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Dave Huntsman
Versailles, Ky.

Cover Photo

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Cindy Code
Group
Publisher

H

ave you instituted a total quality business environment at your company? Do you plan to?

Total quality has been bandied about for much of the 90s, but it's more than a passing fad, it's a management philosophy that can revolutionize your firm as well as the outlook of your employees. It involves complete trust in your employees (and vice versa) and the ability of your team to interact successfully with your clients.

This month's cover story is a wonderful example of a landscape firm that recognized its communications obstacles and took steps to resolve internal issues that were stunting external growth. Steven Hillenmeyer, president of Hillenmeyer Nurseries in Lexington, Ky., said at one time the family firm became too focused on individual divisions, causing overall growth to suffer.

The company's three divisions started forming walls which resulted in a lack of cooperation between the landscape, nursery and garden center. Now, the three divisions not only work in unison, they perform cross-training to fill different personnel needs occurring at different times of the year.

For a company to really grow, all members of the team need to know exactly where the company is today and where it's going tomorrow. Managers and employees need to know where they stand both within their individual departments, how their role affects the performance of the company as a whole and the overall performance goals of the firm.

The recent Crystal Ball report from the Associated Landscape Contractors of America titled "Measurements, Reports and Monitoring in a Total Quality Landscape Company," delves into the total quality business environment. While it reports that the service and contracting industries are not far along in the acceptance of this philosophy, it cites dynamic firms that have embraced it.

Some indicators that the total quality process is taking hold in the landscape industry, according to the report, are:

- Landscape firms are becoming more customer-focused, including both sales and maintenance activities.
- More landscape companies are seeing improvement in their ability to attract high quality employees.
- There's an improved quality of life for the owners, managers and employees.

Customers, both internal and external, are the most important facets in the successful growth of lawn and landscape companies. Contact ALCA for a copy of this worthwhile look at management processes. — *Cindy Code* **LL**

Lawn & Landscape

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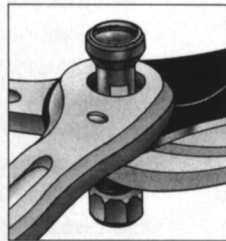
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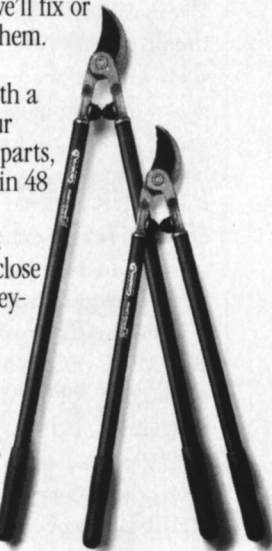
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ALL POWER SYSTEMS GO...

The Portable Power Equipment Manufacturers Association, Bethesda, Md., reported that estimated shipments for all categories of hand-held gasoline powered equipment are expected to increase in 1996.

Specifically, the group forecast:

- Chain saw shipments may increase between 2 percent and 4 percent, following a 1995 decline of approximately 1 percent.
- Shipments of trimmers and brushcutters are expected to grow between 3 percent and 6 percent in 1996, after an increase of approximately 18.6 percent in 1995.
- Hand-held blower shipments will probably increase between 6

percent and 8 percent in 1996, after an increase of about 9.7 percent in 1995.

• Backpack blower shipments in 1996 are expected to increase between 3 percent and 5 percent, following an increase of approximately 9.6 percent for 1995.

• Shipments of hedge trimmers are projected to show a steady increase of between 6 percent and 8 percent in 1996, following 1995's healthy increase of 17 percent.

• Cut off saws may increase approximately 2 percent to 5 percent in 1996, topping 1995's modest growth of 0.5 percent.



PROPOSED FUNDING CUTS WOULD HAMPER NTEP EFFORTS

THE U.S. Department of Agriculture dealt a blow to the National Turfgrass Evaluation Program, cutting the program's funding as of Oct. 1 in its proposed fiscal year 1997 budget. According to Kevin Morris, national program director for NTEP, this action would effectively sever the USDA's only financial support of the entire turfgrass industry.

The funding lost is only \$50,000, or about 10 percent of NTEP's funding, and much of this is tied up in office space and a 15-acre greenhouse and testing facility. However, if NTEP loses its funding, it will be forced to affiliate itself with a university or private organization. Morris warned that this would seriously change the complexion of the program.

"With the USDA's support, NTEP gives the industry the sense that we are put-

ting together data that is unbiased and accurate," said Morris. "If we have to go elsewhere, that could change significantly.

"Losing the support of the USDA would also give the impression that the government does not feel the turfgrass industry is an impor-

tant entity," Morris added. "For a relatively small amount of money, the industry and government gets

(continued on page 8)

PERSONAL FINANCE

EVER SINCE investors began looking for ways to make their money grow, stocks have been at the heart of investment strategies. Some view stock ownership as the best way to accumulate long-term wealth. Others look at it as owning a slice of American industry. To be sure, stocks have been the best performing investment over time. And, short of being an entrepreneur, stock ownership is the most direct way for individual investors to be part owners in a company. This "Q & A" addresses some commonly asked questions about stock ownership:

Q. What is the difference between being a stock owner and a bondholder?

A. Stocks are not the only way to invest in a company. You can also purchase a firm's bonds and, in effect, become a lender to that company. If you hold the bonds until maturity, you are most likely to get back all of your investment. However, your earnings are limited to the amount of interest the company has agreed to pay. Also, bonds frequently have provisions allowing

their issuers to redeem them by prepaying the debt outstanding prior to maturity. On the other hand, when you buy stock, you own part of the company. Theoretically, the more money the company makes, the greater the potential for the price of the stock to appreciate and the dividends to increase. At the same time, if earnings dwindle, the stock's price and, possibly, dividends are likely to decrease.

Q. How is my return on a stock investment calculated?

A. When you buy a bond, your yield or return on investment is generally established up front (assuming the full payment of principal and interest when due). With stocks, however, you don't know your return until you sell. Total return is simply the percentage change in the stock price from when you bought until the time you sold. In addition, if the company pays dividends, the dividend yield is added to the percent change in the share price to arrive at total return.

(continued on page 17)

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MARKET TRENDS

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a lot out of the program."

Morris is not speculating on options should the funding be canceled, because the budget can still be adjusted. He urged turfgrass industry leaders to contact USDA officials to push for a change in the NTEP budget cuts.

▼ RAGS TO RICHES SPEAKER TO GIVE GIE KEYNOTE ADDRESS

Robert Farrell, founder of more than 130 Farrell's Ice Cream Parlors and recipient of the Rags to Riches Horatio Alger award will

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ASSOCIATION NEWS

The Professional Grounds Management Society recently launched a new groundskeeper certification as a part of its Certified Grounds Manager program. For more information, contact PGMS at 410/584-9754.

The Associated Landscape Contractors of America held a record setting Executive Forum in February, with more than 300 attendees. The 1997 Forum is scheduled for Feb. 16-19 in Acapulco, Mexico. Call ALCA at 800/395-2522 for details.

Tom Garber, Colorado Landscape Enterprises, Westminster, Colo., received ALCA's Landscape Service Award for 1995 and the Opryland Hotel, Nashville, Tenn., won the Landscape Contribution Award.

New professional resources available from the Professional Lawn Care Association of America include *The Handbook of Turfgrass Insect Pests and Weeds of Southern Turfgrasses*. Other publications cover topics such as crew leader training, writing maintenance specifications, selling to residential customers, determining job costs and motivation. For information, call PLCAA at 800/458-3466.

The 1996 Irrigation Association Expo is slated for Nov. 3-5 in San Antonio, Texas, and will feature special courses and programs sponsored by the Texas Turf Irrigation Association, among other groups. Contact IA at 703/573-3551 for information.

The Composting Council is now accepting research proposals for its annual conference Nov. 13-15 in Arlington, Va. "Mapping the Future" is the show's theme, which focuses on innovations in compost processing and use. Call 703/739-2401 for details.



