner presentation is bland.

"The features and power of a mower are of little value without a quality cutting deck," pointed out Gilbert Pena, manager of market development, commercial mowing, John Deere Turf Care, Moline, Ill. "You might want the most power you can get, but if you don't cover your bases on quality of cut, you will not be productive because you will have too many passes, your customer will not be satisfied or you will have more maintenance and downtime."

Cutting deck construction includes more than metal, blades and pretty paint. Along with size, depth,

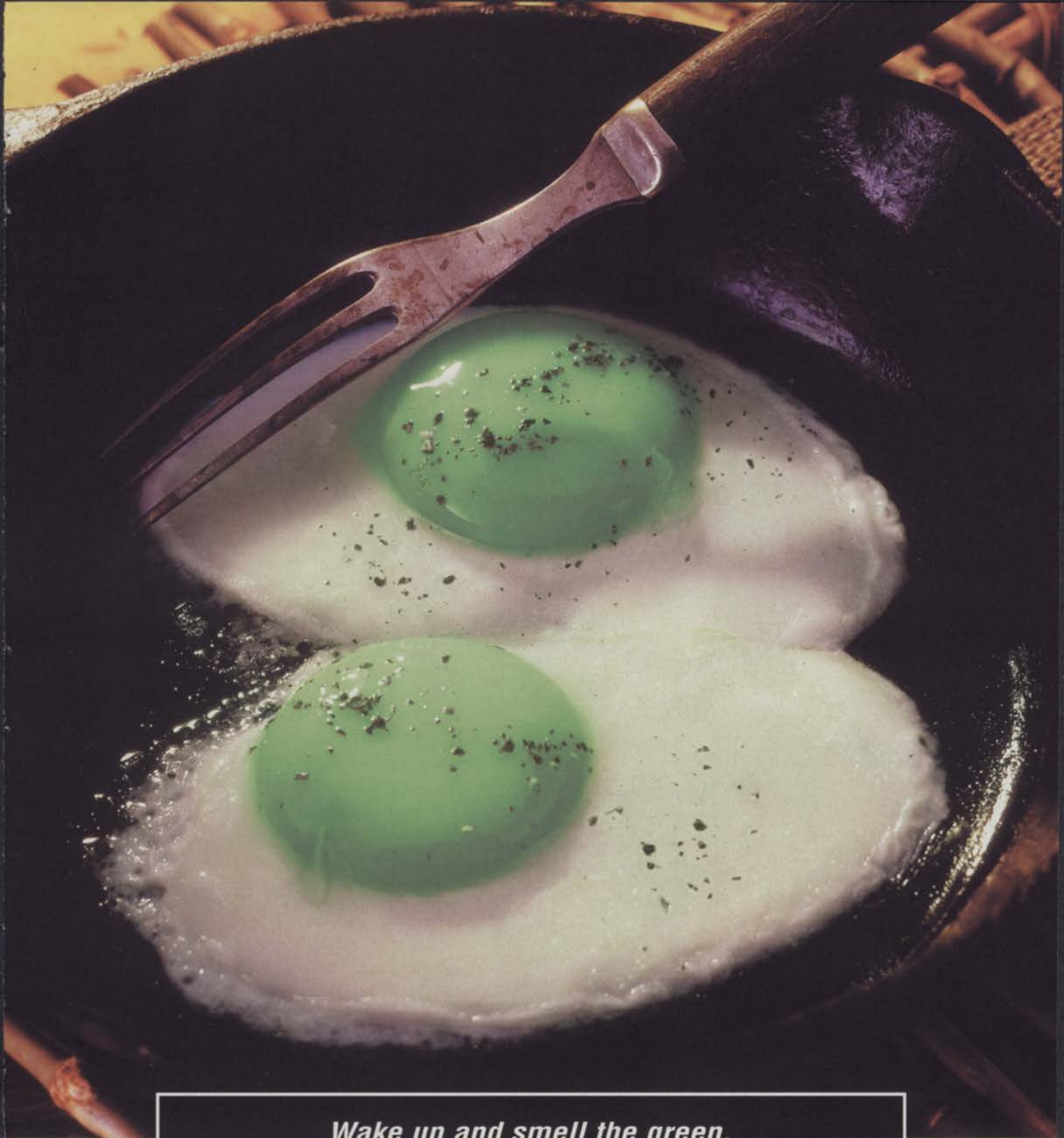
blade tip speed and maintenance ease, contractors also should consider features from floating decks to anti-scalp rollers. And the fusion of these elements to create a savory dish is, "almost more of an art than a science," described Art Evans, president, Dixie Chopper, Coatesville, Ind.

IMPECCABLE SERVICE. Efficiency yields productivity, which creates profit. Contractors want a mower that will return their investment time and again. "They want to mow one pass at 8 to 10 mph, get a quality, finished cut and leave the yard looking striped like a ball diamond with no clippings," Evans described.

However, mowing more means paying attention to four key efficiency issues, Pena noted. "If you are going to be efficient when running the machine, make sure your maintenance is easy, you can quickly adjust your cut height, and you have a good, quality cut and trimability," he listed.

First, accessibility allows for easy upkeep, Pena explained. "If maintenance is easy, there is a higher chance that it will get done on a regular schedule," he reasoned, noting that spindle and blade access are common daily service points.

(continued on page 44)



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USE READER SERVICE #52

Cutting Deck Designs

(continued from page 42)

Along those lines, the fewer tools required to care for the mower, the more likely an operator is to care for high-use parts, Pena said. In some cases, one wrench might loosen the bottom of a blade while another hand tool unscrews the top of the deck. A one-tool-fits-all mower lessens daily maintenance chores.

Dick Tegtmeier, president and chief executive officer, Encore Mfg., Beatrice, Neb., said some contractors are swaying toward cutting decks that have blade spindles without grease fittings on the bearings, which require replacement rather than constant care. These parts seldom are replaced, he added. "If you break a seal on a bearing, that's

when dirt and debris get into the bearing and your mower life is shortened," he described. "Some mowers have the bearings sealed and no grease fittings and therefore the bearings last longer."

Simplicity extends beyond maintenance to functions operators adjust on the job, such as cutting height. If changing this measurement is inconvenient, contractors might avoid catering the cutting height to soil and grass conditions, which, ultimately, can sabotage quality, Pena said. "Different customers in different seasons will require different heights of cut," he noted.

Smaller increments deliver precision, so 1/2-inch increments are preferable, Pena advised. "Smaller increments are also more responsive to customers' demands," he added.

Quality - another efficiency key - is trickier than tweaking a lever or tightening a few screws, however. If a mower doesn't cut well on the first pass, contractors can spend twice as long on a property retracing their path to produce a finished look to please clients. Trimability, or how well a mower clips hard-to-reach spots, contributes to cut quality and saves time, Pena noted.

Less time with a trimmer creates more time for careful cutting. Combine trimability with maximum tip speed, and contractors

(continued on page 46)

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Cutting Deck Do's

When examining a mower's deck for high-performance features, don't cut out these considerations.

- 7- to 10-gauge steel construction
- Reinforcement plates
- Blade tip speed
- Availability of mulching kit or grass catcher kit
- Ease of maintenance
- Deckpan deck
- Anti-scalp rollers
- Floating deck
- Airflow
- Discharge
- Belt- or shaft-powered drive
- Cutting height adjustment increments
- Sufficient horsepower
- Appropriate deck size for cutting application - **Kristen Hampshire**

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USE READER SERVICE #113

Cutting Deck Designs

(continued from page 44)

could save a bundle, Tegtmeier said. A sluggish or overzealous tip speed will not produce polished results. American National Safety Institute (ANSI) standards limit speed to 19,000 feet per minute, and the pulleys that drive the blades should be sized to reach that maximum speed, Tegtmeier explained.

"If you go too fast, you could be in jeopardy with the courts if someone gets injured," he added. "Ask the dealer: What is the blade tip speed of the mower?"

Contractors who opt for maximum tip speed are choosing efficiency, added Tom Benjamin, Mow'n Machine product manager, Woods Equipment Co., Rockford, Ill. "The higher the speed, the better the cut and the productivity," he said.

MAIN INGREDIENTS. Without the nuts and bolts, there is no *bon appetit*. Strong is the staple for cutting deck construction so parts can stand up to tough terrain and intensive

use. This strength starts with the steel.

"The thicker the gauge, the stronger and the smaller the number, the thicker the steel," Pena said. "Sometimes people are misled and think that a 13-gauge is thicker than 7-gauge, and it is the opposite."

In addition, material should be equally thick on the top and sides of the deck, Pena said. "If you have a lot of sandy soil, those blades are throwing a lot of sand along with the grass. The skirt is not as thick as the top, and the soil could blast a hole in the left side of the deck."

To enhance strength, contractors also should inspect high-impact areas, such as the bottom edge of the deck, for reinforcement, Benjamin suggested.

Just as stronger is better, deeper is duly so. "With the deepest deck and highest lift blade, the mower should do a tremendous job vacuuming and bagging," Tegtmeier noted.

Pena added that deeper decks create a tighter vacuum, the airflow trapping grass

underneath the deck and standing it up so blades can clip grass neatly and evenly. "That means in wet conditions, the mower can handle the capacity of grass because of the airflow," he explained.

Accompanying a deep deck with a wide discharge shoot disperses grass. "Imagine a 60-inch deck with three blades trying to send the grass to the right side," Pena described. "That is a wide mower deck, so the wider the discharge shoot and the better the airflow, the better the grass dispersal will be."

When examining cut necessities, contractors also need to tune into the blades – the type, quantity and arrangement, Benjamin said. Serrated cutting tip blades break up grass if the operator is mulching the property, and coated blades, such as tungsten carbide blades, can triple the wear life. Regardless of the material, changing blades and sharpening them daily enhances the cut.

(continued on page 48)

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USE READER SERVICE #98

Cutting Deck Designs

(continued from page 46)

Furthermore, overlapping blades ensure the user is not missing grass, Pena said.

Sound cutting deck construction also allows mowers to level lawns, leaving little to trim.

"If you have a deck that's warped, you can tell," Tegtmeier commented. "Picture one side of the deck being up, and if you mow around and around, it multiplies itself and compounds. You can notice it right away – it's just not a manicured lawn."

HEARTY PORTIONS. Cutting decks come in several sizes – some suitable for jobs like large expanses and others designed for squeezing into tight spaces. Adding more inches requires characteristics to prevent sloppy cutting, Pena pointed out.

"The large size has to be compensated with features that give you a quality of cut," he noted, suggesting anti-scalp rollers or floating decks, and reiterating the importance of overlapping blades. "When you get

Before investing in a mower, contractors need to consider various features – from the engine to the blades – before putting a dent in their budgets. The cutting deck is part of this package, pointed out Gilbert Pena, manager of market development for commercial mowing, John Deere Turf Care, Moline, Ill. Here, some smart shopping tips to keep in mind:

- Look for a full service dealer so repair services and acquiring replacement parts is not inconvenient.
- Check for clear, concise operator decals that are bilingual.
- Ask for a demonstration.
- Consider ease of maintenance.
- Measure trimability – how clean is the cut?
- Compare various brands for quality.
- Ask about the warranty period.
- Obtain referrals. – **Kristen Hampshire**

Purchase Picks

to uneven terrain, the likelihood of scalping or cutting down to the dirt is increased."

Floating decks extend from chains or bolts with springs on them so the mower deck can hug terrain contours, he described. Where a rigid deck, often found on smaller-sized models, can cut through the ground when climbing out of ruts or crossing berms, the floating deck will skim over turf.

In addition, fully floating decks provide contractors with optimum cut quality, Benjamin said. "If the deck just floats from side to side and you are coming out of ditches and you can't float from front to rear, you may end up scalping or leaving patches of tall grass where the deck was not able to follow the contour," he described.

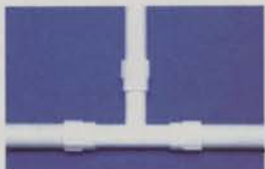
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Cutting Deck Designs

(continued from page 48)

Anti-scalp rollers also ensure minimal scalping, Benjamin added. Depending on the deck size, mowers will need rollers positioned on the left, right, front and rear. Decks larger than 50 inches also might have wheels positioned in the center of the front and rear.

Despite extra features needed to bolster the cutting capabilities of sizeable decks, contractors sway toward these models for productivity purposes, Pena said. "The wider the cut, the quicker you get done," he related.

Evans put it simply - "Yes, size matters. You need the biggest deck you can practically use with the most power you can get on it."

Fifty-, 60- and 72-inch decks rank highest in popularity among contractors, Benjamin said. However, before running with the masses when deciding on deck size, operators must consider their applications and the machine's horsepower, he said.

"Smaller decks are used in areas where there is a lot of landscape hazards or tight

places the mower needs to get into," he noted, adding that grass type also dictates deck size requirements. "In Florida, contractors go with a smaller deck because the grass grows so quickly and the type of grass just seems to tax the mower and the deck more."

No matter the turf type, contractors can't achieve a clean cut without power to move the machine. Outfitting the mower with a power pack to match the deck size ensures efficiency, Benjamin said. "You can't drive a 72-inch deck with little horsepower," he noted.

A LA CARTE. Several on-the-side options complement cutting decks, and more manufacturers are catering new designs to please their consumers' palates. "Now, people are looking for options," Tegtmeier observed.

Evans agreed that versatility creates productivity. "Mowers are kind of like a sprint car - you should be able to set them up for the task at hand," he compared. "The cutting

deck should have some flexibility in design. Buying just a mulching deck to mow grass 365 days a year will work as well as using your snowblower all year in Atlanta."

This is why attachments allow contractors to tailor equipment to turf conditions - add mulching kits to handle wet, heavy grass or hook up a floating deck kit to lessen scalping. Also, operators gain more command over the machine with extras like operator-controlled discharge chutes, which allow users to open and close a gate on the end of the deck to adjust the discharge, Evans said.

These extensions dress the full package - operators truly need a combination platter of features to achieve productivity, efficiency and quality, Evans said. What is the most important mower characteristic? "All of the above," he answered without a pause. **LL**

The author is Associate Editor of Lawn & Landscape magazine.

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USE READER SERVICE #99

FOILING Fungicide FAILURE

LCOs need to understand why fungicide applications can fall short and learn how they can minimize these performance problems to ensure desirable outcomes.

No lawn care operator (LCO) likes applying a fungicide and losing control of a disease. Fungicide applications that don't achieve the desired results are wasteful. Yet, despite valiant efforts to prevent diseases through sound cultural practices (mowing, fertilization, aeration, thatch management, etc.), fungicides still are needed to maintain high-quality turf. Strive to make every application count with the following considerations.

WHAT CAUSES UNDESIRABLE RESULTS? Quite a few problems can derail a fungicide application. Failure to carry out any of the preparatory steps properly can thwart results. Determine the culprit of fungicide failure so steps can be taken to prevent future problems. While reading through the following causes, think back to a recent fungicide fiasco. One of these – or possibly even a combination of them – could be responsible.

Incorrect Disease Identification – This is commonly overlooked because no one likes to admit to mistakes. Diseases are probably the most difficult problems to diagnose because of the size and vague nature of the indicators and the variability from one season to the next. For instance, there are at least 10 different maladies that cause identical symptoms in trees. In turf, the blighted area may look like melting out, but closer inspection may reveal drought stress, irrigation system inefficiencies or bluegrass billbugs. Buy several turf and ornamental disease identification books and place one in each company vehicle.