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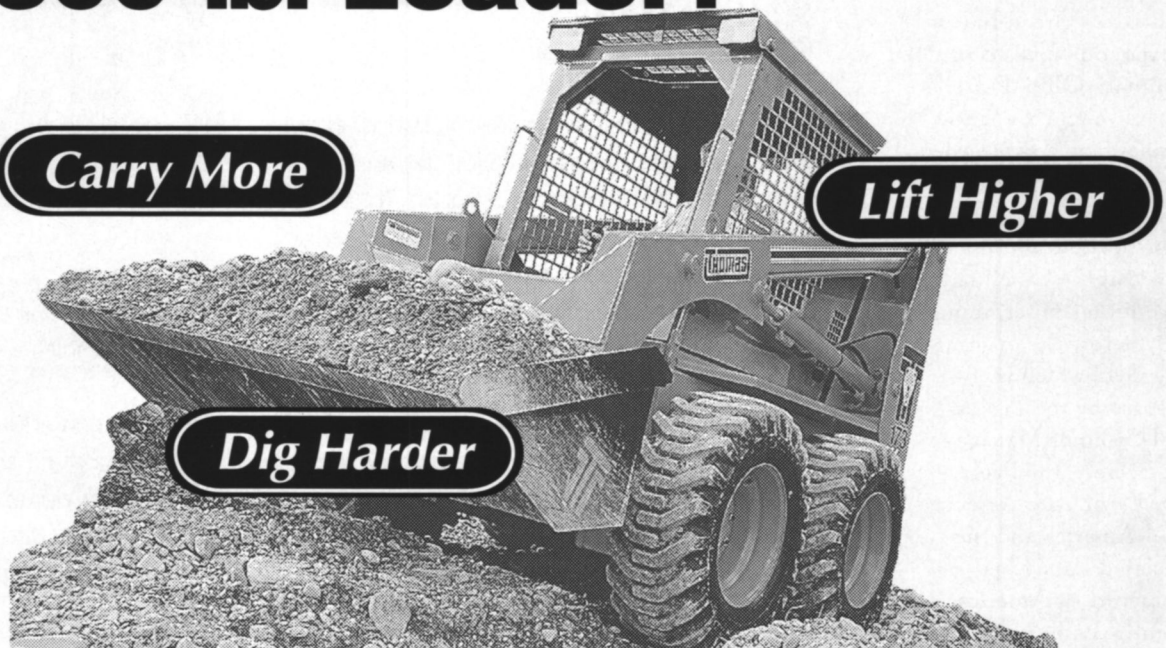


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MARKET TRENDS

(continued from page 8)

deliver the keynote address at this year's Green Industry Expo, on Nov. 18 in Cincinnati, Ohio. Farrell's story, "Give 'Em the Pickle," describes how he succeeded by giving an extra level of service to customers.

The keynote address will be given at the Cincinnati Convention Center, immediately before the opening of the GIE, which is co-sponsored by the Professional Grounds Management Society, the Professional Lawn Care Association of America and the Associated Landscape Contractors of America. The entire conference and

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TRANSITION

Gayle Jacklin, assistant vice president for Jacklin Seed, will lead a new market development project analyzing the company's current market coverage and distributors. The seed company also promoted **Rick Dunham** to vice president, marketing and **Hiromi Yanagisawa** to vice president, managing director of marketing.

Fred Langley joined the Responsible Industry for a Sound Environment as manager, state government relations. Langley works on a consultant basis for RISE, monitoring and analyzing state legislative and regulatory activities affecting the specialty pesticide industry.

Peter Ariens is national sales manager at Stens Power Equipment. Other new positions include: **Shari Weidenbenner**, customer service manager; **Lyle Lowery**, national accounts sales manager; **Mary Wortham**, sales administrative manager; **Craig Smith**, distributor sales manager; and **Tim Berger**, engineering services manager. **Ronald Zinser** is the new district sales manager covering portions of Illinois and Missouri.

Scott Turner is territory manager, Midwest region, for American Cyanamid. **Kit Rowe** joined the company as territory manager, Mid-Atlantic region.



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MARKET TRENDS

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show run Nov. 17 through 21. For more information, contact Eleanor Ellison at 770/973-2019.

PLANT MATERIALS FOUND NOT GUILTY

The Florida Nurseryman and Growers Association returned live plant material to county buildings in Lake County, Fla., convincing the county manager of the value of the plants as clean air machines for building employees and visitors. County Manager Sue Whittle had ordered plants removed, but agreed to

READER'S TURN

We welcome your opinions and ideas. Send your comments or suggestions to: *Lawn & Landscape*, 4012 Bridge Ave., Cleveland, OH 44113. Telephone: 216/961-4130. Fax: 216/961-0384.

I would like to respond to an article in your February Market Trends section. The article mentioned that manufacturers' shipments of walk-behind rotary turf mowers decreased 6 percent, according to the Outdoor Power Equipment Institute Inc. As a manufacturer of intermediate size rotary turf mowers, I would like to say the decrease in commercial rotaries comes entirely from small size units, mostly 21-inch push and self-propelled models. Intermediate walk-behind rotary turf mowers were up 5.1 percent in 1995.

As members of OPEI, we study these reports in great detail. They provide us with valuable insight toward trends that are so important to manufacturers. Here is what we conclude from the commercial walk-behind rotary turf mower report that we receive from OPEI.

Small size units, a category OPEI reports decreased 16.5 percent in 1995, are mostly 21-inch rotaries. The market, in fact, is growing for intermediate size units. This category (mostly 36- to 61-inch mowers) was up 5.1 percent for 1995, according to the complete OPEI report that we manufacturers receive. Another interesting fact the complete report tells is the dramatic increase in hydrostatic intermediate rotaries, which were up 47 percent in 1995. The dollar value of commercial walk-behind rotary turf mowers was up



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equipment from **Toro and Husqvarna.**

LIKE MOST LANDSCAPE CONTRACTORS, Cleary is trying to maintain steady progress and growth in his business as he diversifies. His company is now expanding to include some design and irrigation services. "I don't win many things," Cleary said. "You don't know how much I can use this. I'm stunned, and I'm in need of some equipment," he continued.

Rules & Regulations

1. NO PURCHASE NECESSARY
2. The contest is open to licensed lawn and landscape contractors, their employees and suppliers. Only persons who, as of the date of the prize drawing, are 18 years of age or older, with a valid driver's license, and are legal residents of the U.S. are eligible to enter. Entry cards must be fully completed.
3. This sweepstakes is not open to employees or the families of all sponsoring firms, *Lawn & Landscape* magazine or other GIE Publishing Co. publications, and affiliated companies.
4. Enter by completing and mailing the official entry form available in the monthly issues of *Lawn & Landscape* magazine, or receive a valid entry form by sending a postage paid envelope to Sweepstakes '96, c/o GIE Publishing, 4012 Bridge Avenue, Cleveland, Ohio, 44113. Not responsible or liable for lost, late, stolen, mutilated, illegible, incomplete, postage due or misdirected entries. **No mechanical reproductions permitted.**
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- Serviceman, Technician
- Company, Library copy only
- Other (please specify) _____

- Foreman
- Entomologist, Plant Pathologist
- Scientist, Researcher

3. How many of your employees are:

full time	1-5	6-10	11-15	16-25	26-45	46-75	76-100	101-150	150+
seasonal	1-5	6-10	11-15	16-25	26-45	46-75	76-100	101-150	150+
applicators	1-5	6-10	11-15	16-25	26-45	46-75	76-100	101-150	150+
maintenance	1-5	6-10	11-15	16-25	26-45	46-75	76-100	101-150	150+

4. What were your approximate 1995 revenues?

- ___ \$0 - \$50,000
- ___ \$50,001 - \$100,000
- ___ \$100,001 - \$250,000
- ___ \$250,001 - \$500,000
- ___ \$500,001 - \$1,000,000
- ___ \$1,000,000 +

5. Circle what percentage of your business is:

Commcl./Indstl.	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
Residential	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
Gov't/Municipal	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
Golf	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%

6. Circle what percentage of your business is:

Lawn Care	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
Maintenance Svc.	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
Irrigation Svc.	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
Pest Control	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
Installation	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
Trees & Ornmtl.	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%

7. Roughly, how much did your company spend on the following Turf Chemicals in 1995?

	\$0	\$1,001	\$5,001	\$10,001	\$15,001	\$25,001	\$35,001	\$50,001	\$75,001	\$100,001	\$150,001 +
Herbicides											
Insecticides											
Fungicides											
PGRs											
Biologicals											
Fertilizer/Herb.											
Fertilizer/Insect.											

8. Roughly, how much did your company spend on Ornamental Chemicals in 1995?

	\$0	\$1,001	\$5,001	\$10,001	\$15,001	\$25,001	\$35,001	\$50,001	\$75,001	\$100,001	\$150,001 +
Herbicides											
Insecticides											
Fungicides											
PGRs											
Biologicals											
Fertilizer/Herb.											
Fertilizer/Insect.											

9. Circle the number of mowing units your company operates in the following categories:

Walk-behind																				
Under 35"	1	2	3	4	5-6	7-9	10-14	15-19	20-24	25-49	50-99	100+								
35" - 39"	1	2	3	4	5-6	7-9	10-14	15-19	20-24	25-49	50-99	100+								
40" - 54"	1	2	3	4	5-6	7-9	10-14	15-19	20-24	25-49	50-99	100+								
Over 54"	1	2	3	4	5-6	7-9	10-14	15-19	20-24	25-49	50-99	100+								
Riding																				
Under 54"	1	2	3	4	5-6	7-9	10-14	15-19	20-24	25-49	50-99	100+								
54" or more	1	2	3	4	5-6	7-9	10-14	15-19	20-24	25-49	50-99	100+								

10. Circle the number of units your company operates in the following categories:

Trimmers	1	2	3	4	5-6	7-9	10-14	15-19	20-24	25-49	50-99	100+
Chain Saws	1	2	3	4	5-6	7-9	10-14	15-19	20-24	25-49	50-99	100+
Blowers	1	2	3	4	5-6	7-9	10-14	15-19	20-24	25-49	50-99	100+
Brush Cutters	1	2	3	4	5-6	7-9	10-14	15-19	20-24	25-49	50-99	100+
Edgers	1	2	3	4	5-6	7-9	10-14	15-19	20-24	25-49	50-99	100+
Hedge Trimmers	1	2	3	4	5-6	7-9	10-14	15-19	20-24	25-49	50-99	100+
Pruners	1	2	3	4	5-6	7-9	10-14	15-19	20-24	25-49	50-99	100+

1.1 percent, according to the 1995 OPEI report that we received.

This report is telling us something. Professional landscape contractors are trading their 21-inch mowers for more productive 36- to 61-inch mowers. Time is money to these professionals. The more they produce, the more they earn.

The dramatic increase in hydrostatic units is further proof. Professionals tell us that hydrostatic walk-behinds increase their production by 25 percent. Our sales of hydrostatic walk-behinds went through the roof last year; we couldn't keep up with the demand. We introduced the industry's first hydrostatically driven walk-behind mowers in 1987, and today we produce a significant percentage of hydrostatic walk-behinds sold.

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Rick Cuddihe, Sales Manager

Ferris Industries, Vernon, N.Y.

Editor's note: OPEI provides the media with an official summary, not a complete copy of the monthly report. We would like to be able to publish a more complete picture for our readers.

keep live plants in the buildings and provide employees with training in plant care, after FNGA held a news conference explaining the benefits of indoor foliage.

TEACHING TREE TECHS

The ACRT Institute of Arboriculture & Urban Forestry revised its Student Activity Guide for use by entry level tree workers. The 525-page book, *Working in Trees — A Self Directed Course & Reference Manual*, contains 29

MISSION STATEMENT:

LAWN & LANDSCAPE magazine delivers superior, total coverage of the continually evolving professional lawn and landscape contractor market, from in-depth business trends and technical research reports to market analysis and new product introductions. For 17 years, L&L has provided industry presidents, business owners and top-level managers the most up-to-date information needed to effectively run their businesses.

illustrated lessons on urban forestry training with corresponding written and performances tests. The curriculum ranges from basic coverage of ropes, knots and terminology and progresses into electrical

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▼ OPEI GOES ONLINE

The Outdoor Power Equipment Institute made itself more accessible to power equipment users by developing a site on the World Wide Web — CyberLawn USA — at <http://opei.mow.org>. The site provides various information about power equipment for downloading such as instructive guides on mulching, composting and garden tilling. Site visitors can even trim their own virtual turf aboard the OPEI CyberMower.

CALENDAR

To ensure that your meeting date is published, send an announcement at least 10 to 12 weeks in advance to *Lawn & Landscape*, 4012 Bridge Ave., Cleveland, OH 44113.

MAY 23 Tree Pruning Seminar, Buena Park, Calif. Contact: Ted Stamen, 909/656-3431.

MAY 24 Desert Horticulture Conference, Tucson, Ariz. Contact: J. Tipton, 520/621-1060.

MAY 31-JUN. 2 Christmas Decorating Conference, Pittsburgh. Contact: Kathy Bizon, 412/281-6352.

JUNE 1 New Jersey Society of Certified Tree Experts Seminar and Prep Course, Freehold, N.J. Contact: 908/591-1113.

JUNE 5 University of Massachusetts Turfgrass Research Field Day, South Deerfield, Mass.

Contact: 413/545-3066.

JUNE 12-14 National Lawn & Garden Trade Show, Atlantic City, N.J. Contact: 203/847-9599.

JUNE 13-16 Florida Nurserymen and Growers Association Annual Convention, Ponte Vedra Beach, Fla. Contact 800/375-FNGA.

JULY 10-11 Central Pesticide Institute, Carlisle and Hershey, Pa. Contact: Pennsylvania Landscape & Nursery Association, 717/238-1673.

JULY 28-30 International Lawn, Garden & Power Equipment Expo, Louisville, Ky. Contact 800/588-8767.

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USE READER SERVICE #17

IN BUSINESS...

The Toro Company's new Landscape Contractor Group, Minneapolis, has been formed to focus on the professional landscape market. It combines the line of Toro ProLine products and portions of its Commercial Division product line...Barenbrug USA, Tangent, Ore., has taken a majority share holding of TFI, Columbia, S.C., as well as Modern Forage Systems, located in Ferndale, Wash...Budd Seed Inc., Winston-Salem, N.C., agreed in principle to purchase Lofts Seed Inc., of Bound Brook, N.J. at the end of June. **U**

PERSONAL FINANCE

(continued from page 6)

Q. Why might I take the risks associated with stocks?

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Of course, while equities have the greatest potential for future gains among financial assets, they also entail greater risks than certain other investments.

Equity investments may not be suitable for all investors, and investors should fully determine their objectives, time frame and risk tolerance, among other factors, before proceeding.

Q. How do I participate as a part owner of the company?

A. Shareholders elect company directors and also may vote on certain significant actions. These items are generally voted on during the company's annual shareholders meeting.

You may also cast your vote by mailing in a proxy—a written authorization indicating how you would like to vote on the various issues. In reality, a small number of large shareholders can possess enough voting power to decide the outcome of an issue presented for the shareholder vote.

If an investor wants to challenge these stockholders, he or she would have to convince many other shareholders to vote in his or her favor by waging a proxy fight. Also, as a part owner, you receive regular updates on how the company is doing. — *John Houlihan, Dean Witter Reynolds, Melville, N.Y.*

Information and data in this report were obtained from sources considered reliable. Their accuracy and completeness are not to be deemed a solicitation on Dean Witter's part with respect to the purchase or sale of securities or commodities.

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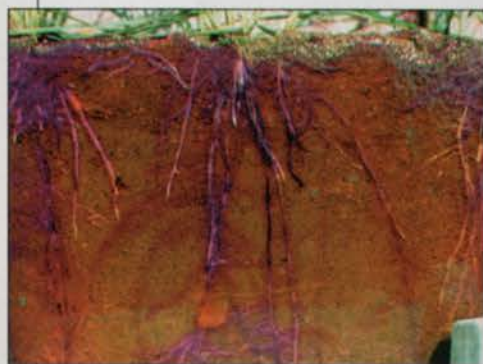


AMMONIUM SULFATE AFFECTS SUMMER PATCH CONTROL

THE IMPORTANCE of nitrogen fertilizer is well known for providing nutrients to plants — but there's more. The form of nitrogen nutrition used on

the turf can influence the susceptibility of turf to summer patch disease.

The cause of summer patch, *Magnaporthe poae*, is a newly described fungus that affects *Poa* and *Festuca* species. This fungus forms dark brown to black septate runner hyphae on roots, crowns and rhizomes of turfgrass hosts.



The purple color of these rhizospheres indicates a high pH resulting from calcium nitrate fertilizer (used with a nitrification inhibitor). A higher rhizosphere pH creates an environment that favors the growth of the summer patch fungus.

Symptoms first appear in early summer with circular patches or rings of wilted turf in Kentucky and annual bluegrass and fine fescue. Patches grow from 1 1/2- to 3 1/2-inches in diameter to more than 24 inches. Sustained heat (82 to 95 F) and frequent rain changes the patch color from a grayish-green to light straw. Diseased turf may also appear yellow over the whole area.

Summer patch can be differentiated from heat stress, insect damage or other diseases by examining roots, rhizomes and crowns for decay and brown to black runner hyphae.

The fungus moves by growing along roots and rhizomes, and spreads by

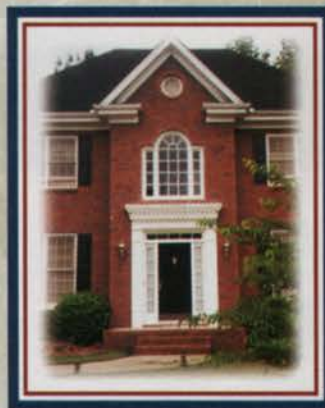
aerification and dethatching equipment and the transportation of infected sod.

ADAPTABLE ROOTS AND pH.

Rhizosphere pH is determined by the cation-to-anion uptake ratio, the root discharge of hydrogen ions or hydroxide ions, the soil buffering capacity and the plant species. Changes in the pH occur as a result of the net excretion of hydrogen or hydroxide.

Root systems can alter their environment in response to the form of nitrogen nutrition. Because nitrogen is the nutrient absorbed in the greatest quantity, absorption of ammonium or nitrate largely determines whether the rhizosphere pH

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USE READER SERVICE #20

will increase or decrease with nitrogen uptake.

The absorption of ammonium increases uptake of cations relative to anions and promotes hydrogen ion efflux from roots, which reduces the rhizosphere pH. Nitrate absorption has the opposite effect of ammonium — increased anion uptake results in the displacement of hydroxide ions, which raises the rhizosphere pH.

The acidic environment caused by ammonium fertilization reduces the incidence of summer patch disease because a lower pH environment discourages the growth of the fungus. Nitrate nutrition can worsen summer patch severity.

The lowered pH caused by ammonium fertilization also makes manganese more soluble. Soil acidification that is associated with ammonium nutrition can improve plant uptake of manganese in high pH soils, but further research will be required to determine the role of manganese nutrition to control summer patch.

SOIL MANAGEMENT. Current research at Rutgers University focuses on developing the best management practices to use for maintaining the optimum soil pH needed for quality turf and disease suppression. Early indications of this research suggest the following protocol:

- Apply ammonium sulfate frequently, but at low rates — about 0.25 to 0.5 lbs. N per 1,000 square feet every four

Improving drainage, reducing compaction and performing aeration and syringing to reduce heat stress will aid in controlling summer patch.

weeks during cool weather.