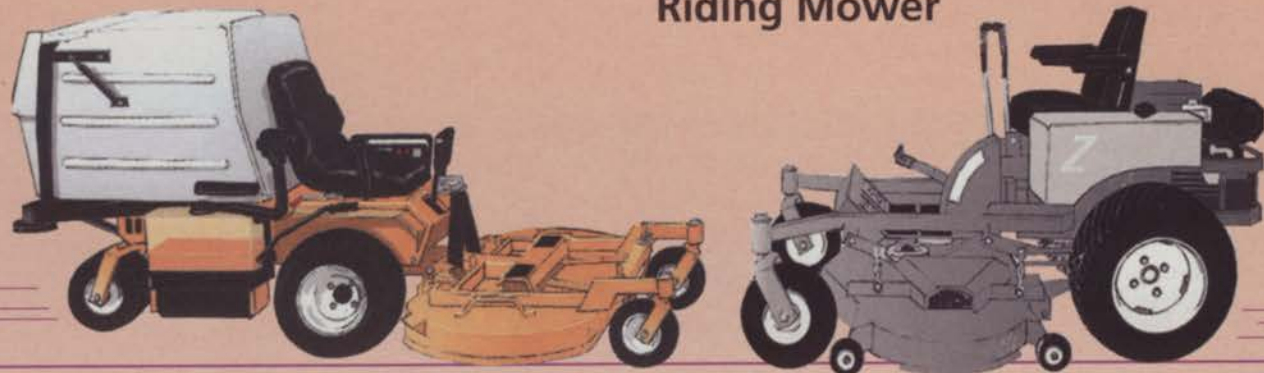
Formulation Choice – Most fungicides specify which part of the plant should be

(continued on page 54)

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Fungicide Applications

(continued from page 52)

contacted with the spray tank mixture. Leaf diseases, such as dollar spot and bipolaris leaf spot, call for thorough foliage coverage. Root and crown rot diseases, including summer patch and necrotic ring spot, are most effectively controlled with applications that move downward through thatch and protect plants' roots. As a result, liquid or water dispersible granule formulations are most effective for leaf diseases, while root and crown maladies should be treated with granular products.

Coverage Gaps – When applying fungicides, don't assume every square inch of turf has the same product application rate. Diseases on irregular and/or linear turf patches could be caused by the applicator leaving gaps in the spreader coverage or spray pattern. Reduce gaps in coverage by using spray pattern indicators that help visualize the delivery of the product (For more information, see *Spray Pattern Pointers* on page 80).

(continued on page 79)

Fungicide application timing is critical and varies for different diseases. Follow these tips to achieve accurate timing.

Summer patch – Infection occurs when soil temperatures reach 65 to 67 F. Symptom expression takes place when the turf becomes stressed in the heat of summer, usually six to eight weeks later.

Pythium blight – Infection occurs when the relative humidity and the overnight air temperature add up to 160 or 160. This is a hot and humid disease. Symptom expression occurs just a few days after infection.

Bipolaris leaf spot/melting out – This is a two-phase disease – the leaf spot stage occurs first. When purplish/brown spots are first visible, applications will help to prevent progression to the melt-out stage, which usually takes a few weeks to develop. If the leaf spot stage is overlooked, not much can be done to stop the disease. Money is best spent at that point on irrigation and renovation.

Powdery mildew – Cool, cloudy conditions often bring on an outbreak of powdery mildew in areas of shade where air movement is poor, usually in late summer or early fall. Advance treatment of these conditions is more effective than waiting until full-blown symptoms are expressed.

Dollar spot – Warm days and cool nights that produce dew and high humidity in the turf canopy are ideal conditions for dollar spot. Applications should be made at first signs of the disease, as symptoms quickly follow infection.

Brown patch – This is a hot and humid disease. Apply fungicide as conditions for brown patch become normal, especially where disease history is present.

Rust – Rust usually occurs from midsummer to mid fall following hot, dry periods with cool nights and heavy dews. – **John Fech**

Timing Tips

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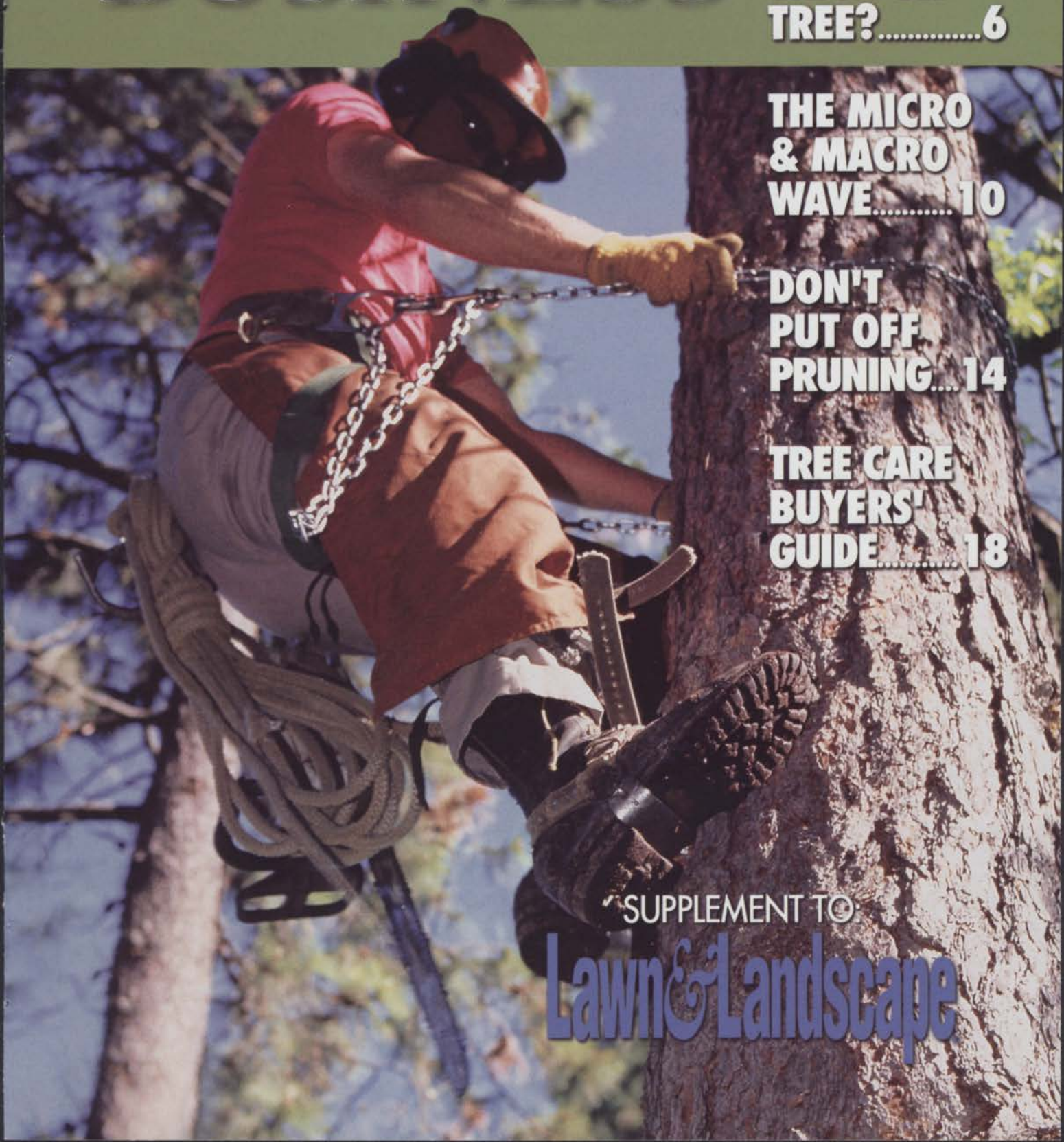
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USE READER SERVICE #150

BY NICOLE WISNIEWSKI



Wisconsin-based Lied's Landscape Design & Development invested in specialized equipment, such as light chainsaws, climbing ropes and chippers, to establish an efficient and profitable tree division. Photos: Lied's

Money CAN Grow ON TREES

LIED'S LANDSCAPE Design & Development's sales team rarely took the opportunity to sell tree services 13 years ago.

"We had to individualize each tree to price the service and it was such a lengthy process that no one did it," explained Ken Wentland, production superintendent, Lied's landscape maintenance division, Sussex, Wis., pointing out that, at this time, the company offered limited tree work and the division only drew in \$50,000 to \$100,000 annually.

Today, Lied's tree care division offers spraying, fertilization, micro and macro tree injections, cabling, bracing and full-range arborist work from pruning to removal, and generates \$250,000 in spray work and \$400,000 in arborist work each year.

To become a profitable tree care service provider, Lied's streamlined its estimating and selling process and made substantial investments in specialized equipment and people.

But contractors interested in following Lied's footsteps should proceed with caution—adding tree care services can be a gamble. Contractors need to consider startup costs, possible threats and market potential before hurling themselves at this wall of enterprise and risking a violent rebound, advised Wayne Richards, president, Cagwin & Dorward, Novato, Calif., who added tree pruning and removal two years ago. "This is not a business to be taken lightly," he said.

AT ANY COST. Many landscape contractors add tree care to their service assortment because it can be fairly profitable. In fact, many contractors boast near 33 percent profits, pointed out Dick Bare, president, Arbor-Nomics, Norcross, Ga., though he hasn't experienced these earnings yet from his 4-year-old tree division.

However, large initial investments needed to pursue the tree business make reaching this profit level challenging. A company's primary investment varies, depending on the tree service being added.

For instance, Atwood Lawn Care added tree and shrub fertilization, disease, insect and preventive weed control to its lawn care business because "it was a natural extension of the services we were offering," said Tim Doppel, president of the Sterling Heights, Mich.-based business. The pick-up truck and 200-gallon spray tank that comprised this division's start-up required a minimal investment, he said, adding that the division has experienced double-digit growth every year since its inception in 1992. "The revenue/cost ratio is much better than lawn care," Doppel said. "The trick was to manage labor costs as we grew the division."

But the costs and risks intensify for contractors add-

Contractors can profit if they plant solid roots in their tree care divisions with qualified personnel, specialized equipment and streamlined systems.



ADDING TREE SERVICES

ing other tree care services, such as arborist work. While tree work was a good complement to Cagwin & Dorward's landscape maintenance services, the initial equipment expense was high. The cost to set up one crew with a truck, chipper, hand tools and stump grinder can be \$100,000 or more, not including personnel costs, marketing materials and training programs, Richards pointed out. Wentland agreed, stating that an arborist truck can cost approximately \$25,000; a chipper can cost between \$10,000 and \$15,000; and climbing ropes, light chainsaws and other small tools can run between \$3,000 and \$5,000.

Contractors who add tree services also must address insurance costs. This is due to the higher risk associated with climbing trees and using more advanced equipment with blades like chainsaws and chipper/shredders, Bare said, adding that 25 percent of his tree division's total labor costs go to workers' compensation insurance vs. the his lawn care group's 5 to 7 percent total labor burden.

As for marketing costs, Bare is constantly searching for new tree clients because "once you cut down a client's 25 pine trees, additional work for that client is bare," he said, pointing out that his Yellow Pages budget for tree care is \$40,000 vs. zero dollars for lawn care because clients on that side of the business renew their contracts annually.

Like Bare, many contractors find adding tree services is a big risk, albeit one worth taking. Though Bare borrowed \$290,000 from his lawn care business to incorporate his tree division, he's getting closer to those sought-after profits. Last year, he realized his smallest loss-to-date of between \$10,000 and \$15,000. "This year we should make a profit," Bare said. "I stuck with it because I like the tree care business and I had always planned to get into it. If you're a smaller lawn care company with \$500,000 to \$3 million in revenue and can't do the tree work yourself, I would recommend not getting into it until you have a good couple million on the turf side of the business and have a healthy cash flow and a bank account with capital."

Bare said he has learned a great deal these past four years about how to properly add and grow a tree division. For example, he said putting down half of the total equipment costs and paying them off in two

years was a mistake. "This is too fast for any business," he said. "It hurts profits. Instead, I'd put down 20 or 25 percent and then have a five-year balance for the rest. This will free up more cash."

Despite the initial investment involved, Richards said his tree division was profitable one year after its inception. His already large landscape maintenance client base brought a backlog of tree work in a short period of time.

Wentland also boasted high tree sales, particularly during the past couple of years due to a gypsy moth problem in Wisconsin. His sales skyrocketed once he streamlined his selling process by figuring out specific time intervals and costs for each type of tree task. A typical tree care crew can generate \$1,800 per day, added Bare, who learned from consultants that tree division production numbers should be 25 to 28 percent of labor costs vs. lawn care's 15 to 18 percent.

PEOPLE POINTERS. Finding the right person to run a tree division proves the most daunting task for many contractors, particularly since they tend to be lawn care, lawn maintenance or design/build experts instead of tree care specialists. This is true for Doppel, who calls himself a "strict turfie," who doesn't know much about ornamentals. "So finding someone who knew the plants and related pests was important," he said.

At first, Doppel hired a college graduate who had a lawn care degree and prior background in ornamental maintenance. Eventually, he hired an arborist with a forestry degree to manage the division. "Having this resource available to train new hires is invaluable," he pointed out. "The person or people doing this work can make it or break it. The division requires specific expertise to be run professionally."

But while contractors search for tree care professionals, Bare warned that breaking into this "clique club" can be tough. "Tree maintenance experts, particularly climbers, are like pilots and roofers - risktakers, who can be unreliable," he explained.

To succeed at finding dependable, quali-



Due to the high risk associated with tree work, contractors must tack on additional workers' compensation insurance. Photo: Lied's

fied tree care managers, Bare suggested contractors "network like crazy," attending the important tree trade shows and meeting as many people as possible to spread the word about their companies and learn who may be in search of new opportunities.

Because contractors tend to rely heavily on tree care division managers during initial start-up, finding someone trustworthy is important. "It was not until we found the right leader and champion to head this operation that we decided to offer full tree services," Richards pointed out.

But finding the right person isn't easy. Bare, who has gone through two poor tree care managers, cautioned that the tree manager hiring pool is shark-infested. "They took advantage of me because I was unknowledgeable about the business and depended on them to get me through the establishment phases," Bare related. "People realize immediately that you're vulnerable. The initiation is unavoidable."

When looking for a tree manager, Bare said the person's business vision should mesh with the contractor's goals to ensure success. "I initially bought another guy's tree care company when I got into the business because the manager, his employees and clients were a part of the deal," he said. "The problem was that his clientele wasn't used to our higher quality services for higher prices, so it dried up."

Today, Bare has someone he trusts in the position and said he has discovered what type of person – regardless of tree experience level – can develop a tree division and train and manage its employees.

"What I learned is that the type of person who's good at a start-up isn't necessarily a good manager," he explained. "He gets bored quickly and wants to start something new again. I also couldn't rely on good salesmen to be managers because a born salesman typically won't make a good manager – he spends too much time selling and too little time managing. The perfect person should be a good manager that likes to sell in addition to managing people. He's an accomplisher and gets things done."