- Take soil samples about twice a year to check the soil

pH in the 0- to 2-inch surface layer.

- Apply lime as needed to maintain soil pH near 6.0.

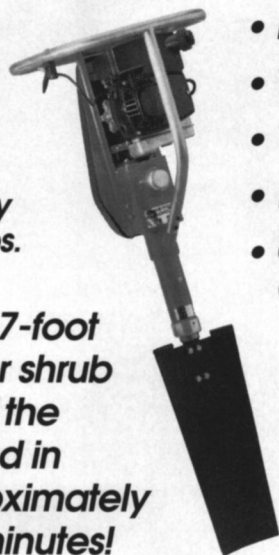
• Improving drainage, reducing compaction and performing aeration and syringing to reduce heat stress will aid in controlling summer patch.

• Overseed affected areas with mixtures or blends of resistant turf species, such as bentgrass, perennial ryegrass or tall fescue. — *Joseph Heckman & Bruce Clarke*

Dr. Heckman is specialist in soil fertility, Rutgers Cooperative Extension; Dr. Clarke is director of the center for turfgrass science, Rutgers University, Rutgers, N.J.

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USE READER SERVICE #22

Credit: Dave Huntsman,
Versailles, Ky.

Hillenmeyer Nurseries

HEADQUARTERS: Lexington, Ky.

FOUNDED: 1841

OWNERS: Stephen and Chris Hillenmeyer

PRIMARY SERVICES: Two retail garden centers accounting for 25 percent of sales; a 250-acre nursery and greenhouse facility that mostly supplies in-house needs; and a landscape division that includes commercial and residential maintenance and design/build services that account for 75 percent of sales.

NUMBER OF EMPLOYEES: 110 year round, 160 peak season

1995 SALES: \$7.5 million

1996 PROJECTION: \$8 million

Executive Summary

THE CONCEPT: To be central Kentucky's best full service nursery and landscape company by providing a quality product and dependable service with knowledgeable, well trained employees.

FUTURE CHALLENGES: Finding and keeping the best employees, working with heavy government regulations and maintaining and growing the market share.

The Owners

STEPHEN AND CHRIS HILLENMEYER

BACKGROUND: Stephen Hillenmeyer, 38, is president of the company. Chris Hillenmeyer, 41, is secretary of the company. Both studied horticulture at the University of Kentucky, Lexington, grew up in the family business and are the fifth generation of the family to own the business.

EQUITY HELD: 50-50 split



O

NE of the most difficult roles that company owners must assume at some point is to be the leaders of change. It's especially tough when the company is 155 years old, like Hillenmeyer Nurseries, Lexington, Ky.

Since taking over 12 years ago as the fifth generation of Hillenmeyers to own the company, Stephen and Chris Hillenmeyer have expanded from a retail nursery and design/build-oriented business into landscape maintenance, design and construction. They've learned much from successes and mistakes along the way.

There were plenty of pitfalls — buying out a family member, establishing trusting relationships with employees, creating a reliable budgeting system and sticking to the “master plan” have all been difficult and painful experiences for the Hillenmeyers — but the company is meeting its profit goals and communicating with employees better than ever.

From \$2.5 million in retail garden center sales in 1984, Hillenmeyer Nurseries grew to \$7.5 million in retail, landscape maintenance, design and construction sales last year.

FAST CHANGES. In an economic era dominated by mergers and takeovers, it's hard to find companies as old as Hillenmeyer that resemble its original concept.

Hillenmeyer was founded in 1841 as a grower and shipper of bare-root plant material, and one of its biggest customers

was Sears, Roebuck & Co. Hillenmeyer filled orders for plant material that customers ordered from the Sears catalog.

The company's first move toward diversification was opening a retail garden center in the late 1950s and taking on a maintenance contract with an IBM typewriter plant a few years later. The young Hillenmeyers' father, Louis Jr., and his brother Robert, engineered the expansion, but the company stood pat through the 1970s and early 1980s when Stephen and Chris were coming of age.

In 1984, two years after their father's death, Stephen and Chris, along with their brother Louis III, bought out their uncle and looked at opportunities to expand the business.

They opened up a second retail garden store in 1984 on the opposite side of Lexington to take advantage of growth on the south side of town and to better serve loyal customers. They also began actively seeking commercial landscape and construction projects.

Their work paid off in bottom line sales, which grew to \$6 million in 1992.

STORM CLOUDS AHEAD. Sales were strong, but internally, Hillenmeyer Nurseries was having some problems. One of the most difficult issues in a family business is keeping harmony when each member has his own ideas about the future. Ultimately,

(continued on page 20)

After three years of training in managing people and profits, Hillenmeyer Nurseries is prepared to control its own destiny.

By Paul Schrimpf

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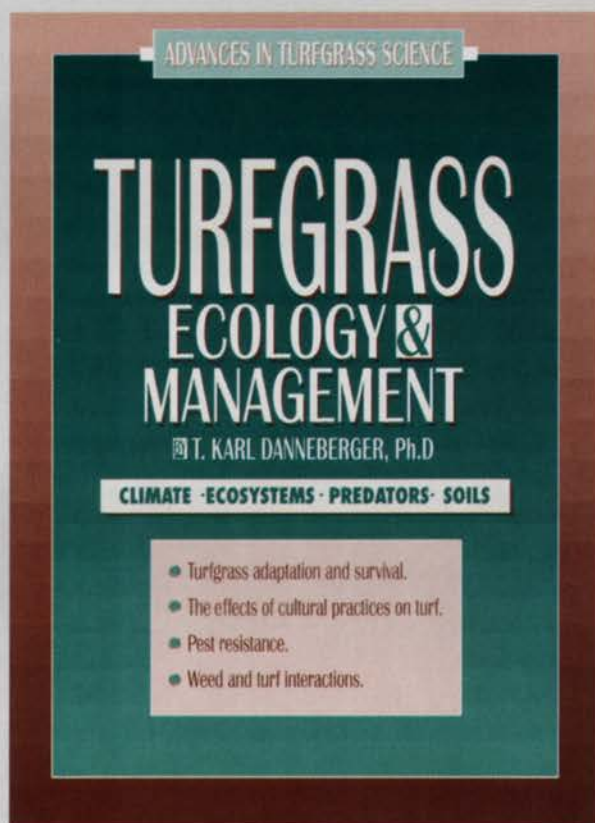
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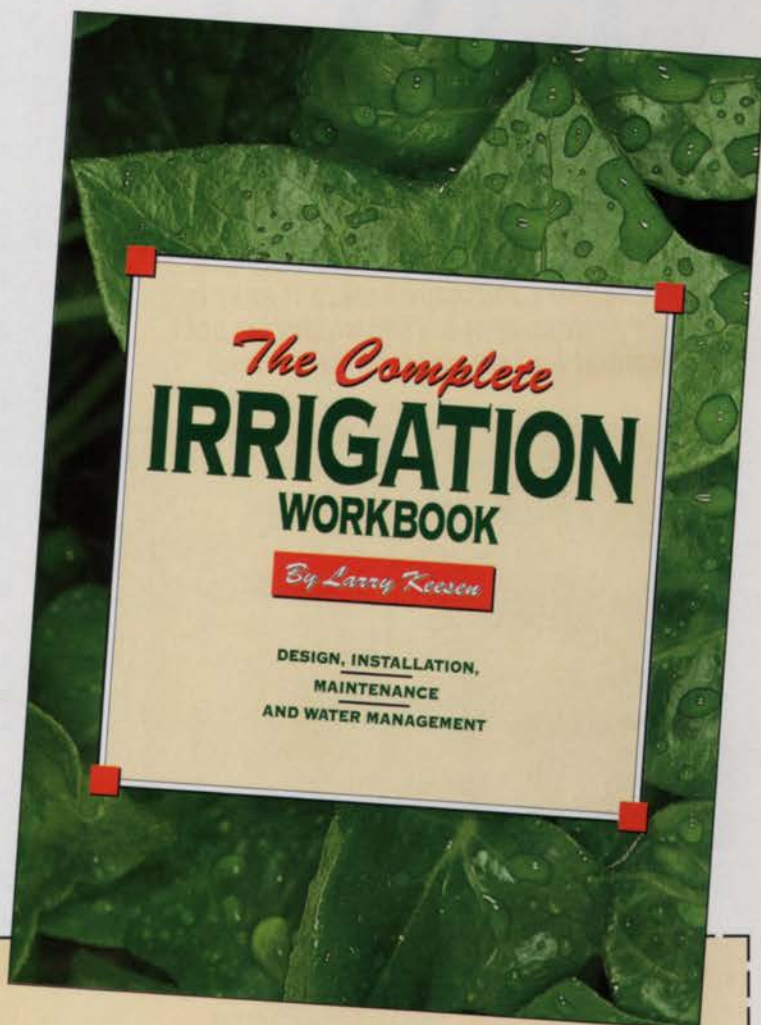
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USE READER SERVICE #23

cover story

(continued from page 23)

it lead to Louis being bought out by Stephen and Chris.

"We all worked hard to grow the company together, but we eventually became too focused on our individual departments," said Stephen. "The company began to suffer because we weren't working together."

"We began to build a lot of walls within our company," added Chris. "Our landscape department stopped working with our nursery, and the nursery quit working with the garden center. We had all these walls that kept us from working as a team. We weren't working on the same cylinders for a while and it definitely had an impact on us."

After the buyout, there were some deep wounds to mend within the company. A slightly flatter economy in 1992, coupled with the emotions and lack of trust the employees had for management would prove to be one of the greatest hurdles for the Hillenmeyers in the months and years following the buyout.

NOT ALONE. Stephen and Chris admitted to themselves early on that they could not regain full control of the company without some outside help. They hired management consultant Linda Reed to help them work on company teams and trust building.

"We had training in horticulture, but where do you go to school to learn how to work with people?" asked Stephen.

She first met with Stephen and Chris to get them to focus totally on the company's direction and to commit to that direction. "It sounds pretty simple," said Chris, "but it's amazing how that doesn't happen with a lot of companies."

"The process started with us," added Stephen, "how to make the company better, what we wanted to do. When we agreed to it, the next step was to survey managers and employees for input. They told us the critical things that needed to change."

To make employees feel less threatened and more free to open up, Chris and Stephen allowed Reed to meet with the employees alone without key managers present. The managers were given filtered information from the meetings with Reed.

"The employees knew they could say whatever they wanted to there without being identified," noted Chris. "She

Hillenmeyer's three divisions allow the company to cross train employees in different areas of business, reducing seasonal hiring.





Future growth at Hillenmeyer Nurseries is expected to come largely from its landscape maintenance and design/build divisions.

attributed problems or feelings to the particular division, such as, "The nursery division feels that. . . We wanted to create a safe environment that would allow input."

The goal from the outset was to create policy that would allow the Hillenmeyers to empower employees to make decisions based on the company guidelines. Stephen and Chris would implement and adjust the policy as needed, while the employees would carry it out.

The initial meetings revealed the company's primary problems, which Stephen and Chris addressed first. "You can't change everything at once," said Stephen, "so we focused on pressing problems and solved one problem at a time. Slowly but surely, the employees saw we were doing what we said we would do, and that built their trust."

Another element that was essential to making the deal work with the employees was the attitude of communication and trust in the brothers' relationship with each other. "It all starts with Chris and me," explained Stephen. "If I do something he doesn't like and he asks someone in accounting, 'Now, why did he do that?' we end up undermining each other. We have to make sure we project the relationship, and then coach the employees to do that with each other."

Today, the Hillenmeyers run company meetings without the consultant, and all issues are put out on the table at staff meetings every two weeks in no-holds-barred sessions. A problem between managers about interdepartmental hiring was solved in the course of a recent meeting, rather than left to fester with noncommunicative managers.

"This is nothing major to us now, but two years ago this would have gone on for weeks or months and all sorts of walls would have gone up between managers and departments," said Stephen. "So we are constantly trying to keep the floor open."

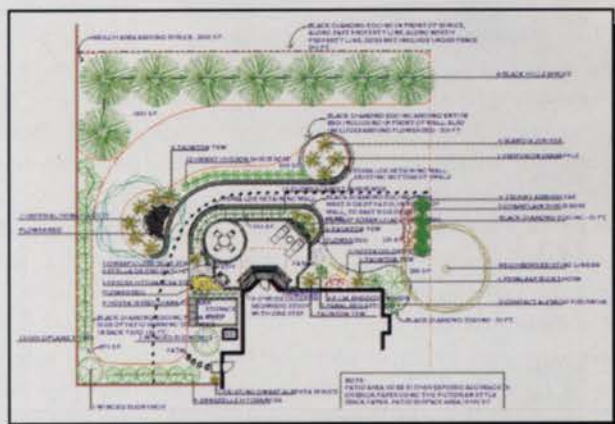
MANAGING PROSPERITY. During their company's period of strong growth, the Hillenmeyers were working hard and doing business but not really tracking the numbers.

That worked for the prosperous times, but when the economy flattened in the early 1990s, they lacked the financial tracking that could help them make future decisions. Again, they turned to an industry consultant, Frank Ross, for help.

"At the point we started, we weren't doing any budgeting,"

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USE READER SERVICE #24

admitted Stephen, "but now we are very strong in this area. Just the basic principles of setting up a budget and keeping expenses in line lets you know what you can and cannot do and provides the basis for your operation.

"Now, employees know the sales numbers and they know what our profit is. The managers see all the details — it's in front of them," he continued.

Stephen said the company was able to get by without formal budgets, but it made planning for the future nearly impossible.

"It's not that you can't do well without a budget — there are a lot of companies that are getting by without one," explained Stephen. "But until you know where the dollars are coming from, you can't plan for anything. When we were doing well, we really had no idea what we

were doing or what we were doing to cause the sales increase. We just kept working. Now, the focus is on margins and how to increase them. Not every budget works out perfect but we come pretty close to the target."

It was difficult to get the managers to do budgets at first, but they have seen the value of an accurate balance sheet over the last three years. Stephen and Chris meet with the managers monthly to review the numbers and make sure they are on track.

They also learned to budget realistically. The first year, 1992, the company just made the budget, and modest increases followed in subsequent years. This year, Hillenmeyer Nurseries is on track for a 12 percent increase in overall sales.

"It didn't happen like we wanted it to

the first couple of years, but we are on track to do very well this year," said Stephen. "It takes a long time to get the ship turned around — it's been a three-year process, and we've moved from a survival mode to a growth mode — and it sure is a lot more fun."

REWARDING PEOPLE. Dealing with 2 percent unemployment in a city of 225,000 people means that there is virtually no pool of employable people that Hillenmeyer Nurseries can go to on a regular basis. It's no wonder that Stephen and Chris call their people the company's number one product.

The brothers go to great lengths to ensure that employees are happy and challenged. Stephen discussed this in a recent interview:

(continued on page 93)

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USE READER SERVICE #27

T

Many transplant failures can be avoided with the addition of mycorrhizal fungi, a beneficial material that helps plants survive stress and thrive in their new environments.

by Donald Marx

Mycorrhizae: Rx for Healthy Transplants

TRANSPLANT failure happens. When it does, we often say, "You win some, you lose some." The truth is that transplant failure of trees, shrubs and ornamental plantings is expensive in time, labor and customer dissatisfaction.

The solution lies beneath our feet with fungi that form mycorrhizae with roots. These beneficial "fungus-roots" have developed a natural survival strategy that helps plants survive stress, and that strategy can be used today.

Mycorrhizal fungi are essential to plant growth. Found in healthy soil, these organisms colonize the roots of 99 percent of all plants. They help the plant take up soil nutrients and water, and in return, the plant supplies the mycorrhizae with a steady source of sugars. When they do not colonize plant roots, most plants cannot thrive and transplant failure becomes a certainty.

Recently, several companies have made mycorrhizal fungi commercially available as inoculants. Do these products work and are they instrumental in slowing the failure rate of transplanted plants? The answer is yes.

INTENSIVE CARE STOCK. To produce large numbers of plants, nurseries often raise their stock in



(Above) Hyphal strands of *Pt* ectomycorrhizae form a "secondary" root system which grows from the ectomycorrhizae into large soil volumes expanding the feeding capacity of the plant's root system. (Left) Examples of ectomycorrhizae (light yellow beige-colored forked roots growing off the woody roots). Ectomycorrhizae benefit conifers and many hardwoods.



sterile soils. This artificial ecosystem creates an intensive care environment. Like patients in a hospital ward, the plants must be provided with virtually all of their biological needs, which under normal situations would be provided to them in nature.

Trees and other plants transplanted from the nursery to the urban landscape must immediately fend for themselves. As a matter of practicality, landscape contractors cannot maintain the intensive care environment that supported these plants in the nursery.

Although we try to lessen the shock of transplanting as much as possible, newly transplanted plants undergo extensive stress. They must immediately rejuvenate their root systems (as much as 90 percent of plant roots are trimmed to package and ship them). Until the root system is reestablished in the new soil environment, the plant cannot effectively ward off the damaging effects of this stress.

NATURAL SURVIVAL STRATEGY. The biology of the soil, physiology of plant roots and symbiotic relationship between plants and mycorrhizal fungi

(continued on page 35)

Clear *Sending a* MESSAGE

M

other Nature annually takes its toll on landscapes and nurseries across the country. Just ask any professional contractor performing services to residential and commercial properties in 1995.

Weather withstanding, it's up to the professional to find a solution to the various infestations that invade their customers' properties. Or, more ideally, control the unwanted fungi before they're visible in the landscape.

To accomplish disease control in turf and ornamentals, an effective control program needs to be established. A program that provides extended control with limited disturbance to the plant, and one that maximizes applicator mixing ease and tank-mixing compatibility.

Contact fungicides are effective in treating turf and ornamental diseases in the landscape on a short-term basis; or for as long as the product remains on the surface of the plant. More recently, systemic fungicides, such as Banner® from Ciba Turf & Ornamental Products, Greensboro, N.C., have become available to the landscape contractor for long-term control of diseases.

*Odorless, More
Flexible Disease Control*

How **BANNER[®]** **MAXX[®]** Works

B

anner MAXX is a revolutionary water-based Banner formulation offering the professional lawn and landscape operator qualities previously not available in fungicide formulations.