Richards agreed, stating that contractors need to find a leader. "Hiring an arborist is no more difficult than hiring maintenance personnel or others," he said. "Just look for someone with leadership abilities,

proper management skills and the knowledge to run a business and hire, recruit and build top-notch people."

Once contractors find a good manager to run their tree divisions, these people tend to bring in other, experienced employees, according to Wentland and Richards, who both experienced positive division growth as a result of their current employees' network of fellow arborists and tree care workers. "And the people they recommend are good because our guys won't bring in someone who's not going to do the work," Wentland enthused.

In addition to preliminary costs, contractors who offer tree services may have to make continual investments to ensure success and retain key employees once they find them. For instance, a skilled arborist or high-end foreman will earn between 10 and 20 percent more than an average landscape foreman, Wentland said. Keeping tree em-

ployees educated and challenged also can add up. A certification test can cost \$100 per person, and national conference registration can cost \$350 per person before considering travel costs.

Without the right manager, training also is a discouraging task. "Training lawn care personnel to look off the lawn for ornamental problems and properly identify them is an ongoing challenge," Doppel related.

Cagwin & Dorward's training program focuses on safety and customer relations. "Compared to other landscape operations, tree care is more dangerous, so safe practices are critical," Richards said. "If you don't have a passion for tree care or don't have someone in the organization who does and who you can trust, then you are a lot better off subcontracting this work." **AB**

The author is Managing Editor of Lawn & Landscape magazine.

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BY NICOLE WISNIEWSKI

Trick OR Tree?

A healthy, hardy tree cannot be pulled out of a magician's hat. Contractors can establish long-lasting trees on clients' properties only by using proper planting techniques.

THEY ENDURE HOURS of children climbing into their upper branches to hide or build secret forts. They stand tall through gusty windstorms and downpours. They serve as life-long memorials and their permanence symbolizes heroic and historic efforts.

Trees have a reputation.

In the eyes of those who admire the dancing leaves on their branches or rest beneath their shade, trees bear a cathedral-like stature and endurance.

But despite their reputation, there is one moment when trees are the underdog and can be defeated: during establishment. "Planting is one of the most important cultural practices that determines the success or failure of trees," explained Davis Sydnor, professor of horticulture, The Ohio State University, Columbus, Ohio. "To get the most satisfactory performance from trees, attention should be given to planting details."

Trees must be planted at the right depth and receive the correct amount of water to flourish. Planting too deeply, using excessive mulch and forgetting to check for adequate soil drainage are just a few of the common establishment errors that can be detrimental to a tree's future health, causing decay, promoting root rot and fungus, and weakening or even killing the tree. And, often, no amount of proper maintenance can correct a faulty planting job.

"Using quality plants and following good cultural practices, such as watering, pruning and fertilizing, will not compensate for poor planting techniques or poor plant selection," Sydnor confirmed. "As the emphasis on and need for urban plantings increases, so does the need for a better understanding of the stresses trees encounter."

PLANTING SEASON. After selecting a healthy tree (see sidebar on page T7) and working with the client to choose a proper location for that tree, a contractor can determine an adequate planting time.

In Southern California, Ron Matranga, residential division manager, Atlas Environmental Services, Spring Valley, Calif., said the key to proper timing is to consider tree type, regional weather conditions and the tree's possible reactions to that area's specific climate.

Typically, the best time for tree planting is in the fall after temperatures have cooled

The proper depth of mulch, no more than 4 inches, is spread around a tree trunk after planting. The tree's root flare should not be covered during this procedure. Photo: William Welch



A MATTER OF CHOICE

SELECTING THE RIGHT TREE can be just as important as planting it properly. When selecting a tree, keep in mind the following tips from Davis Sydnor, professor of horticulture, Ohio State University, Columbus, Ohio, and Kevin Peters, district manager for the Alpine division of the Care of Trees, New England area.

- Locate the root flare, which should be immediately beneath the soil of the tree. This can determine whether or not the tree was planted too deep or has girdling roots.
- Make sure there are no scars or damages along the trunk of the tree.
- Check that the rootball is firm. It shouldn't feel loose or wiggle.
- Examine the tree's branching structure and make sure it looks strong.
- Identify a tree that will fit appropriately at its mature height and structure in the space in which it will be planted.
- Consider tree hardiness, maintenance requirements, availability, cleanliness, root system, growth rate and type (deciduous or evergreen).

— Nicole Wisniewski

Tree species also dictate whether spring or fall is more suitable for planting, added Kevin Peters, district manager for the Alpine division of the Care of Trees, New England area. For instance, birch and maple trees have a better chance of recovery when planted in the spring, while many evergreens are hardy and can be planted in the fall, Peters offered.

THE DIRT. Contractors' opinions vary on the value of soil amendments. "Many contractors feel that soil should be amended and others feel they should use the existing soil conditions so the tree learns to grow into that environment," Peters explained.

Matranga suggested contractors use existing soil unless 50 percent or more of it is in poor condition for planting, such as on a construction site where much of the high-quality loam or topsoil has been removed or compacted by heavy machinery. "If you create a different soil condition in the hole, the tree roots will refuse to penetrate the native soil and establish themselves," he said.

Even more important than soil amendment is soil excavation. Digging the correct hole size is a crucial and commonly flawed tree planting step.

With balled-and-burlapped or container

trees, measure the height and diameter of the rootball, Sydnor said. The hole should be two to three inches shallower than the rootball or container and 2 to 3 times as wide, Matranga suggested, pointing out that if the hole is too deep, the tree will settle further into the soil and the root flare won't receive the oxygen it needs, increasing the amount of water building up around the tree base and making the tree more prone to root rot.

"Planting the tree too deep will cause soil to hold moisture against the bark, thus softening it and presenting an opportunity for insects and diseases to enter," Harris added, using a swimming analogy to explain why trees should not be planted too low. "Everybody loves to swim, but it's very important that certain points on your body are allowed to come up above the surface."

The planting hole is wider than it is deep so tree roots have loose, penetrable material to grow into horizontally, which is vital for the tree to establish itself in its new environment, Matranga specified.

Though high planting is less severe than low planting, it should still be avoided, said David Chinery, Cornell Cooperative Extension of Westchester County, N.Y. "Plants are often planted high because the



down and before the soil freezes. "Spring growth is stressful – the tree uses a lot of energy to put out leaves and tissue," Matranga said. "Planting in fall allows the tree a chance to acclimate to the site before the rush of spring growth hits."

Fall also is a particularly favorable planting time in southern states. For instance, hot, dry summers in Austin, Texas, force Scott Harris, urban orchard coordinator, TreeFolks, to plant trees from November until March so they can get established before temperatures increase. "Trees have a much higher survival rate when they are planted during the dormant season," he said, adding that these cooler months also are easier on his employees.

INSTALLATION TIPS

area is a wet site, the soil is of poor quality or the contractor wants the plant to appear bigger and taller," he indicated. "An unmulched, uncovered, high rootball will dry out quickly and lead to drought stress."

ROOT DOWN. Ready-to-plant trees come in three forms: bare-root, container and balled-and-burlapped. Each tree style requires several specific considerations.

In Southern California, Matranga said he only uses container trees. A contractor should never lift a container tree by the trunk, Matranga stressed. Instead, a 15-gallon container, for example, should be laid on its side so a contractor can hit it softly with a hammer to free the rootball.

Because container trees tend to have slight circling or girdling roots, scoring the rootball sides at three or four points around the ball with a sharp knife is important. "Studies on girdled and container-bound roots show

that roots will continue circling because they were grown to do that," he explained, pointing out that scoring should be done with a sharp instrument in swift, vertical motions as not to rip or tear the roots. "Cutting the circling roots prevents them from strangling the tree to death later on."

Since container tree roots are protected, they are less vulnerable to damage during transport. But contractors should keep bare-root and balled-and-burlapped trees' exposed roots moist prior to planting. These trees can dry out quickly if they are sitting in a storage yard and are not watered frequently.

For balled-and-burlapped tree planting success, rest the rootball in the hole's center and reshape the soil at the bottom so the tree stands straight, Harris instructed. "After adjusting the tree, pull the burlap and any other material away from the sides and top of the rootball," he continued. "Don't try to get the burlap material out of the hole

— just let it rest beneath the rootball. Exposing the sides of the rootball to the soil will enable the tree's roots to grow in the most important directions. Also, do not adjust or lift the tree after its ball has been unwrapped, or the rootball can be damaged."

To avoid tree strangulation, remove any twine or wire used to tie the burlap around the rootball or trunk of the plant, Chinery said. "Twine rotting should not be relied upon to prevent constriction," he warned. "A surprisingly large number of trees are killed in this way."

Bare-root trees require a slightly different planting technique than container or balled-and-burlapped trees. A wide hole is still necessary, but soil should be mounded up at the bottom of the hole and the tree roots should be laid across that mound, Peters explained. "This typically is a less expensive process," he said, pointing out

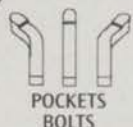
(continued on page 23)



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USE READER SERVICE #151

MICRO VERSUS MACRO

BY NICOLE WISNIEWSKI

Tree injection treatments offer contractors an alternative for managing many pesky insects and diseases.

TREES ARE a lot like people.

Just as blood flows through human arteries carrying oxygen, a substance called xylem moves through trees' vascular vessels circulating sap.

Tree and human circulatory systems also bear similarities when it comes to treating infection or illness. As intravenous injections are administered to people for the purpose of conquering disease and promoting recovery, microinjection and macroinjection treatments can be introduced into trees to combat insects and diseases or add micronutrients.

Tree injection treatments provide technicians with additional options when treating sick or malnourished trees. They also may be safer on the environment and the operator administering the treatment because the potential for drift and product exposure is reduced, pointed out Nate Dodds, president, J.J. Mauget, Arcadia, Calif.

But to choose the right treatment method and to ensure that it works properly, technicians must understand how these treatments work and learn how to accurately dispense them.

ARSENIC & OLD LACE. Though tree injection treatments seem to be growing in popularity today as suppliers develop pesticides available in injection formulations or produce new methods of infusing products into trees, they are actually mature procedures, dating back to the 16th century. In fact, Leonardo da Vinci was the first person to utilize a tree's veins to transport chemicals. "Da Vinci injected arsenic into the apple tree in his front yard to discourage passersby from stealing its fruit," Dodds explained.

Despite the fact that they are called "injection" treatments, the process in trees is more like an IV, where a balanced, slow-dripping bag of glucose solution, for instance, is introduced into a person's circulatory system, pointed out Roger Webb, president, Tree Tech, Morriston, Fla. "Tree injection isn't like in the doctor's office where he is forcing a material into your body



THE Micro Macro



Jerry Naiser microinjects fertilizer into a cedar elm.

Photo: Keith Brown, Arbor Consulting.

Below, a large elm is being macroinfused.

Photo: Rainbow Treecare Scientific Advancements



MICRO & MACRO.

The size of the holes used to administer products in trees is the main factor that distinguishes microinjection from macroinjection. Hole size is typically at or below 1/4 inch for microinjection

in a short period of time," he explained. "It is more like an infusion process where the speed of evacuation isn't the primary concern. It's about the proper access of fluid into the tree's circulatory system. The tree will then uptake the product, and this can occur with or without pressure."

Injection treatments control a wide range of vascular-feeding insects. "Even bugs sucking on a leaf are tapping into a tree's sap stream and can be controlled this way," Dodds said.

These treatments also can manage diseases that exist in the water-connecting tissue of a tree, added Tom Prosser, president, Rainbow Treecare Scientific Advancements, St. Louis Park, Minn., stating that macroinjection focuses on three major tree diseases: Dutch elm disease, oak wilt and

sycamore anthracnose. "Although sycamore anthracnose shows symptoms on tree leaves, 95 percent of its lifecycle is in tree twigs and stems, which is why injection treatments can control it."

Certain products that are sprayed, but risk breakdown due to sun and wind exposure, also can be injected. As long as a tree's vascular system functions properly, a product's residual increases due to this lack of outside exposure, commented Chip Doolittle, president, ArborSystems, Omaha, Neb. "This could be a 10-day outside residual vs. a 12-month residual with injection treatments," he said.

Contractors who use injection treatments also claim that less product is misplaced. "You're utilizing a tree's own transport system for distribution," remarked Jerry Naiser, president, Arbor Consulting, dba Tree Masters, Austin, Texas. "Since each injection point is independent, there is less chance for waste due to leakage. No air, soil or groundwater contamination occurs. No overspray, no drift, no spill, no waste."

But while there are benefits to using

injection treatments, Rex Bastian, vice president of field education, Hendrickson - The Care of Trees, Wheeling, Ill., stressed that no one product or application method can work every time, particularly with trees. "It all depends on the tree," he said. "A lot of people want to make treating insects and diseases on trees simple, but it's not. You have to figure out what works best based on the specific tree and the specific problem. As contractors, we have to be familiar with all techniques and know their advantages and disadvantages. And we have to use treatments in a responsible manner."

tion and at or slightly above 1/4 inch for macroinjection, according to Bastian, who uses both methods in his tree care program.

In microinjection, each injection point around the tree is independent and in macroinjection, each injection point shares a common product supply line, pointed out Naiser, who also uses both treatments, but prefers microinjection because in macroinjection "the applicator is responsible for mixing products and making sure that no leaks develop," he said. "With macro, it is possible to lose all product on the ground, if you are not carefully monitoring the tree."

But macroinjection involves the distribution of more product into the tree - 30 to 60 gallons, Prosser explained, while microinjection uses anywhere from 2 to 14 milliliters of product, Webb said.

There is some debate among contractors about the amount of product injected into a tree through injection and what it means in terms of length of disease and insect control. Jim Rediker, owner, Scenic Hills Nursery, Kerrville, Texas, who specializes in oak wilt treatment and prefers

ave

MICRO VERSUS MACRO

macroinjection, said more product means better distribution throughout the tree, because "how high up into the tree can that small amount of chemical [in microinjection] reach?"

Bastian, on the other hand, said length of control isn't a result of the delivery approach. Instead of being a function of the type of treatment or amount of product used, he said product residual is a result of the chemistry employed. "Some materials can be injected and give a longer period of control than others, regardless of whether they are administered through micro or macroinjection," he said.

In terms of cost, most contractors agree that macroinjection can cost less than microinjection, but more time is needed to administer the product. A complete set of reusable equipment, including 75 tees, a pump and tubing, can cost approximately \$200. And treating an average tree can cost

Trees take in microinjection products better on sunny spring mornings, according to many users. Photo:

Jerry Naiser,
Arbor Consulting



between \$50 to \$130, depending on the process and what disease is being controlled, Prosser said.

To treat an 8-inch diameter tree for insect control with microinjection, the pesticide can cost between \$8 to \$12, and an injection gun can range from \$100 to \$500, Doolittle said. Dodds figured it differently, stating that the cost of microinjection treatments can be anywhere from \$1.25 to \$2 per a tree's diameter inch, plus the cost of labor. While microinjection costs more, "a typical 20-inch diameter tree taking 10 capsules can be treated inside of five minutes," Dodd

said, pointing out time saved on the job.

"Although microinjection packaging may cost a little more, money is saved on labor and equipment because it does not require the intense monitoring that macroinjection does," Naiser related.