The new formulation is a microemulsion concentrate (MC) in which the active ingredient, commonly known as propiconazole, is formulated in a matrix of proprietary surfactants and water to form submicron size — about 0.1 micron — droplets. Because the formulation is water based, Banner MAXX is a mixable blend that is extremely uniform and stable when added to water in a spray tank.

A microemulsion contains very fine droplets of surfactant in which the active ingredient and solvent are suspended. Since the droplets are extremely small, a microemulsion is transparent to the naked eye appearing as a solution. However, when a light beam is passed through, the path of the beam becomes visible from light bouncing off fine particles, confirming that the formulation is a microemulsion.

The extremely small particle size combined with the product's unique properties enables Banner MAXX to stay in a water matrix for many months. For instance, if an operator must halt an application due to weather conditions, he can later resume his service call without fear of the product settling out in the spray tank.

Because the particle size is so small, the product remains completely suspended in its host solution. This differs from the typical powder or dry flowable particle — about 25 microns in size — which generally require constant and significant agitation to remain in suspension. If agitation is not maintained or is inadequate, the particles will separate and settle out in spray tanks, leading to potential misapplications.

As a systemic, Banner is absorbed into the plant's system where, unaffected by outside disturbances, it can continue to control disease for a longer period of time, resulting in reduced labor costs. Additionally, Banner is labeled for different treatment levels, depending on the time of year and duration of control desired.

Further enhancing the product's current reputation for disease control in turf and ornamentals is its increased flexibility and user friendly formulation. Now available as Banner[®] MAXX,[®] the product features a revolutionary new formulation — a microemulsion concentrate (MC) — that is a clear, ultra stable liquid, which mixes completely with water.

The MC eliminates the use of petroleum solvents that act as a carrier in other formulations. As a result, Banner MAXX has little odor and it will not clog filters and screens or settle to the bottom of the spray tank, which is particularly important to landscapers.

"Landscapers generally use small tanks without agitation capabilities. By the time they get to the end of the tank the stuff is settling out. With Banner MAXX, you mix and it's done," said Doug Houseworth, Ph.D., manager, technical support for Ciba.

Banner MAXX treats 18 turf diseases including dollar spot, spring dead spot, summer patch and gray leaf spot on warm- and cool-season turf varieties. Three new turf diseases — take-all patch, necrotic ring spot and Fusarium patch — have recently been added to the label. On ornamentals and other landscape plantings, the product controls numerous diseases such as powdery mildew,



Banner MAXX (left) is a water-based fungicide that forms an ultra stable suspension, unlike powders (right) or emulsifiable concentrates, and is widely compatible in a tank mix.

rust, leaf spot, scab and anthracnose.

"We see the MC really helping out in landscape ornamentals. About 40 new plants are now in the process of being added to the Banner MAXX label,"

Further enhancing Banner's current reputation for disease control in turf and ornamentals is its increased flexibility and user friendly formulation.

Houseworth said. "We see nursery and ornamental contractors using the product which is available in quart and gallon size containers."

BENEFITS OF MICRO-EMULSION CONCENTRATES

A microemulsion concentrate, or MC, offers the professional user new and convenient fungicide technology to tackle disease situations. Among the benefits of the new technology are:

- *Physical Appearance:* MC is a transparent liquid that does not contain a hydrocarbon solvent carrier, meaning it's

Conquering DISEASE



The beauty of flowering crabapple, dogwood, crape myrtle and red-tip photinia have made them extremely popular in many regions of the United States — which almost makes the diseases that destroy them among the most dreaded.

Controlling powdery mildew, leafspot, scab, rust and dogwood anthracnose poses significant maintenance and labor problems for professionals who provide disease control on a program.

Banner MAXX has been proven effective in the control of these diseases and provides the additional advantage of flexibility in application rate and concentration.

Listed below are the label specifications for using Banner MAXX to control disease on these ornamentals.

SPECIES	DISEASE	RECOMMENDED RATES AND TIMING
Crabapple	Scab (<i>Venturia inaequalis</i>)	Apply 2 fluid ounces per 100 gallons every 14 days. Begin at green tip.
Crabapple	Rust (<i>Gymnosporangium juniperi-virginianae</i>)	Apply 2 fluid ounces per 100 gallons every 7 days. Make 3 applications beginning at green tip.
Crabapple	Powdery Mildew	Apply 6-8 fluid ounces per 100 gallons every 14 days.
Crape Myrtle	Powdery Mildew (<i>Erysiphe lagerstroemia</i>)	Apply 16 fluid ounces per 100 gallons every 21 days.
Dogwood	Anthrachnose (<i>Discula</i> spp.)	Apply 2-4 fluid ounces per 100 gallons every 14 days, or 8 ounces per 100 gallons every 28 days.
Red Tip Photinia	Leafspot (<i>Fabraea maculata</i> syn. <i>Entomosporium maculatum</i>)	Apply 12-20 fluid ounces per 100 gallons every 7-14 days.

essentially odorless. Powders or dry flowables may be odorless, but often dusty.

- **Tank Stability:** Banner MAXX disperses readily in water without strong agitation. Laboratory testing determined that there is no separation of product from water for up to 52 weeks.

Banner MAXX will not settle out when the tank is left idle, allowing the spray technician to complete an accurate application during favorable weather conditions. Powders and dry flowables can form significant sedimentation within two hours. Such formulations generally are not conducive to sitting idle in a tank.

- **Tank residue:** MC formulations are clean and virtually no residue remains in the tank after application. After multiple instances using powders and dry flowables, a buildup can occur in the tank, lines and nozzles.

- **Spray nozzle wear:** MC formulations form stable suspensions. The ad-

vantage is no abrasion to spray nozzles and lines. Powders and dry flowables are typically hard particles ground and blended with other solid substances.

Subsequently, the constant friction that suspended solids subject spray nozzles to can wear out the nozzles over weeks and months.

Tank MIXING



To use Banner MAXX, fill a spray tank one-half to three-fourths full with water, add the proper amount of Banner MAXX, then add the rest of the water. Provide sufficient agitation to maintain a uniform mixture.

For broader spectrum control, Banner MAXX can be tank mixed with other fungicides. It also is compatible with numerous herbicides and insecticides. Banner MAXX is available in quarts, one-gallon containers and 15-gallon returnable/refillable TurfPak™ units.

Banner MAXX rates are the same as the original Banner EC formulation. For turf diseases, varying rates of 0.5 to 4 ounces per 1,000 square feet are recommended, depending on the disease. For ornamental and nursery use, 2 to 16 ounces per 100 gallons of water is recommended. See the Banner MAXX label for specific rates.

Tackling TURF DISEASE with Banner® MAXX®



One of the most difficult lawn maintenance problems in the greater Houston area is gray leafspot on St. Augustinegrass. Its ability to plague a yard over and over again makes it a big headache to treat.

Bob James, a field manager for one of the three TruGreen/ChemLawn offices in the greater Houston area, estimates that at any given time up to 75 percent of the lawn maintenance customers served through his office have yards affected by the gray leafspot. "It's a monster down here in Harrison County. We're dealing with an aggressive disease, especially in shady St. Augustinegrass areas," James explained.

With 11,000 residential customers, callbacks on gray leafspot is an expensive proposition. It's the primary reason why James gave Banner a try four years ago. They started using Banner experimentally on a limited number of customers, and found control lasted between two and three weeks, depending on weather conditions.

Gray leafspot generally appears with the first warm, moist days of late March and early April. Technicians will apply Banner at a rate of 2 ounces per 1,000 square feet of turf. Follow-up applications are usually made on an as-needed basis, but average about three weeks between treatments. Moist weather and customer errors, such as forgetting to turn off the sprinklers during or after rainy weather, can hamper the effects of the Banner treatment, James said.

The result has been happier customers and an average of 25 percent fewer callbacks since Banner was introduced. "No one makes any money on callbacks, and customers want problems solved on the very first visit. Banner addresses both those issues." James said.

NIPPING DISEASE IN THE BUD

The earlier in the year dogwood anthracnose and other ornamental diseases are brought under control makes life a lot easier for Jim Cregar, project manager for horticultural services for Crowley Lawn Service Inc., Cleveland, Ohio.

That means catching target ornamentals when they're just beginning to open up.

"If you catch potential problems early then hopefully things will cooperate enough for the remainder of the season -- under a watchful eye, of course," he said. "I'm a believer in fungicides. If you get a good start, the rest of the year is a whole lot easier."

The systemic nature of Banner gives ornamental contractors extra insurance throughout the busy spring when juggling application schedules keeps crews on the run.

Cregar used Banner MAXX last year and was impressed with the control it provided.

"Any time you can get away from a powder of any kind it's a plus, especially from drift."

• *Equipment corrosion:* MC formulations do not contain a petroleum solvent carrier, therefore equipment corrosion is not a concern. Emulsifiable concentrates can be very corrosive to spray equipment, valves and seals.

• *Tank mix compatibility:* MC formulations provide uniform suspensions that offer good tank mix compatibility characteristics. For example, if Banner MAXX were added before a WP it would still provide a uniform tank mix. If a WP and EC were added like this, the mixture would coagulate. While changing the sequence of addition is not recommended, this points out the extremely uniform characteristics of Banner MAXX.

DEFEATING DISEASES

Controlling diseases in turf and ornamentals means significant maintenance, labor and, often, heartache for professionals providing a disease control program. Instead of letting diseases get the best of you, it's best to prepare a smart, flexible application program for your customers and prized ornamentals.

Banner MAXX has proven effective in the control of troublesome diseases including powdery mildew, leaf-spot, scab, rust and dogwood anthracnose on ornamentals and other landscape and nursery plantings. ■

Banner MAXX is available in one-gallon containers (right), 15-gallon returnable/refillable turfPak™ units and quarts (not pictured).



Important: Always read and follow label instructions before buying or using these products.
CGA 730-00056A

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mycorrhizae

(continued from page 30)

evolved millions of years ago in natural forests. The forest is a highly competitive ecosystem, and plants must endure tremendous stresses to survive.

Trees with the most expansive root systems have survived at the expense of those with fewer roots. The mutually beneficial association between plant roots and mycorrhizal fungi are responsible for this survival by the increase in nutrients and water the fungi are able to supply. The soil stresses plants encounter in the forest are managed by the mycorrhizal relationship.

Mycorrhizae occur as three types, which are symbiotic on different plants:

- *Endomycorrhizae* (which benefit maples, gums, ash, turfgrass, shrubs and most ornamental plants) enter the plant root and colonize the root cells inside.

- *Ectomycorrhizae* (which benefit conifers and many hardwoods) grow only between the cells and over the surface of the roots on the outside.

- *Ericoid mycorrhizae* (which benefit azaleas, rhododendrons, blueberry, cranberry and laurels) share distinc-

Benefits of Mycorrhizae

- Survival mechanism for plants.
- Increases stress resistance.
- Increases plant availability of nutrients.
- Increases plant availability of water.
- Increases drought tolerance.
- Increases plant viability in distressed soils.
- Decreases infection of roots from certain soil-borne disease organisms.

tions of both endo- and ectomycorrhizae.

When mycorrhizal fungi colonize a host plant root, their strands of hyphae (thread-like feeding structures) extend out beyond the host's roots and function like syphons absorbing nutrients and water. These feeding strands can extend up to 30 feet away and a few of them can be 100 times larger than those of a nonmycorrhizal plant's entire root system. A well colonized plant root sys-

Overview of Mycorrhizal Types

MYCORRHIZAL TYPE	NUMBER OF KNOWN FUNGAL SPECIES	HOW IT COLONIZES	PERCENT PLANT SPECIES IT BENEFITS	EXAMPLES OF PLANTS THAT BENEFIT	MARKET AVAILABILITY
Endomycorrhizae	Most wide-spread; 150 species identified worldwide.	Colonizes the inside of plant root cells.	The most abundant fungi in the soil. Occurs on more than 85 percent of the 300,000 species of green plants.	Turfgrasses, most ornamental plants, hardwoods, fruit and nut trees and shrubs.	Yes
Ectomycorrhizae	2,100 species identified in North America, more than 5,000 worldwide.	Colonizes the outside of plant cells and the root.	Approximately 10 percent of plants, including more than 2,000 trees.	Conifers and hardwoods such as beech, birch, eucalyptus, fir, oak and willow.	Yes

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LAWN & LANDSCAPE • MAY 1996

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USE READER SERVICE #30

mycorrhizae

tem may be so covered with mycorrhizae that it doesn't even touch the soil.

The benefits are many. Mycorrhizal roots are better able to extract nutrients from the soil that are not normally available to the plant. The multibranching habit and growth of hyphae out into the soil increases the uptake of water and nutrients, especially phosphorus, by the root system. Because of their association with mycorrhizae, plants become more tolerant to drought, high soil temperatures and certain soil toxins. Mycorrhizae also form a physical barrier around feeder roots that reduces infection by some soil-borne pathogens.

MYCORRHIZAE RX. More than 30 years of extensive studies have shown that mycorrhizae protect against certain feeder root diseases, increase longevity of root function and increase a plant's ability to deal with stress.

Sea World of Ohio in Aurora is a case in point. Its planting materials must work hard; they must withstand heavy traffic and be especially hardy to avoid replanting during tourist seasons.

In 1995, the park created a New England shoreline to complement its new Dolphin Cove exhibit. The landscape team had 26 days before the exhibit opened to plant 181 trees and twice as many shrubs, ground covers, perennials and grasses.

To reduce transplant losses, which the park projected could reach 30 percent, Sea World used a transplant mix and injectable products, which contained both endo- and ectomycorrhizal fungi. At season's end, all trees had survived and were growing vigorously. The materials are now part of Sea World of Ohio's grounds maintenance protocol.

The toughest test for mycorrhizae lies in land reclamation, where these fungi have become important factors in transplant success. More than 190 years of intensive mining has left millions of acres needing reclamation. Tree planting has been an attractive option for revegetation, but planting routine nurs-

(continued on page 38)

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DYRENE is an effective contact fungicide specifically for the prevention of leaf spot, snow molds, rhizoctonia brown patch, sclerotinia dollar spot and copper spot. And since DYRENE is in a fungicide chemical family that's different from most other fungicides, it's the ideal choice where rotational fungicide programs may be required for successful disease management.



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- DYRENE 4 in 2 1/2 gallon jugs

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For more information about DYRENE and where you can get the professional fungicide products you need, call The Andersons at 1-800-225-ANDY.



The Andersons



(continued from page 36)

ery seedlings has been unsuccessful.

Abandoned mining sites are arguably the worst of distressed soils. They are often low in pH (3 to 4), have high temperatures (113 F or higher), low fertility, poor water storage and often

contain toxic minerals. This situation routinely kills most trees. The Ohio Abandoned Mineland Reforestation Program found that plantings of routine seedlings averaged less than 50 percent survival, requiring more than 75 percent replanting of their sites.

Root Response Results

Average root response of eight tree species four months after transplanting (ball & burlap) and treating with mycorrhizal inoculants at Sea World of Ohio.*

	FEEDER ROOT RESPONSE (GM)	ROOT FEEDING CAPACITY
Inoculants	295	128
No treatment	140	30

**Blue spruce, Norway spruce, concolor fir, Austrian pine, limber pine, pin oak, larch and paper birch.*

An ectomycorrhizal fungi, *Pisolithus tinctorius* (*Pt*), was discovered living in small populations of trees in the harshest of mineland soils. In 1981, the agency began planting 5 million *Pt*-inoculated seedlings to stabilize 3,000 acres of unreclaimed sites. The survival of custom grown *Pt*-inoculated trees has averaged more than 85 percent.

USING MYCORRHIZAE. Most urban soils are rarely as distressed as those of mineland soils. But even urban soils with naturally occurring mycorrhizae may not be of immediate help to ensure transplant success. Note that mycorrhizae do not stimulate growth as much as they *eliminate* inhibited growth. By helping plants survive stressful situations, mycorrhizae helps plants to grow to their full potential.

Plants should be inoculated prior to transplanting, so that mycorrhizae can immediately begin to develop on new roots. Newly planted trees, shrubs and ornamental plantings must quickly establish a feeder and mycorrhizal root system to begin getting their biological requirements from the new soil.

Landscape contractors can use commercially packaged mycorrhizal fungi to inoculate plants prior to and during transplanting. These products are available in different formulations and can be applied by spray, drench, injection or mixed in the backfill.

Mycorrhizae are somewhat plant species-specific, so select the product that is beneficial to your plants. Most com-

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panies list the appropriate plant species on their labels. Ectomycorrhizal fungi were the first inoculants available commercially, and recently endomycorrhizal fungi have become available. These two types of mycorrhizae will benefit 95 percent of our commercial plant species.

"Cocktail" mixes that contain up to five different mycorrhizal species are available for use on almost all plants. The third type, ericoid mycorrhizae, is not yet available but is being tested.

Inoculating plants is extremely cost effective, considering the stress protection provided by fungi and the cost of failure. Inoculation of a single tree of 1-inch caliper or three 1-gallon containerized plants costs less than \$1.50. Generally, plants need to be inoculated only once in their lifetime.