TIPS OF THE TRADE. Many of the hot and cold feelings contractors have about either macro or microinjection may derive from mistakes made during application. Webb said the most common mistake is drilling too deep or not drilling deep enough into the tree. "The first movement you feel is the drill torque

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down at the outer xylem," Webb explained. "It will feel like a different substance. Once you hit this change in drill torque, withdraw from the tree and check to see how far the wood fibers have come up through the spirals of the drill bit. This is where the waste wood is forced into and up behind the tip of the drill bit. If the waste wood has come up the drill bit channel a ¼ inch, then stop. If it's less, go a little deeper. It's a technique that is developed through experience."

Poor timing also can negatively impact injection treatments. Most contractors and suppliers recommend injection treatments in early spring just after bud break when a tree becomes more active. Also, Naiser said the best uptake of product will occur in the morning on sunny days.

"We don't recommend injections in hot climates after 11 a.m. because a tree is experiencing maximum water flow and floods of resin will bleed out of the injection holes,"

Dodds warned. "Contractors should stop doing injections before the heat of the day."

Also, burn risk increases with some products when applied in hot climates, pointed out John Fishbach, Medi-Ject Tree Injection System, Lincoln, Neb. "The transpiration out of leaves is so great in the heat that sometimes they will suck in the solution so fast that one or two branches will burn," he said. "There is less risk of burn closer to fall. Even though the tree may be shutting down, injections at this time ensure that iron and zinc will be there for the tree next spring."

Contractors and suppliers also recommend the following injection tips:

- Heavy, thick or loose outer bark can be carefully shaved to form a smoother injection point and to ensure that the drill penetrates to the xylem.
- A slight downward angle hole is recommended for complete product drainage.

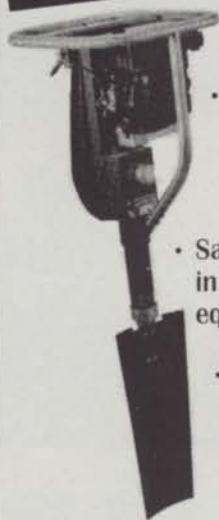
- Use a new drill bit after every 40 units. A sharp bit will cut cleaner, with no heat, thereby giving maximum product uptake.

- Disinfect the drill bit between trees with Lysol or a 20 percent solution of bleach, then rinse the bit with clean water.

Humans tend to put trees under a lot of stress, so treating them correctly is crucial, Dodds said. Contractors should learn about these treatments and add those they become comfortable using to their insect and disease control arsenal, Bastian said. "There isn't one perfect system for treating trees," he explained. "As long as you become educated on all your viable choices and can present this information and all the risks and benefits to your clients, then they can make a final decision on the care of their trees that they are comfortable with." **AB**

The author is managing editor of Lawn & Landscape magazine.

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TREE PRUNING

BY JOHN BALL

A healthy, enduring tree cannot be pulled out of a magician's hat. Contractors can establish long-lasting trees on clients' properties only by using proper planting techniques.

TREE CARE AND CAR CARE have a lot in common.

You can drive a modern car for a long time – neglecting oil changes and forgetting to replace filters and belts – and get away with it. But eventually the time will come when repairs to a damaged engine or transmission will greatly exceed the cost of the routine maintenance you neglected.

Tree care is the same. You can plant a tree and do nothing. If it lives (and surprisingly, many do despite the neglect), years later you might find that the tree may not flower as well as expected, its form is poor, or it drops limbs on buildings or people. As with cars, a little routine maintenance can eliminate future big bills.

TRAINING YOUNG TREES. Pruning is the most neglected area of tree care. Most people ignore the pruning needs of young trees and instead wait until the tree reaches maturity before beginning to prune.

If the tree is trained properly, there is less need to prune at maturity and less possibility of structural defects that can result in tree failure. Training should be performed within the first 10 years after planting. This is the best time to establish the proper spacing and arrangement of the scaffold limbs, which are the lower, permanent, major limbs directly attached to the trunk. Thinning out these limbs while they are small is much less harmful to the tree and minimizes decay formation.

The branches located along the lower 5 or 6 feet of a deciduous tree's trunk are generally referred to as temporary branches. These branches are eventually removed to provide clearance and improve visibility as the tree becomes taller, but they should be retained for the first three to five years after planting because the food they contribute is critical to lower trunk diameter growth. The lower branches also provide young bark protection against sunscald and splitting.

When removing the lower limbs (crown raising), do not be too quick to "limb up" the tree. At least one-half of the crown's foliage should originate from branches on the lower two-thirds of the tree.

Of course, there is no rule that says these lower branches have to be removed. Whenever possible, leave these branches on the tree. Trees, such as lindens, de-

The number of live branches removed from a tree should decrease as the tree matures.

Photo: Lied's Landscape Design & Development



Don't PUT OFF Pruning

velop a very pleasing oval-shaped form if allowed to retain their lower branches.

Most of young trees' pruning needs are referred to as thinning. Thinning is the selective removal of branches throughout the canopy to improve tree structure. The first branches to evaluate for thinning are the scaffold limbs—those limbs from 5 to 15 feet that will become the lower permanent limbs of the tree.

Scaffold limbs must be properly selected to maintain good form. One of the most persistent tree problems is the development of two main leaders rather than a single leader. This problem is most common with green ash, but it also occurs with maples and lindens. These double leaders, also referred to as codominant stems, are weakly attached and prone to splitting or breaking. Avoid the formation of codominant stems by eliminating one of the two upright stems as soon as they are noticed, preferably when they are less than 1 inch in diameter.

Once codominant stems reach several inches in diameter, subordinate pruning should be considered. This involves shortening one of the two stems so that it is subordinate to the other rather than eliminating one of the stems. However, avoid removing more than one-fourth of the foliage from the subordinated stem. If the codominant stems are not detected until they are mature, attach tree support systems rather than removing one of the stems.

Branches should be properly spaced along the trunk, and this selection should also take place within five years of planting. As the tree matures, branches increase in diameter. If they are too tightly spaced, they may interfere with one another's development. Close branching may also result in bark splits or cracking. The spacing for scaffold branches for trees with a mature height of less than 30

feet is approximately 6 to 12 inches. Trees with an anticipated mature height greater than 30 feet should have a branch separation of approximately 12 to 18 inches.

There are several other types of branches that should be watched carefully. Many young trees will have sprouts coming up around the base of the tree. These sprouts come from the roots or root flares and are referred to as suckers. Many ornamental trees are cultivars that are grafted or budded onto a seedling-grown rootstock. Thus, the shoots that come from the roots don't have the same ornamental qualities as the cultivar. For example, a crabapple cultivar may have showy red flowers and small, hard, yellow fruit while the suckers may have small, white flowers and large, soft, red fruit.

The other branches to thin are watersprouts. These are rapidly growing upright shoots that form along the trunk or scaffold branches and are most common on crabapples and other small flowering trees. Watersprouts should not be confused with spurs. Spurs are slow-growing shoots that form along the trunk and branches of some trees, most notably crabapples. These can be separated from watersprouts by their numerous leaf scars that form on the short shoots. Spurs form flowers and fruit for many ornamental trees.

PRUNING MATURE TREES. As a tree matures, the amount of live branches removed should decrease. Mature trees establish a balance between their root system and the canopy branches. Drastically altering this balance by either removing roots or branches may stress the tree. If the tree has been properly trained during the first 10 years, there should be little need for major pruning beyond removing branches as they naturally decline and die.

Oftentimes, people unnecessarily thin out mature tree canopies (called crown cleaning) in the belief that doing so will benefit the tree by permitting more sunlight to reach the interior leaves. However, for most mature trees the interior leaves have adapted to the shaded environment

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TREE PRUNING

and are often stressed by the sudden exposure to full sunlight. The canopies of mature trees have also evolved so that the individual branches provide mutual protection for wind and ice loads. Excessively thinning the canopies can leave the remaining branches more susceptible to breakage. Unless the branches are structurally unsound

or additional clearance from buildings or other structures is needed, mature tree pruning should be limited to removing dead branches.

Pruning cuts used on mature trees should always be thinning cuts, removing a branch at its point of origin (or when reducing the height of a tree, a lateral one-half the diameter) rather than heading cuts.

Heading cuts involve cutting to a stub, a practice that results in extensive decay.

Probably the most common form of heading practiced on mature trees is topping. This occurs when the entire top of the tree is pruned back to a specific height. Topping results in rapid formation of weakly attached branches, extensive branch decay and a decline in the root system. While trees rarely immediately die from this harsh treatment, it can result in decline and death over time. Topping is not an acceptable practice.

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TIMING MATTERS. Pruning dead and dying branches can be done at any time. However, there are specific time periods for the pruning live branches. The ideal time to do this is during the late dormant season—about a month or two prior to bud-break. During the late dormant period there are minimal pests present and the pruning wounds quickly begin to close with the start of the growing season.

However, light pruning or removing a few small branches—particularly those less than 2 inches in diameter—can be performed at any time of the year.

Heavy pruning should be avoided when the tree's leaves are first expanding in the spring and when the leaves are falling in autumn. In addition, the removal of large branches (more than 8 inches in diameter) should be avoided during autumn. Many of the decay fungi are releasing spores during this time period and there is a greater risk of increasing decay.

And be aware that pruning birch, maples and walnuts during the late dormant season will usually result in "bleeding." This refers to the flow of sap from the pruning wounds during warm spring days. While the sap may be unsightly and attract wasps and other insects, it won't harm the tree.

Suckers and watersprouts should not be pruned during the dormant season. Removing them during this time usually results in excessive production the following spring. Instead, they should be thinned in early summer just after the tree has completed its spring growth. **AB**

The author is associate professor, department of horticulture, forestry, landscape and parks, South Dakota State University, Brookings, S.D.

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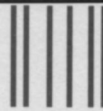
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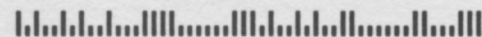
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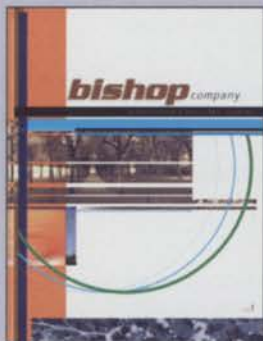
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USE READER SERVICE #164

(continued from page 8)

that a tree requires one year of recovery after planting for every 1-inch caliper of its size. "Bare-root trees are often younger as well, so their chance of survivability is higher. For instance, a 6-inch caliper tree will go through six years of transplant shock. The younger the tree, the shorter its recovery time."

Holes for all three tree forms should be backfilled with the site's original soil, Harris said, pointing out that the best soil for root growth has space for both air and water. "To backfill correctly, fill the hole until it is half full, flood the hole with a slow hose and then tamp it gently with your foot to firm the soil," he described. "Repeat this until the hole is full. This method will remove any large air pockets in the soil that can cause problems later on."

After adding the rest of the soil, build a small ridge of soil around the planting hole to act as a water well, Chinery advised.

LIFE AT STAKE. While staking newly planted trees is common, it can be unnecessary depending on the species, size and location of the tree, Sydnor pointed out. "Small trees up to 2 inches in diameter rarely require staking, while larger plants may or may not require staking," he said. "In research measuring the effect of rigid supports on staked trees, unstaked trees were found to have greater trunk diameter than their staked counterparts. Unstaked trees also were lower in overall height while having bigger root systems and had greater trunk taper, meaning that the trunk increased in diameter more rapidly."

Harris typically won't stake trees unless he plants them in an area with excessive wind or traffic. Both Harris and Peters agreed that if they do stake trees, they do so only for the tree's first growing season.

On the other hand, because nursery-grown trees tend to lack trunk strength, Matranga believes staking matters. He will keep stakes on a maximum of three years, depending on the tree's stability, species and location. "If someone walks on crutches all his life, his legs won't know what to do," he explained. "If staking is done properly, a tree should stand on its own after 12 to 18 months."

Typically, two stakes and one set of ties should be used as low as possible, while still supporting the top of the tree, Matranga described. Rubber tree ties are better than hoses, wires, ropes or other materials that can bite or cut into the tree, he pointed out.

The ties should fit securely around the tree, Sydnor added. "Increasingly, people are trying to provide for flexibility and movement at the tying point, not realizing that this increases the risk of mechanical injury," he pointed out.

Guying, another form of staking or supporting a tree, is done with guy wires and normally is used with trees more than 4 inches in diameter, Sydnor said. "They (guy wires) should be attached at or above the lowest branches and then affixed to stakes driven 18 inches into undisturbed soil," he indicated. "For trees more than 5 inches in diameter, guy wires should be anchored with earth anchors or deadmen."

Sydnor recommended removing guy wires after one growing season to prevent girdling.

AFTER SHOCK. Trees have immediate needs after planting to help ease the shock of being thrust into a new environment.

For at least one to two years after planting, trees should receive about 1 inch of water per week during growing seasons, Sydnor

stressed, pointing out that too much water also can be a problem. "Excessive water probably kills more plants than water deficiency," he said. "To help determine when watering is needed, plant a drought indicator plant in the rootball of the tree. Indicator plants, such as impatiens, coleus and ajuga, wilt dramatically. The tree can be watered whenever the indicator plant has been in shade for at least one hour and is still wilted."

In addition to infrequent and deep irrigation, mulch should be immediately applied to the soil surrounding a freshly planted tree to help retain moisture, enhance soil nutrients, prevent weeds and protect the tree from mower damage.

Excessive mulching, or what Peters called "volcano mulching," can promote a wet environment for fungus and root decay, so he recommended spreading a 2- to 4-inch depth of natural wood-chip generated mulch sprinkled out 1 to 2 feet from the tree.

"A lot of people use pine bark or cedar mulch, but it doesn't decompose as quickly or have the organic matter qualities that natural wood chip mulch has," Peters pointed out. "Often times we'll use wood chip mulch and then apply a small amount of cedar mulch on top of that for the 'look' clients want but the benefits the tree needs."

AB

The author is Managing Editor of Lawn & Landscape magazine.

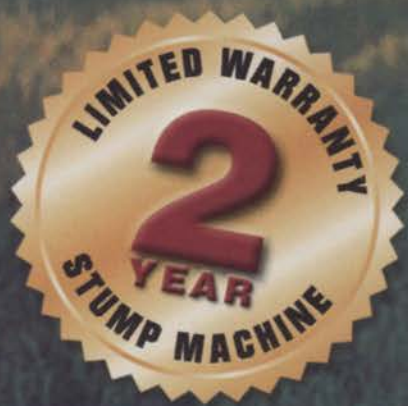


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USE READER SERVICE #154

(continued from page 54)

Second Application Needs – When weather conditions are favorable, diseases such as brown patch or pythium may require additional fungicide applications at regular intervals after the initial application. Read pesticide labels and check with suppliers to determine if additional applications are necessary, but most importantly, pay close attention to weather reports. Nighttime temperatures, relative humidity and wind speeds

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influence disease management. For instance, higher temperatures, humidity and excessive rainfall can lead to disease.

Equipment Calibration – Don't assume equipment applies the desired amount of herbicide every time. Orifices get plugged or

worn, nozzles get bent or crushed; even lop-sided tires can cause inaccuracies.

Spray checks can alert LCOs of problems. This is an honest look at the output of a sprayer or spreader, and it can be very revealing. For boom sprayers, attach glass jars underneath each nozzle, let the sprayer run for a minute, then measure the amounts in each jar. In most cases, some will put out the right amount, some less than desired, some more than desired, and some will be completely plugged. For dry spreaders, mark off a 1,000-square-foot turf section. Weigh out the correct number of product pounds and make the application. If there isn't enough to cover the area, or if a considerable amount remains in the hopper after the area is covered, then calibration, adjustment or replacement is necessary.

Application Timing – Timing is critical. Following the integrated pest management philosophy, most fungicides are applied when conditions favor the development of a

particular disease, and before the expression of full-blown symptoms. If your client calls you to look at a fungus in the lawn and you arrive on-site to see a heavy summer patch infection, control options are limited since the roots and crowns are already rotten and nonfunctional. However, if a client calls in the spring and wants to prevent the demise of his or her lawn, you can look in back records to find a history of summer patch problems and make a preventative application for it during the infection phase, rather than the "too late" symptom expression stage. (For timing on specific diseases, see *Timing Tips* on page 54).

Drift – Drift is the physical movement of the fungicide away from the intended target site during the application. If the drift is too great, the concentration is reduced and the fungicide will fail. However, the larger concern with drift is the negative effect the application will have on plants or people adjacent to the sprayed area. Drift can be reduced

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USE READER SERVICE #41

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Fungicide Applications

if fungicide applications are made when wind speeds are 5 mph or less.

Application Error – This is one of those unfortunate situations where the applicator simply didn't understand which area to treat or which tree to spray at a customer's home. Communication skills can be enhanced through simple techniques, such as restating the directive, drawing maps and writing instructions in understandable terms.

Improper cultural practices – In some situations, LCOs inherit problems that stem from previous, poor management regimes. These involve fertilizer amount, formulation and timing, lack of aeration, improper cut height, erratic irrigation and so on. For example, consider mowing height, especially with control of foliar turf diseases. The best control strategy calls for applying the fungicide between mowings instead of beforehand, so treated tissue isn't removed before the active ingredients can get to work on the fun-

(continued on page 82)

Spray pattern indicators can help lawn care operators achieve uniform coverage. These products are temporary dyeing agents that are mixed with the fungicide and water in the spray tank. When applied, the formerly "invisible" fungicide and water combination becomes bright blue or green.

Using a spray pattern indicator has several advantages:

- It is effective for training new employees. At first, most applicators aren't familiar with the equipment and need a visual cue to understand where the product falls on the turf.
- Indicators help identify worn or clogged nozzles. If the color of the pattern is lighter in certain spots, or nonexistent in others, then the incorrect amount of product is being delivered. Replace those that are nonfunctional.
- Indicators cost money, but they also save money. If not identified, gaps in coverage leave turf areas unprotected and susceptible to disease infection.

– **John Fech**

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Fungicide Applications

(continued from page 80)

gus, or just after a mowing when the turf has a reduced foliar surface for the fungicide to contact and work on.

Ignoring cultural practices stresses turf and ornamentals, lowering their resistance to fungal infections. Weather factors, such as rain, sun and wind, also influence product effectiveness, and must be considered.

Photodecomposition—This factor deals with the sun's effect on fungicides. In most cases, liquid products are the primary concern, as they have greater sun exposure than granules. When the applicator sprays them, the active ingredients can be rendered inactive or reduced due to the sun's effects. Granular applications also can be affected this way,

especially if particles are left on the turf. Reduce photodecomposition for granular applications by applying a ½-inch of water.

Volatilization—Somewhat related to photodecomposition, volatilization involves upward movement of the fungicide away from the turf. This occurs when a large percent of the applied product turns from a liquid state to a vapor or gaseous state. This reduces the active ingredient on the turf's surface. Volatilization can be limited by avoiding applications on hot, windy days.

Leaching—This occurs when active ingredients move down through the soil profile, below the roots of trees, flowers or turf. Leaching causes the fungicide in the needed zone to be diluted, and, in some cases, can pollute the groundwater below plants' root zones. Leaching tends to be greater on extremely sandy soils. Avoid excessive irrigation and incorporate compost into the soil profile.

Adsorption—This occurs when the applied fungicide becomes tightly bound to the soil particles, rendering it ineffective for use as a pest control agent. Adsorption becomes a concern when too much product becomes tied up, reducing its concentration. If this is a problem, consider topdressing with compost and/or sand to moderate the soil makeup. Actually, adsorption could be beneficial in the case of a soil-applied fungicide for root and crown diseases.

Microbial Degradation—Fungicides can degrade after application. The microbial population of the soil can induce this degradation. Instead of the fungicide and the microbes co-existing in harmony, when degradation occurs the microbes actually feed on the product, reducing its concentration and chemical state. The result is an ineffective compound. If this occurs, some relief can be achieved by selecting a different fungicide—one that has not been used previously on the site. The microbes may eventually feed on new material as well, but not for a few years.

Understanding why fungicide applications fail in certain instances and the steps that can be taken to minimize performance problems makes sense. Environmental quality, reduced costs, enhanced public image and the creation of a healthy landscape are the desirable outcomes that result from attention to fungicide application details. ■

The author is an extension educator at the University of Nebraska Extension, Omaha, Neb.

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USE READER SERVICE #73

Design/Build Bloopers

by Kristen Hampshire

Steer clear of these common mishaps to turn a landscape plan into a work-in-progress.

Bad timing? The crew is marooned on a property without materials. Scheduling slip? The superintendent stirs on site while subcontractors finish grading, paving or lighting. Communication shutdown? Phone calls pour in, customers log complaints and repeat business drops.

These design/build bloopers can accompany any project – even a seemingly flawless plan isn't immune to minor mishaps. Truth is, a client's perception and the project's reality don't collide without a few casualties.

"When people buy what we sell, they are buying what they see in *Better Homes & Gardens*," related Gary Kinman, president, Kinman & Associates, Columbus, Ohio. "They see an environment and they visualize their family reunion or their birthday party."

There isn't a tried-and-true technique to accomplish this ideal atmosphere or successfully execute a design/build project, however. "Nothing that we do is really rocket science," noted Thomas Dunn, president, Dunn Lawn & Land, St. Louis, Mo. "It's just making sure that everyone knows what is going on and that everyone can bring that expectation to reality."

CROSSED COMMUNICATION WIRES. Expectations fuel design plans – clients' mentally renovate their properties and turn over the details to design/build firms. Then, a plan is built on communication, coordination and delivery.

"You need to make sure that your customer is happy and knows what to expect and is aware what they are going to get," Dunn stressed. "You also need to make sure that the crews are aware of the customers' expectations. The communication flow between those two groups is extremely important."

Dunn knows firsthand that when this communication is foggy, a project's completion date might indicate the start date for many changes. While building a water feature, his company misinterpreted the client's stone choice for the structure. Dunn asked the customer if the stone type was correct before placing the materials order, and the selection was verified. But when the stone arrived, it was not at all what the client visualized.

"Now, we make sure we have a picture of an actual sample for the customer to see," he said, noting the mistake cost the company a couple thousand dollars even though the client covered the labor and installation expenses for the change. "Even through we had it all correct in writing, it wasn't what the customer wanted," he said.

Now, when asked the most critical keys to design/build success, Dunn lists communication and information. These

(continued on page 86)

Dealing with

Design/Build

BLOOPERS

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Design/Build Bloopers

(continued from page 84)

two elements harmonize to form the foundation of a project. Contractors should discuss in detail the price, timeframe, materials and goal of the project, he said.

"You have to be detail-oriented," Dunn noted, which includes informing crews of specifics so they can turn plans into procedure. He also shares direct cost information with project managers so they can make wise

decisions for the site. "This allows them to know how much time they have to work on projects and gives them parameters to gauge productivity. It empowers them to make decisions on their own, creates a better bottom line and the project is finished efficiently."

CLUELESS CLIENTS. Information and understanding do not always cooperate. Con-

tractors might provide a client with drafts, photographs and hardscape samples, but that doesn't mean the client comprehends the project's scope. Here, companies should pair education with information so customers can picture end results and approve the plan.

Kinman calls this process intimate client communication. "Our interaction is really on the front-end so people understand what is going on," he noted.

Involvement starts at the beginning of the design process, he stressed, adding that he discusses site work issues, such as drive-ways, drainage, grading and hardscape, with clients so they understand the fundamentals of their property and why certain designs are not feasible. Then, he moves on to plants, which also require educating customers, he said.

"If you had a baby and you got it home from the hospital, would you set it in the yard and leave it for a year?" he asked. "You have to take care of your baby. People end up with plant material and then they never look at it."

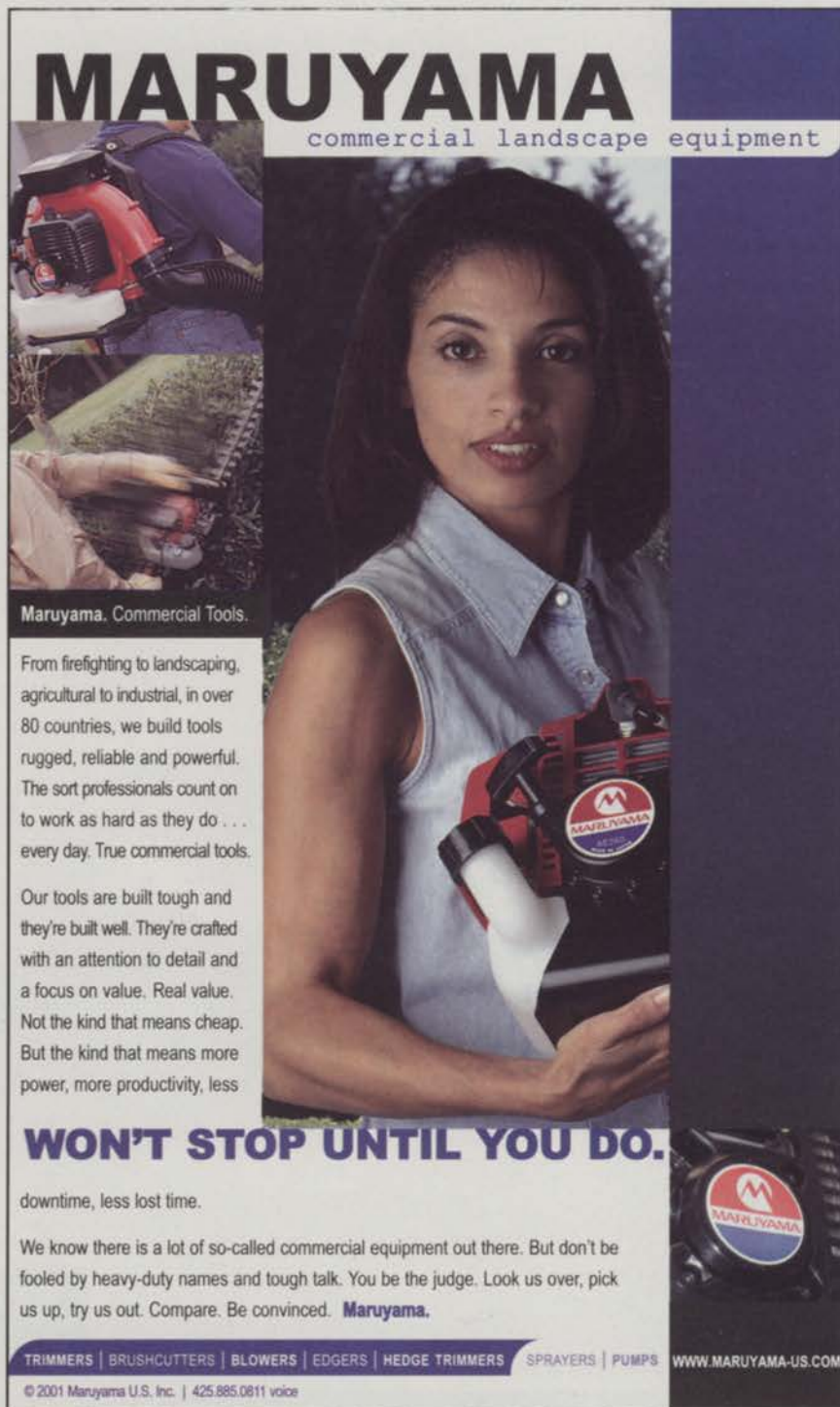
The horticultural portion of the landscape installation process is often where clients become the most enthusiastic once they learn more about the plan, however. "That's the side they will be most involved in - what is going to happen and how it is going to affect their home," Kinman described.

Kinman facilitates participation with a design studio that is set up with examples so clients immediately get involved. They also pick out their own plant material, sometimes visiting nurseries for a real-life plant preview. "We say, 'This is your home,'" Kinman said. "Is it correct for me to pick up your drapes and carpet? I don't think so. Your memories and experiences that make you who you are will make you pick out a landscape symbolic of who you are. So, when a client picks out their own materials, they get into it a little more."

Allowing clients to deliberate over design details reduces the likelihood of dealing with mid-project miscommunications and post-project problems, Kinman said. "We walk side by side with the client to make sure they are comfortable."

PLAN PROBLEMS. "Call before you dig," advised Lynn Reeves, commercial project manager and landscape architect, Frank Otte Landscape and Design, Louisville, Ky. After

(continued on page 88)



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USE READER SERVICE #37

Design/Build Bloopers

(continued from page 86)

relying on inaccurate utility marks on one of his construction projects, he realized the importance of a subsurface lot survey.

Phone lines, cable wire, rocky soil – these site implications can't remain underground during the planning process.

Quick TIP

CLIENTS WHO WANT to see instant results often will pressure contractors during the scheduling process, pointed out Lynn Reeves, commercial project manager and landscape architect, Frank Otte Landscape and Design, Louisville, Ky. Rushing onto a property can cause project problems, however.

"I won't do anything until we know to the best of our ability what is out there," he said, adding that utility line locales and soil conditions need to be examined before breaking ground. Also, contractors need to coordinate their schedules around other subcontractors on a property, which can delay timing, he said.

"I won't go into a project and just start digging," he said. "You need to know as much of what is on the subsurface as possible."

"We bid a project to install a large screening wall, and from the time it was designed and we bid on it to the time we went to implement the landscape, there was a change and a large transformer was put in on the property," he described. "The plan was drawn one way and the way the property was constructed was different, so we hit a line."

Though these marks are accurate eight

times out of 10, sometimes utility companies paint the lines incorrectly, Reeves added. "There isn't a 100 percent chance that you won't hit them."

This is how Reeves learned that communicating extends beyond customer-contractor relations. It also means evaluating soil conditions, identifying hidden rocks and boulders and relaying this information to the designer and the crew.

Attention to detail can eliminate design discrepancies and is especially important when the plans were not developed by an in-house architect, Dunn added. Here, again, discussion and understanding is key, as architects must explain their vision to the contractor, who must ensure the designer combed the property for potential problems before drafting a plan.

"Plans don't always reflect the exact condition in the field," Dunn noted. "And if someone is not here to help interpret or cor-

(continued on page 90)



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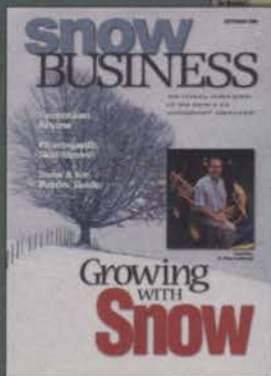
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Design/Build Bloopers

(continued from page 88)

rect the plan, the installation can be a little different than the intention."

Hashing out the particulars and pointing out possible pitfalls mends the architect-installation gap, he added.

"You have to go over the project so that the designer understands what you are trying to create—the overall picture, not just the nuts and bolts," Dunn stressed.

MATERIAL MISHAP. More than drafting a design, the planning process includes coordinating materials for the project, from plants to pavers. Given the time constraints many jobs present, contractors often have a narrow window of time to obtain the design dressings.

"One of our big challenges is that people want the job turned around quickly," said Phillip Ring, president, Detailed Environments, Warrington, Pa. "They want the pool by Memorial Day and they want it designed and installed in a short amount of time."

Though Ring can reassign employees from

maintenance crews to installation projects to meet deadlines, he said acquiring materials isn't always so flexible. Without an on-site nursery, advance planning is necessary so materials can be direct shipped in time to finish a job, he said. He sticks to a basic plant palate, avoiding anything "too bizarre," and offers clients substitutions if the ship time doesn't correlate with client's demands.

Then, there are plant quality concerns. When contractors don't hand-pick materials, they might end up with a shoddy selection. "We learned that you have to go and tag more, and make sure you see the plant material before it shows up," Ring said.

Also, a well-defined plant placement plan will help contractors decide on appropriate selections and possible substitutions if the desired plant is not up to par or will not arrive on time, Ring noted.

SCHEDULING SORE SPOTS. Coordinating crews is the source of many system

errors. Contractors must match their schedules with other subcontractors, consider the job's necessary man-hours, assess the productivity of their work force and then assign a schedule based on these variables.

"For each job, we have a typewritten format from the general contractor of when the electricians are going to do their thing, when the sidewalks are going to be poured and when the sodding guy is going to come in," Reeves listed. "I take these schedules, put them side to side and try to put them on a master schedule to figure out when we need to be there."

Reeves considers the size, location and site conditions of a job before scheduling his crews, and he checks the job site on a daily basis to note the subcontractors' progress. "I go out and look at the property to see what the soil conditions are so when we sit down to review it in the morning with the crew and make the schedule, I share what I found out

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USE READER SERVICE #96

Design/Build Bloopers

(continued from page 90)

and we decide if there is anything that needs to be changed," he said.

Touching base with contractors makes these morning meetings less hectic, he said, adding that he establishes a rapport with regular subcontractors. "I guess it's like a member of the landscape crew, really," Reeves figured. "The trick is to establish a relationship with a reputable and reliable subcontractor and do enough business with them so that you know that you can call them and get a fairly quick response."

However, the crew's synergy solidifies the schedule, turning paper to procedure, Reeves said. His employees' strengths and weaknesses level one another, creating a productive group – a necessity for completing projects efficiently. "These guys have worked together to the point where they know what to do without stopping and asking," he said.

Essentially, the project's success depends on employees' skills, which is why contractors must hire reliable workers. Dunn scans applicants for a construction background.

"They have to like working with their hands," he commented. "Then, you can train them and teach them and bring them up through the ranks."

Appointing a project manager to oversee the quality, efficiency and details of these hands-on jobs holds crewmembers accountable for completing work within the scheduled time, Dunn added. He staffs crews with two employees and one project manager, who oversees the team, he explained.

"If you empower the right person, it is extremely rewarding for that person when he or she knows they are in charge of it from the relationship with the customer to making sure that the project is built profitably and that it looks great when it is finished," he said.

FINAL TOUCHES. Despite design/build blunders that crop up during a project, companies that follow up with letters, phone calls and walk-throughs to ensure client satisfaction will finish the job on a high note.

"Follow-up is a very important step in

the overall completion of a job, because if there is something that is not right, you certainly want to know about it," Reeves said, adding that he drops clients a quick thank-you note. "It's the biggest step to getting repeat business."

This post-project contact secures relationships and serves as a sales tool for maintenance services, Dunn recommended. "We believe in personal contact," he said. "They can e-mail us and we'll call them regularly. We stay in touch with them personally."

Kinman accented the value of mending mistakes, reviewing the project and receiving the client's approval, adding that a reference list of pleased customers builds company credibility. "The last person you work for is your next life-time salesperson," he compared. "So, do your job right, and you'll have them pushing your company and your services forever." **LI**

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

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by Kristen Hampshire

When all signs point to complicated irrigation installation, contractors need to watch for warnings like steep slopes and bending bedlines.

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Signs like these don't crop up on properties, but their warnings all point to trouble during irrigation installation. Since technicians perform their work on "Private Property," they must install systems around a laundry list of obstructions, from steep slopes to peninsula-shaped planting beds. And after weaving wires around utility lines and picking appropriate sprayheads, they still must please their clients with the projects' aesthetic results, reminded Rick Pate, president, Pate Landscape, Montgomery, Ala.

"You love when the turf looks like a soccer field," he commented. "But when you get behind the house and there's a play set, a storage building, planters, the homeowner has a dog and there is an air conditioning pad on the side of the house – that's when the job gets difficult."

This is where some contractors find a fork in the road. After stumbling across signs – potential problem spots – they must proceed with caution, choosing an installation path that won't dead-end into a maintenance manhole.

ROAD MAP. A property's physical challenges can prevent even water distribution, causing over-irrigated turf sections, under-watered plants or overspray on sidewalks, streets and buildings. Before breaking ground, designers should survey the area for obstructions, such as trees, plant beds, sharp angles, steep slopes and fences, advised Scott Fay, president, Treasure Coast Irrigation, Hobe Sound, Fla.

"You need to see the landscape plan," he stressed. "The most common things that block water are landscape material or landscape features. If you just walk off a piece of property with a plot or site plan and design a system without paying attention to the landscape you could end up blocking sprayheads."

"We can't make water turn corners," he pointed out.

An effective installation plan, however, can manipulate the spray, even if it can't make the water cut a 90-degree corner. Fay begins his installation journey on the rough road, determining how he will manage challenges before arranging the rest of the system. "If you can work your system in such a way where you are spraying away from the landscape feature, such as a statue or building, and not at it, that is the best," he noted, adding that often he suggests that clients install a mulch or stone bed around these areas to build in an overspray buffer.

Next, Fay works systems on their visible order of importance, fine-tuning focal points before backyard

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USE READER SERVICE #21

Irrigating Tricky Areas

(continued from page 94)

corners. "If the irrigation system is by the front door, then we'll plan those areas first," he said.

Todd Ruggles, superintendent, Irrigation Specialists, Indianapolis, Ind., avoids overlooking complications with a checklist that covers key installation considerations. While assessing the property, he reviews the ground condition, water source, bed lines, and backflow and box locations. Before beginning the project, he calls the utility company to verify line locales, which can get hairy on compact properties, he noted.

"Lot size is playing a large role in our planning because of all the utilities crammed on these ¼-acre lots," he said. "And it's not really the lot size, but how it's laid out utility-wise. You have gas, electric, phone, cable – all these different utilities going into a house, and they are all crammed into the same spot you need to go."

Many times, fences also border these lots, restricting installation methods, Fay added.

Their openings are too small to squeeze in large, trenching equipment. "We end up doing a lot of hand digging," he explained. "You invest money in new machines and they become obsolete because you can't utilize them as well as you used to because of lot size and fences."

So, while contractors plan how they can apply water evenly, work around utility lines and avoid wasting water by sprinkling sidewalks, they also must figure out how to execute the project – and often more challenges mean more man-hours.

"A lot of these jobs double our time," Ruggles figured. "When you see these difficult things, you have to figure out who on your staff will take these circumstances and get them done the best and the quickest."

TIGHT CORNERS. Most lawns don't emulate Pate's ideal soccer field property. The land can swoop and swell with slopes, and plant beds can divide it into sharp-cornered

sections. Under these conditions, technicians can run into water requirement discrepancies, Pate noted.

"In the same plant bed you can have such dramatically different water requirements," he said. "Annual beds need more watering frequency – almost daily watering – whereas you can water your shrubs less."

Also, as plants grow and change, their water needs fluctuate or diminish, he pointed out. "Plant beds are a dynamic situation," he related. "Three years from now, they could need more adjustments because the plants are changing. Plus, people want to move plants around. You don't see people changing their turf areas, but people might plant different varieties in their beds every year, so you get a different situation."

These varying water needs demand special zoning that separates plant species and creates different zones for full-circle and part-circle sprayheads, suggested John Ossa, busi-

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TORO IRRIGATION



USE READER SERVICE #83

Irrigating Tricky Areas

(continued from page 96)

ness development, Jensen Landscape Services, Cupertino, Calif. "Hydrozones, defined as a plant grouping that has differing water requirements, are irrigated separately," he explained, adding that environmental conditions, such as sun exposure, also determine these parameters. "Ideally, you would like to separate the different conditions so that you can distribute the appropriate amount of water."

Some contractors turn to drip irrigation to manage high-maintenance situations, Ossa said. This sub-surface option is ideal in drought-ridden area as it does not produce overspray, conserves water and ensures proper dispersion. However, the method comes with constraints; it doesn't offer turf coverage and can be difficult to monitor.

Besides beds, contractors tackle land grade issues, which also can affect zoning. Dramatic slopes cause water run-off, which could leave a hill with a dried-out top and an over-saturated bottom, Fay said. "If you have

an aggressive slope and are getting run-off, you want to run the spray times much shorter but water more frequently," he suggested. "If you run the system too long, water will just run off the slope." Ideally, arrange elevated areas that require more frequent watering on different zones than their less-demanding low points.

Pairing zones entails calculation, Pate said, noting that volume and pressure are water's two major variables. "If you have 10 feet of elevation change, you could have as much as 5 pounds of pressure difference, so that could make a difference in your system's performance," he explained. "You need to consider in your calculations that the higher elevation has a lower pressure because you lose pressure as you water the hill."

While adjusting the system to accommodate land characteristics, contractors also should take into account the height of the spray stream, Pate added. "Sometimes you need the water to throw under things and

sometimes you need it to throw over," he said, listing barriers like shrubs and trees. Sprayhead streams that hit certain tree species can damage the bark and disturb the tree. "If the trunk of a tree is wide, we'll plan the system to throw water past it," he said.

WATCH FOR UNDERPASS. Contractors can consult a site map or scan a property for stand-out signs, but some quandaries lie beneath the surface. For example, clients might choose appearance over convenience and prefer hidden valve boxes, Ruggles said.

"We've gone through hard times getting boxes in little areas where if you could set them in the yard, it would be more simple," he commented. "If you have to stick it in a corner and run over 10 pipes to get to it, it will be 10 times as hard."

While looping through webs of electrical lines, tip-toeing around delicate plants and working around cumbersome tool sheds and

(continued on page 100)

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USE READER SERVICE #84

Irrigating Tricky Areas

(continued from page 98)

swing sets, contractors must evaluate the soil. Rocky terrain or clay soil can inhibit the installation process, Ruggles said. "Installing sprinkler heads can be a feat," he said. "We have conditions where we are trying to put in a 12-inch head and you can't dig 4 to 5 inches. When you are expected to put a head in every 10 to 15 minutes, it can definitely slow you down."

Ruggles also compensates for his region's contrasting soil types, as properties in one area of Indianapolis primarily are composed of clay, while the downtown area generally requires ripping up roads to install a system. "We go from digging through rock and pavement to clay," he said. "What ends up happening is we resort back to trenching, which takes us twice as long. When you have to trench and backfill as opposed to pulling pipe, it costs more and takes time." Also, when Ruggles digs rugged terrain, he is left with rocks to backfill the area.

Then, there are outside considerations

that affect installation – uncontrollable construction implications. These incidences are Ruggles' pet peeve, or his "biggest beef." Since irrigation is the final touch on a construction project, following the pavement, the lighting and the landscape, he often waits on others to begin installation or to deal with last-minute changes that can alter the scope of the project.

"You are competing with all these other people," he described. "The general contractor gets down to the last week and they want you to hurry up and get everything in to finish the project."

To avoid a rush job or conflicting schedules with subcontractors, Ruggles suggested obtaining a master schedule from the general contractor and reviewing the timeframe of the project when assessing a job. "Figure out when everyone else is going to be out of the way and when the landscape contractor is coming in," he advised. "That way, if you

(continued on page 102)

An irrigation system functions as a whole based on the quality of its parts. Skimping on hardware will compromise its potential, noted John Ossa, business development, Jensen Landscape Services, Cupertino, Calif.

"Whether you're repairing a system or going back in to upgrade a system, it's not good enough to use the hardware you have in your truck," he said. "If you do that, you may undermine the integrity of the system. You should match the type of hardware that is already on site."

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Irrigating Tricky Areas

(continued from page 96)

put in a system, you won't have to rip it back out if they rearrange a plant bed or move back the sidewalk."

Also, Ruggles checks up on new construction projects several times before designing a schedule for his crew. He notes the progress on the site so he doesn't arrive too early or too late. "We never send our crew out blind," he said. "It's a lot of planning, and I run to the jobs asking clients how they are doing and when they want us on the job."

PRICING POTHOLES. Extra care takes extra time and creates extra costs. Pricing difficult irrigation jobs is a Catch 22 for many contractors. They realize the importance of compensation for man-hours and additional parts, however, they also know that upcharging every challenge can result in a sky-high estimate.

"We charge extra, but when you look at these things you kind of think, 'What is the minimum we can charge to cover our costs?'"

Ruggles said. "You have to stay competitive."

He uses a base price that covers the cost to install a 4- or 5-valve assembly and then figures the time involved in hand-digging the system. He tacks on the man-hours for this labor to the base price.

Pate estimates cost based on the number of parts he uses, which each have assigned labor costs. "Smaller, tighter, irregular areas require more heads," he said. "It's a by-product of figuring more pipe and more heads, and it will generate a higher price. Each item has a labor cost associated with it on our spreadsheet, so it automatically generates a higher bid."

Most clients want an explanation for a higher bid, however. Fay discusses his pricing with each client, noting a bare-minimum installation, which would not effectively irrigate some of the tricky areas, he said. He offers the client upgrades, giving them the decision to go with a less expensive bill or install a quality, full-coverage system.

Ossa also uses communication as a vehicle for pricing a project so it will match the clients' budgets. For example, if they do not have the budget to separate the zones to adequately irrigate the lawn he offers customers the option of installing the system on one valve, warning them of possible effects. "You inform your client of the benefits and the efficacy of the trade-off," he noted.

Education is a key to customer communication – the more they understand their system, the better choices they will make to irrigate areas without wasting water.

"No matter where you are, water resources are becoming more precious and it is up to the landscape industry as the most visible user of water in an urban setting to be the most conscientious about its use," Ossa stressed. "In simple terms, it is putting down what the plant needs – no more, no less." **LL**

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

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CONFERENCE PROGRAM

SUNDAY, OCTOBER 7

8:00 a.m.	Golf Outing Marriott Mountain Shadows Golf Club
1:00 – 4:00 p.m.	Site Tour with Terrain Systems – A Lawn & Landscape Top 100 Company Phoenix, Arizona
4:00 – 6:00 p.m.	Registration/Resource Center Open
6:00 – 7:30 p.m.	Welcome Reception

MONDAY, OCTOBER 8

7:30 a.m.	Registration & Continental Breakfast
8:00 – 9:15 a.m.	Putting People First: Management's Role in Making It Work <i>Keynote Speaker: Scott Brickman, President, The Brickman Group</i>
9:15 – 10:30 a.m.	Winning the Recruiting Wars for Top Employees <i>Speaker: Larry Fish, President, GreenSearch,</i>
10:30 – 10:50 a.m.	Refreshment Break
10:50 – 12:00 noon	Employment Regulations Affecting Employers <i>Speaker: Jean Seawright, President, Seawright & Associates</i>
12:00 – 1:15 p.m.	Power Lunch Discussions
1:30 – 3:00 p.m.	Creating Career Paths for Your Employees <i>Speakers: Laura Bird, Director, Human Resources; Connie Brown, Training Manager, The Groundskeeper</i>
3:00 – 3:30 p.m.	Refreshment Break
3:30 – 5:00 p.m.	Speaker Roundtable Question & Answer Session <i>Moderator: Bob West, Editor, Lawn & Landscape</i>
5:00 – 6:30 p.m.	Networking Reception

TUESDAY, OCTOBER 9

7:30 a.m.	Registration & Continental Breakfast
8:00 – 9:15 a.m.	Developing an Employee Management Plan for Your Business <i>Speaker: Jean Seawright, President, Seawright & Associates</i>
9:15 – 10:30 a.m.	Motivating the Troops: Creating Excitement in the Workplace <i>Speaker: Marty Grunder, President, The Winner's Circle</i>
10:30 – 10:50 a.m.	Refreshment Break
10:50 – 12:00 noon	Communicating Total Rewards to Employees <i>Speaker: Larry Fish, President, GreenSearch,</i>

What Do Industry Professionals Value Most About the Business Strategies Conference?

"My partner and I attended your Business Strategies Conference in Chicago last year and we were at the point where if we didn't get anything out of the conference, the doors were closing. Needless to say we are still here and stronger because of it."

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Sunday, October 7

8:00 a.m.

Golf Outing

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1:00 – 4:00 p.m.

Site Tour – Terrain Systems

Join fellow contractors from across the country for a site tour with the management team Phoenix-based Terrain Systems – a Lawn & Landscape Top 100 company. Tour actual work sites with the management team of Terrain Systems and see how things are done in the desert Southwest when it comes to landscape design and installation. Bring your questions for the Terrain Systems management team and see how your operation compares. This event is *free* for registered conference attendees. Space is limited and advance registration is required.

4:00 – 6:00 p.m.

Registration/Resource Center Open

6:00 – 7:30 p.m.

Welcome Reception

Reception Sponsored by Lawn & Landscape magazine

Monday, October 8

7:30 a.m.

Registration & Continental Breakfast

8:00 – 9:15 a.m.

Opening Session

Putting People First: Management's Role in Making It Work



Scott Brickman

When it comes to making a company perform at peak efficiency, it certainly helps to have the management team on the same page as its employees. Having buy in from management is a vital step to making people believe in the system and help develop a team attitude. Listen to Scott Brickman, president of The Brickman Group, one of the country's largest and most successful full-service contractors, share his ideas on how you as a manager are the key influencer when it comes to employee buy in. Hear about the commitment The Brickman Group has made in putting people first, the positive results it has yielded and how the concept can be successfully implemented in your company.

Speaker: Scott Brickman, President, The Brickman Group

9:15 – 10:30 a.m.

Winning the Recruiting Wars for Employees



Larry Fish

Where do you find good employees? That question is asked of every green industry manager on a continual basis and the answer will be provided in this informative session. Review proven methods for attracting a greater number of higher quality candidates to fill your company's job openings. Identify strategies for making your recruitment efforts more effective – where to find the winners, how to get your message to them and what you need to make your company attractive to prospective employees. Recruiting a winning team takes time and resources and in this informative session, you will learn how to make the most of your recruiting efforts.

Speakers: Larry Fish, President, GreenSearch

10:50 – 12:00 noon

Employment Regulations Affecting Employers



Jean Seawright

In today's litigious society, employers cannot help but be overwhelmed by the potential for something to go wrong when handling an employment issue with a worker. Furthermore, not keeping up with the latest regulations can be costly to your company. In this important session, hear Jean Seawright, an expert in service industry human resources, discuss what employers need to know about regulations affecting their company and their employees. Learn how to set up a system in your company to make sure you are compliant with the latest government regulations, how to respond to employees' questions regarding regulations and how to safeguard your company.

Speaker: Jean Seawright, President, Seawright & Associates

Morning General Session Sponsored by Shindaiwa

12:00 – 1:15 p.m.

Power Lunch Discussions

At the 2001 Business Strategies Conference, you will sit down to a delicious meal as well as a discussion of leading employee management issues presented in a case study format that you can take home with you for immediate use. The discussions, led by the award-winning editorial staff of *Lawn & Landscape*, will allow you to interact with fellow contractors, hear how they handle employee management issues and pick up valuable tips on how to make your company a better place to work. The proceedings from each Power Lunch Group Discussion will be appear exclusively in a feature story in *Lawn & Landscape* magazine and on the green industry's leading web site – www.lawnandlandscape.com.



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Creating Career Paths for Your Employees

Once you have recruited and hired a talented employee the toughest part of managing is still to come – how do you keep them with your company? Creating career paths for talented employees is essential if you are to maintain the best and the brightest crew leaders, foremen, designers and crewmembers. This informative session will discuss the procedures for establishing a system that will help you offer career opportunities that benefit not only your employee but your company as well. Understand what is important to your employees and how to make career advancement a reality for them and a benefit for you.

Speakers: Laura Bird, Director, Human Resources and Connie Brown, Training Manager, The Groundskeeper

Afternoon General Session Sponsored by Echo

3:00 – 3:30 p.m.

Refreshment Break

3:30 – 5:00 p.m.

Speaker Roundtable Question & Answer Session

How often can you pick the brains of leading green industry managers and human resource consultants about the challenges you face in managing employees? At the 2001 Business Strategies Conference, you will have direct access

to these valuable resources without having to spend a penny more than your registration fee. Join fellow attendees for a lively discussion of the most important issues in employee management. Moderated by *Lawn & Landscape* Editor Bob West, this session will provide you with the answers to help improve your company's ability to respond to employee management related issues.

Session Sponsored by Great Dane Power Equipment



Monday, October 8

7:30 a.m.

Registration & Continental Breakfast

8:00 – 9:15 a.m.

Developing an Employee Management Plan for Your Business

Regardless of the size of your company, having a plan to manage the numerous aspects of human resources is essential. Without a plan, you have no basis to form policy or keep employees in the loop. From developing an employee handbook to understanding how to keep proper records, staying on top of these basic yet often overlooked tasks is essential if you are to properly grow and maintain your business. Take home valuable tips that will help you develop the

framework needed to establish a employee management program from scratch or enhance an existing system. Learn how to create a system that will make employee management easier, more productive and that will serve as an asset for your company.

Speaker: Jean Seawright, President, Seawright & Associates

9:15 – 10:30 a.m.

Motivating the Troops: Creating Excitement in the Workplace

How do you get people to listen? Are you as tired of talking to your employees as they are of listening to you? Once you attend this fast-paced session you will learn how to make your office a more exciting and productive place. Motivating employees is one of the hardest tasks a manager has to accomplish, and if you are not a Knute Rockne-type speaker you may feel frustrated. This session will show you how to motivate your employees to not only become more productive in their jobs but how to get them to believe in your systems and philosophies. A cannot miss session for managers looking to inspire themselves and their employees.

Speaker: Marty Grunder, President, The Winner's Circle



Marty Grunder

10:30 – 10:50 a.m.

Refreshment Break

10:50 – 12:00 noon

Communicating Total Rewards to Employees

Compensation is more than a paycheck. It is medical benefits, life insurance, workers' compensation, retirement plans, vacation and personal time, vehicle allowances, career opportunities, etc. The problem most managers have is communicating these items to employees and helping them see the big picture when it comes to their true level of compensation. In this informative session, learn the methodology behind total rewards and how to communicate it to your employees. Learn how to demonstrate the true value of what you are offering and how to use it as an effective recruitment and retention tool.

Speaker: Larry Fish, President, GreenSearch

Morning General Session Sponsored by Syngenta

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Sunday, October 7 (Includes greens fees, cart, lunch, prizes and transportation)

Site Tour

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Advance registration is required; there are limited number of seats for this event and they are assigned on a first-come basis. The site tour is only open to registered attendees of the Business Strategies Conference.

CANCELLATION/SUBSTITUTION/REFUND POLICY

All cancellations must be made in writing. A full refund will be accepted if received before **September 21, 2001**. No refunds will be issued after September 21, 2001. Advance payment is **required** for the golf outing. No cancellations for golf outing after September 28, 2001. *No on-site refunds*. Attendees can notify the Business Strategies Conference at any time that another individual will attend the conference in their place.

CONFIRMATIONS

All registrations postmarked by September 21, 2001 will be acknowledged by mail. Registrations received after that date should be picked up at the Business Strategies Registration Desk at the Marriott Mountain Shadows Resort starting Sunday, October 7, 2001 at 4:00 p.m.

HOTEL INFORMATION

A block of rooms has been reserved for Lawn & Landscape Business Strategies attendees at the Marriott Mountain Shadows Resort. Located at the foot of Camelback Mountain in the heart of Scottsdale, the award-winning Marriott Mountain Shadows Resort is the ideal location for your trip to Arizona. Attendees should make their reservations directly with the hotel on or before **Friday, September 14, 2001** to receive the special conference room rate of **\$135** per night (single/double). Please ask for the Lawn & Landscape Business Strategies rate. For reservations, call the Marriott Mountain Shadows Resort at **480/948-7111** or **800/228-9290**.

DISCOUNT TRAVEL INFORMATION

The Lawn & Landscape Business Strategies Conference has arranged for special discount airfares to the conference. To take advantage of the discount rates, please contact AAA Business Travel at 800/999-0038 between the hours of 8:00 AM and 5:00 PM Eastern.

GOLF OUTING Sunday, October 7, 2001 8:00 a.m.

Spend a morning testing your golf skills at the 2001 Business Strategies Golf Outing at the Marriott Mountain Shadows Golf Club. Located right on the resort grounds, the Marriott Mountain Shadows Golf Club is ranked one of the Top 10 Executive Courses in the country. The course offers a unique challenge to both the experienced or weekend golfer and is an ideal location for a quick, yet competitive round of golf. Cost for the outing includes green fees, cart rental, practice balls, lunch and prizes. Club rental is available at the course. **Advance registration and payment is required.** Registration deadline is **September 28, 2001**.
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Told An Industry Colleague or Co-Worker To Register For the Business Strategies Conference



REGISTRATION FORM

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PHONE: Call 800/456-0707 and ask to register for the 2001 Lawn & Landscape Business Strategies Conference (weekdays 9 a.m. – 5:00 p.m. EST)

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Special Events

Golf Outing (Sunday, October 7)	_____ @ \$80 =	_____
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Products

(continued on page 114)

insurance against unreliable power

- Microcircuits are protected from electrical spikes and lack of fuses offers surge protection and self-diagnostic short-circuit protection

Circle 203 on reader service card

Tanaka Low Emission Backpack Blower

- Model TBL-4610 backpack blower features a 43cc, 2.5-hp engine and meets CARB Tier II standards
- Offers an air velocity of 200 mph and an air volume of 500 cfm, measured at the end of the blower tube
- Includes swivel/flexible blower tubes, a multi-point, anti-vibration frame and comfortable front handle for added control
- Blower has a pivoting engine control arm

and a 68-ounce fuel tank

Circle 204 on reader service card

Ruud Lighting Guide

- The 24-page landscape lighting design and installation guide offers suggestions on selecting low-voltage and line-voltage landscape luminaries and components
- Includes more than 130 color photographs, illustrations and charts
- Explains lighting techniques, installation basics and luminaire details
- A special planning section discusses



helpful strategies for achieving memorable nightscapes on properties

- Lamp charts include lumen, beam spread and Nadir candlepower data
- The guide is free and available in both priced and non-priced versions

Circle 205 on reader service card

Brillion Overseeder

- Machine is a three-point hitch mounted with PTO-drive knife cutters
- Knives on the front cutter create a groove into which the seed is directly placed, and then the fully-aligned rear wheel closes the cutter for ideal seed placement and seed-to-soil contact
- $\frac{3}{16}$ -inch high-carbon, heat-treated knives are set on two $\frac{9}{32}$ -inch spacings and contractors can adjust them to cut grooves at depths up to 1½ inches

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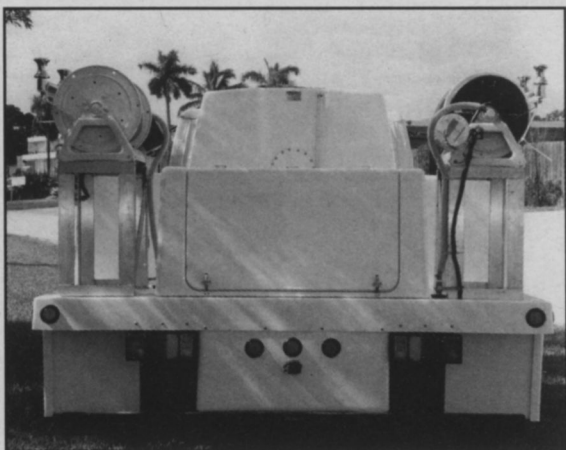
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USE READER SERVICE #61

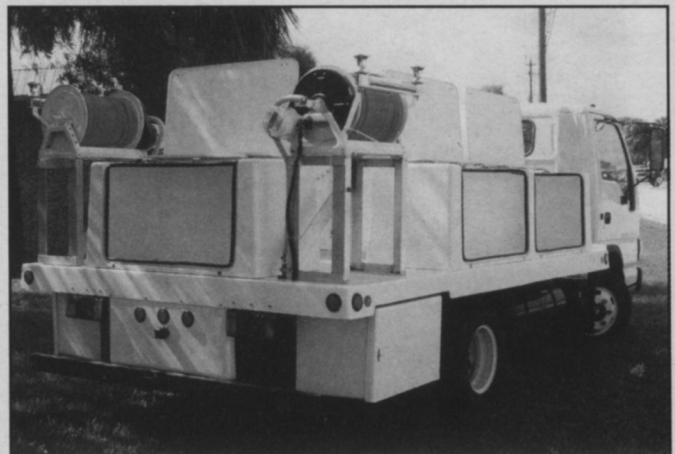
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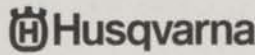
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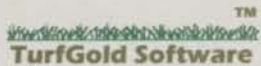
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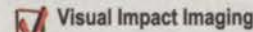
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Products

- The 4-foot model uses a Category I hitch that offsets the overseeder to the right for close-in work
- The 6-foot model is centered behind the tractor using either a Category I or Category II hitch
- A 7-bushel hopper comes with the 4-foot model and an 11-bushel hopper comes with the 6-foot model
- Overseeder includes the Brillion seed metering system
- Turfmaker II Micro-Meter feed cups allow feed rolls to meter tall fescue seeds at rates from 24 to 462 pounds per acre, and up to 924 pounds per acre with standard speed-up kit
- Seed agitator over feed cups prevents seeds from bridging
- Bluegrass rates are 24 to 389 pounds per acre, and up to 778 pounds per acre with the speed-up kit

Circle 206 on reader service card

Caterpillar Augers

- Used for drilling holes for footings, fencing, signs, trees and shrubs
- Chain drive system on the Cat A13 auger features a variable speed, bi-directional, gerotor-style hydraulic motor coupled to a sprocket/chain reduction system for moderate to heavy-duty applications
- Double-reduction planetary system on Cat A26 auger features a variable speed, bi-directional, gerotor-style hydraulic motor mounted to a planetary gear box designed for extreme-duty and high-performance drilling requirements
- All models feature a mounting bracket that incorporates a full-width torque tube, an articulated joint, D-ring hose guide, cradle and stand feet
- Coupler interface is designed to match most skid-steer loader mechanical quick coupler systems
- Hydraulic hose routing, hose length and quick disconnects ensure proper routing and fitting
- Auger bits and teeth are available for all three augers, customizing the machine for specific drilling requirements

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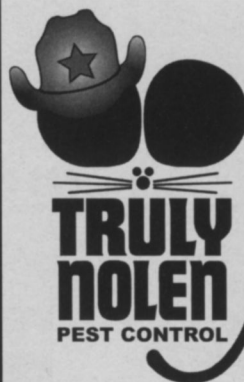
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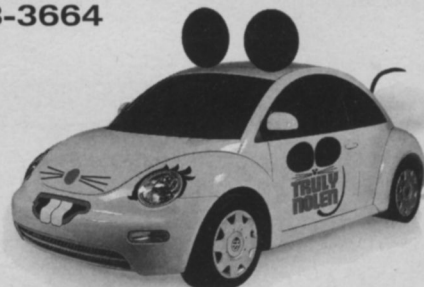


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Products

(continued from page 110)

Hortiscopia Reference CD

- In its seventh volume, the CD provides 21,000 high-quality, full-color photographs and data for 8,700 ornamental plants
- The Garden Workbench® allows users to select plants by common and botanical name or by one of more than 200 attributes, such as hardiness, height, bloom time or growth rate
- New features include an integrated woody and herbaceous library, a favorites menu, botanical name synonyms and easy-to-use toolbars
- Reference CD allows users to preview and print plant lists, information sheets, picture sheets or design a custom print document for landscape proposals or garden center signage
- Electronic documents in Adobe Acrobat format can be created for e-mail

Circle 208 on reader service card

Harmony Products BioDiversity

- The 8-2-4 all natural, organic fertilizer combines organic sources into a homogenous granular

- The fertilizer derives its nutrients from composted poultry manure, feather meal, cottonseed meal, blood meal and molasses to help build a diverse microbial

Hustler Hydro Walk-Behind

- Designed to mount onto nearly any after-market sulky
- H-bar steering makes mower easy to learn and operate
- Can combine with a tow-behind sulky for maximum productivity
- A sulky can turn the mower into a front-mount, commercial-duty riding mower
- Available in 37-, 48- or 54-inch mowing widths
- Available with 15- or 17-hp Kawasaki engines
- Options include a side-mount catcher, mulch kits and Gator™ blades

Circle 209 on reader service card



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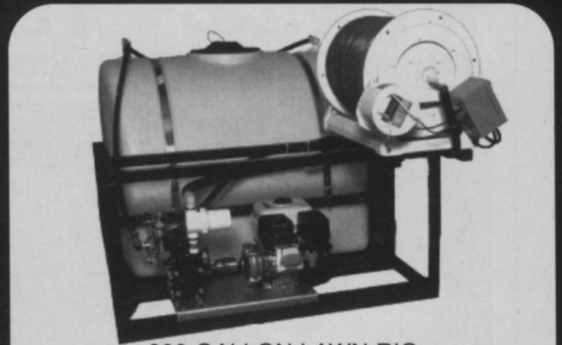
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- Fertilizer helps soils build a wide variety of soil organisms and increase the microbial counts
- Provides nutrients slowly and evenly
- A low salt index makes the formulation safe to apply to any plant material
- The C:N ratio is 5:1, providing more than 70 percent organic matter
- Granulation comes in two homogenous sizes: greens grade (100 SGN) and mid grade (150 SGN)

Circle 210 on reader service card

Gandy Core Aerator/Slicer

- The 4-foot aerator can be ordered with 3/4-inch coring spoons or slicing knives
- Unit's 10 wheels with six spoons each are paired on five segmented sections, each

Hi-Way Equipment Spreader

- MP pickup-mounted deicing spreader includes a new spinner assembly, Screen-N-Store™ and a new control panel
- Spinner assembly can be easily removed for service
- Screen-N-Store serves as a heavy-duty material screen that converts into a stand to store the MP during the off-season
- The new control panel starts and stops the engine and/or conveyor from the cab
- Control panel can be upgraded to include an optional tach/hour-meter that displays engine RPM and accumulated hours of usage
- MP is available in three packages: the Basic Pak, equipped with a 10-hp Tecumseh engine; the Classic Pak, equipped with a 10.5-hp Briggs & Stratton engine; and the Pro Pack, equipped with an 11-hp Honda engine
- Available in lengths from 6 to 10 feet
- Can be hydraulically driven

Circle 211 on reader service card



(continued on page 118)

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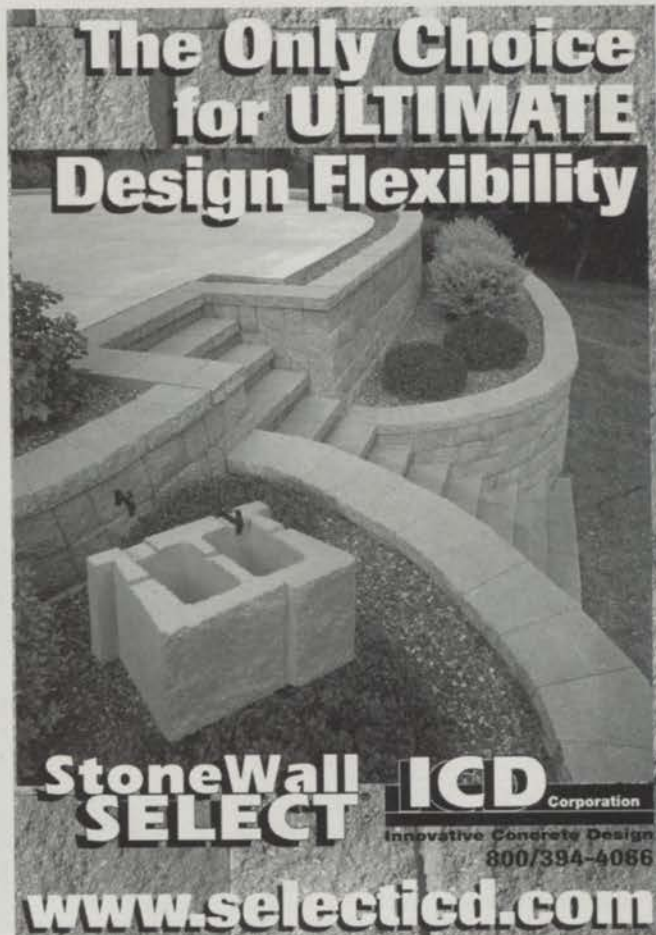
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USE READER SERVICE #16

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— Bob Franey
Total Landscape, Inc.
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Products

(continued from page 116)

having its own grease fitting to maintain free-wheeling action

- Coring or knifing action is enclosed by an 11-gauge and ¼-inch steel shroud on a



welded frame of 2½-inch square tubing

- Weighs approximately 300 pounds
- Models are offered in three-point hitch or towing packages, the tow model featuring two manual lift arms for easy transport
- This model joins the 34-, 72- and 96-inch core/slice aerators

Circle 212 on reader service card

InterGis Software

- Visual Control Room software allows contractors to increase productivity, control costs and enhance customer service by providing scheduling, dispatching and routing technology

- Software program is real-time and graphically-driven
- Can reduce manual dispatch and scheduling time by 75 percent or more while reducing miles driven and time on the road
- Provides arrival time projections
- Can be configured as either a single-user system for small businesses or in a client/server mode for larger businesses that need multi-user access

- Contractors can access the system over the Internet
- Uses Microsoft Windows® 95/NT technology with a graphical-user interface, so it is easy for novice computer operators
- Scheduling, dispatching and communications functions can be accessed from the main screen

Circle 213 on reader service card

(continued from page 121)

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Phone _____ Fax _____

E-mail Address _____

Do you wish to receive industry related information by E-mail?
 Yes No

- I. What is your primary business at this location? (choose only one)**
- 1. CONTRACTOR or SERVICES
 - 1. Landscape Contractor (maintenance & installation)
 - 2. Chemical Lawn Care Company (excluding mowing maintenance service)
 - 3. Lawn Maintenance Contractor
 - 4. Ornamental Shrub & Tree Service
 - 5. Irrigation Contractor
 - 6. Landscape Architect
 - 7. Other Contract Services (please describe) _____

- II. IN-HOUSE LAWN/CARE MAINTENANCE**
- 8. In-House Maintenance including: Educational Facilities, Health Care Facilities, Government Grounds, Parks & Military Installations, Condominium Complexes, Housing Developments, Private Estates, Commercial & Industrial Parks

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- 9. Dealer
 - 10. Distributor
 - 11. Formulator
 - 12. Manufacturer

- IV. OTHERS ALLIED TO THE FIELD:**
- 13. Extension Agent (Federal, State, County, City, Regulatory Agency)
 - 14. School, College, University
 - 15. Trade Association, Library
 - Others (please describe) _____

- 2. What best describes your title?**
- Owner, Pres., Vice Pres., Corp. Officer
 - Manager, Director, Supt., Foreman
 - Agronomist, Horticulturist
 - Entomologist, Plant Pathologist
 - Serviceman, Technician, Crew member
 - Scientist, Researcher
 - Company, Library copy only
 - Other (please specify) _____

- 3. What services does your business offer? (please check all that apply)**
- 1. Landscape Installation
 - 2. Landscape Maintenance
 - 3. Landscape Renovation
 - 4. Mowing and related maintenance
 - 5. Irrigation Installation
 - 6. Irrigation Maintenance
 - 7. Turf pesticide application
 - 8. Ornamental/tree pesticide application
 - 9. Turf fertilization
 - 10. Ornamental/tree fertilization
 - 11. Tree Pruning
 - 12. Snow Removal
 - 13. Interiorscape
 - 14. Other _____

4. How many full-time (year-round) employees do you employ?

5. What year was your business founded?

- 6. What were your company's gross revenues for 2000?**
- 1. Less than \$50,000
 - 2. \$50,000 to \$99,999
 - 3. \$100,000 to \$199,999
 - 4. \$200,000 to \$299,999
 - 5. \$300,000 to \$499,999
 - 6. \$500,000 to \$699,999
 - 7. \$700,000 to \$999,999
 - 8. \$1,000,000 to \$1,999,999
 - 9. \$2,000,000 to \$3,999,999
 - 10. \$4,000,000 to \$6,999,999
 - 11. \$7,000,000 or more

- 7. Please indicate your approximate business mix:**
- 1. Residential _____ %
 - 2. Commercial _____ %
 - 3. Other _____ % Specify types _____

Total 100%

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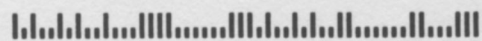
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(continued from page 118)

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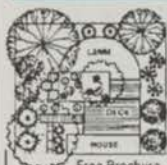
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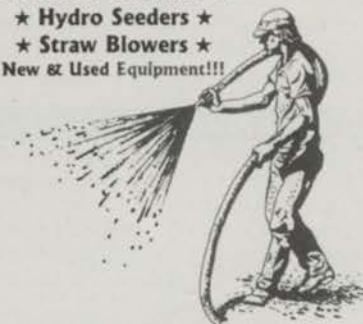
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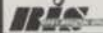
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Carol Chaney
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How We Do It

Implementing a Four-Day Workweek at Phillips

Phillips Environmental Services is a three-year-old landscape design/build and maintenance company with more than 130 employees and offices in Clearwater and Sarasota, Fla. We specialize in upscale residential and large commercial maintenance accounts. As a full-service landscape design/build and maintenance firm, we design, install and maintain irrigation systems, lighting systems, hardscape and large-scale plantings.

Shortly after we started the company, we had a problem – hourly employees were working 10-hour days, five days a week, and overtime pay became a significant issue. The employees put in their time, and some were using overtime to finish ahead of schedule so they could take Friday off. This increased employee absences.

To resolve this issue, we devised a plan to get a 40-hour workweek out of our crews with a hook or two to make it advantageous for both the company and its workers. It occurred to us that workers might respond to 10-hour days, Monday through Thursday, because of the obvious benefit of having a three-day weekend.

A little more research provided some revealing side benefits as well. Since the summer peak season is the hot season, especially in Florida, employees had an extra day to recover from the exposure to heat and humidity common during this time of year. And the three-day weekend provided a cushion of sorts in case the weather didn't cooper-

FIVE BENEFITS of a Four-Day Workweek

1. Fewer employee absences
2. A three-day weekend provides a cushion in case weather doesn't cooperate and we get behind on work
3. Improved employee attitudes and job performance
4. Overtime savings
5. Low initial start-up costs

ate and we got behind on our work.

The benefits of going to four days just added up. We couldn't

find anything negative about it. The employees jumped on it, and they have responded by working harder and enjoying their work much more. Whenever we do have to work on a Friday or Saturday to catch up for some reason, employees understand – before this took their weekends away entirely. The only employees who normally work Monday through Friday are account managers, landscape architects, office staff and mechanics.

Also, this workweek change improved our client image. The way we come across to our clients is important to us. We don't really need to discuss our program with our maintenance customers, but we have noticed clients say their service has improved since we have gone to four-day workweeks. This is evident to them in the improved attitude of our workers to the quality of the job performed. That's significant, because we can't afford to lose clients, just as we can't afford to lose good employees.

Since instituting the four-day workweek, we have had an almost zero turnover ratio. When we do advertise an opening, the applications are many, giving the company a choice of the cream of the crop. With a full benefits package, competitive pay and, now, a four-day workweek, our employment ads really stand out. Right now, we're the only landscape design/build/maintenance company that has a four-day workweek in this area, as far as we know, and that gives us a competitive advantage in attracting top-notch employees.

No additional manpower was needed to switch to the four-day week, and, in fact, there were no start-up costs – just start-up savings due to less overtime – approximately 80 percent. The only disadvantage to the program is that when employees occasionally are needed on Friday, there is never a 100 percent turnout. When an employee has already made plans for the weekend, sometimes they just can't be changed at the last minute. To us, that's a small price to pay for the super work environment we have created here, and we can understand how that is going to happen. All in all, our employees have taken to the four-day workweek, and it is working great for them and for the company. – Chris Phillips

The author is president, Phillips Environmental Services, Clearwater and Sarasota, Fla.

Since starting a **four-day workweek**, we have had **an almost zero turnover ratio ... and 80 percent less overtime.**

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