To encourage mycorrhizal colonization of roots of newly transplanted plants, remember the following:

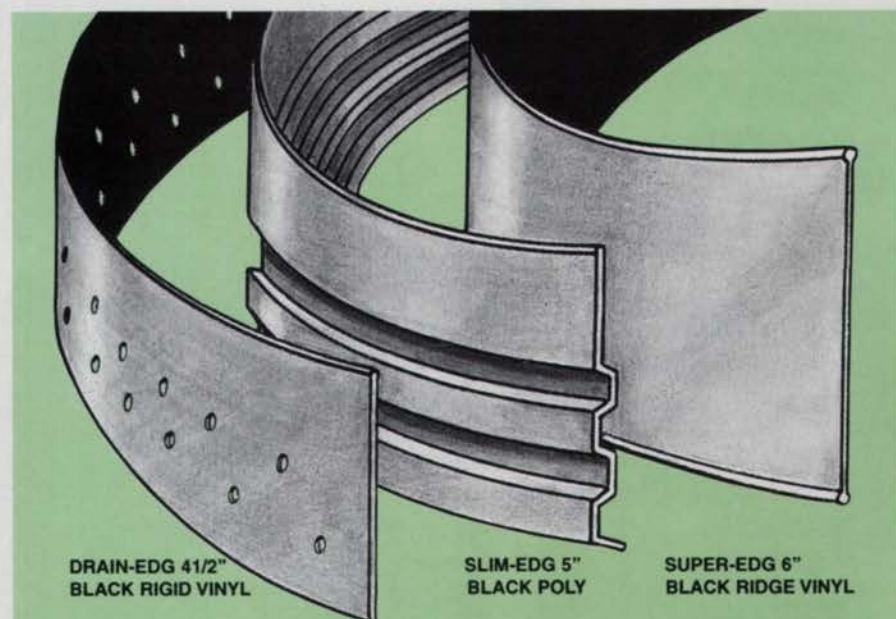
- Maintain adequate water during the plant's establishment period. Too much water prompts plants to grow white succulent roots that rarely develop mycorrhizae.
- Fertilize adequately. If the plants are not overfertilized, mycorrhizal colonization quickly catches up to growing roots.
- Select fungicides carefully. Systemic fungicides are best avoided when using mycorrhizae, especially those labelled for rust diseases.
- Avoid soil compaction, which can reduce the fungi's access to oxygen and moisture and make it virtually impossible for it to spread, gather and move nutrients to its host.
- Mulch whenever possible. Decomposing mulch increases organic matter in the soil and helps maintain favorable soil moisture levels.

Mature trees may also benefit from mycorrhizal inoculation. Situations where trees are stressed and living in poor soils that do not have healthy populations of natural mycorrhizae would be good candidates for injection with mycorrhizal inoculants.

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care. The mycorrhizal/plant partnership is a basic, essential and integral part of plant survival and growth. When contractors inoculate nursery stock with mycorrhizal fungi, they are using nature's life-support system to improve the stress resistance of their plants. **U**

The author won the Marcus Wallenberg Prize for Forestry and founded the Institute for Mycorrhizal Research and Development and the Institute of Tree Root Biology for the USDA Forest Service. He is now chairman and principal scientist with Plant Health Care Inc., Pittsburgh, Pa.



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Remove polytwine on B&B plants to avoid girdling (right). Poor soil drainage in the planting hole can be corrected with a subsurface drainage system (left). Credit: R. Schutzki

The rules for transplanting have changed as scientific analysis and field experience have revealed better practices.

By Robert Schutzki



GREEN SIDE UP — Don't pick up a plant by its ears — Dig a \$5 hole for a \$1 plant. There are many more one-liners referring to the planting process, and while some are comical, the underlying message is: Use sound horticultural practice. Although installing a plant is fairly simple, there are as many variations in practice today as there are landscape contractors.

Many practices are based on tradition, but research and field observations have slowly introduced changes to this traditional thinking. Today, planting techniques have become an integration of traditional horticultural practice, scientific research and field practice.

To ensure that transplanted trees and ornamentals get their best chance for

survival, a review of your company's transplanting practices may be in order. This article looks at what modern research and observations have revealed about transplanting.

STRESS PROBLEMS. Newly transplanted plants can be exposed to a series of stresses during the transition from nursery to site. Transplant shock has been used to collectively define a plant's performance during reestablishment into the landscape.

Watson (1986) indicated that in field-harvested trees, less than 5 percent of the existing root system moves with the tree to the site. The imbalance between the root system and the crown contributes to the severity and duration of transplant shock.

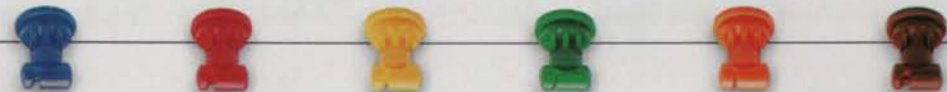
Assuming the proper plant was selected, problems could vary from improper handling at the nursery to improper planting techniques to poor soil conditions at the landscape site.

Usually, though, we can assume that plants arrive from the nursery in good shape. Planting then deals with our ability to integrate the plant into the site.

Good technique considers the hole, plant type, backfill, staking, mulching and, in some situations, monitoring during the guarantee period.

(continued on page 44)

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(continued from page 42)

PREPARING THE HOLE. The planting hole should be approximately two to three times the width of the soil ball or container. Loose, friable soil will facilitate new root development. Heavy, compacted clay can prevent deep root growth, whereas sand or loam will allow roots to extend and penetrate deeper into the soil profile (Watson, 1985).

The width of the planting hole provides a beneficial zone of aeration and drainage during the establishment period. Tapering the sides of the hole will increase backfill volume and extend the zone for optimum root development (Watson, 1986).

Hole depth should allow the plant to be positioned at the same level it was in the field or container. Soil at the bottom of the hole should be firm to prevent settling. A compacted plateau or mound

will support the root system, especially in bare-root plants.

Plants in poorly drained or compacted soils should be positioned with the root mass above grade (6 inches is often mentioned). The degree of elevation may vary but is basically governed by the root system.

Usually, we assume that a majority of the root system occurs in the top 12 inches of soil. Root development following planting occurs through elongation of existing roots and the regeneration of new roots behind the severed ends of roots cut during transplanting. Elevating the upper 12 inches of the root ball, or a portion, raises the zone of active root growth above potentially saturated conditions.

A subsurface drainage system should be installed under extreme situations.

We often assume that balled-and-burlapped plants can take care of themselves, but be sure to maintain soil moisture within the ball.

Common French drains or a system with outlets into storm drains can prevent excessive water accumulation in the root zone. These systems are important when trees are planted in irrigated turf areas, because irrigation schedules are usually governed by the requirements of the turf, not the tree.

PLANT PREPARATION. Bare-root plants are not as popular for direct use in the landscape as they were in the past, although they still offer economic advantages on large commercial and public

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NATURE'S TREE PROTECTION

Mycorrhizal fungi are an essential part of all plant growth. Mycorrhizae, which means "fungus-root", work as an extension of the plant's roots to help the plant take up soil nutrients and water in exchange for a steady source of sugars. This co-dependent (symbiotic) relationship has evolved over millions of years. Thousands of research studies have shown that the fungi/plant relationship helps plants survive stress, absorb more water and nutrients, and increase resistance to soil-borne diseases.



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USE READER SERVICE #72

projects. Desiccation is a major limiting factor in bare-root plant performance.

One method to alleviate desiccation stress includes sweating (Bates and Niemiera, 1994). Plants are wrapped in plastic to facilitate humid conditions. The rehydration of stems and roots has a positive effect on long-term survival.

Other treatments, including the application of an antidesiccant wax to stems prior to planting and misting of planted bare-root stock, have enhanced performance during establishment.

Preparation of bare-root plants prior to planting also requires the pruning of damaged, broken and excessively long roots. Root systems should be positioned in the hole without twisting, bending or kinking of any roots.

B&B TECHNIQUES. We often assume that balled-and-burlapped plants can take

care of themselves, but be sure to maintain soil moisture within the ball. Too often, plants begin to regenerate roots, only to have them lost due to desiccation during transporting to the site.

After positioning the plant in the hole, remove all sisal and synthetic twine from the base of the trunk or stem. Sisal will decay, but multiple wraps may take two or more seasons to decompose. Synthetic twines do not decompose and can cause girdling in one season. Burlap should be pulled away from the trunk and folded back into the hole.

Baskets do not need to be removed from the plant. Roots will grow through the typical spade basket and in time, consume the wire. Some contractors prefer to remove the top section of wire to eliminate future problems with the wire loops working their way to the surface. Synthetic materials such as poly-

burlap or plastic should be completely removed from the hole.

Determining the level of the root system can be deceiving in B&B trees. Repeated cultivation causes an accumulation of soil around the trunk collar, where roots rarely extend. Fold back the burlap, check the trunk taper and the top of the soil ball for roots and remove the cultivation layers as necessary. In one case, cultivation resulted in a 4-inch layer of root-free soil at the top of the root ball.

Moisture level within the root ball is critical in assuring initial growth performance for B&B stock. Initially, water uptake from within the ball exceeds water movement into the ball through capillary action.

Environmental conditions during harvest, storage and shipping can reduce root ball moisture prior to planting, and

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USE READER SERVICE #39

dry root balls will result in poor growth, as well as a deterioration of quality.

It is important to recharge the root ball before leaving the site. It may be the only thorough watering the plant receives during its initial root development. Deep root feeders are used to force water throughout the root ball. Monitoring root ball moisture can also prevent a deterioration of plant quality during the guarantee period. A soil probe can be very effective in monitoring root ball moisture.

CONTAINER OPTIONS. Container plant production was developed for efficient management, ease of handling and to extend the planting season. With container plants, the transition from production to the landscape can pose problems related to the artificial media and production practices on root develop-

.....

Environmental conditions during harvest, storage and shipping can reduce root ball moisture prior to planting, and dry root balls will result in poor growth, as well as a deterioration of quality... Recharge the root ball before leaving the site.

.....

ment in the container (Ingram and van de Werken, 1978).

Examine the root systems. Loosen the root mass, because a pot-bound condition will restrict root development into the surrounding soil and cause difficulty in wetting the original root mass. Butterflyng or slashing are methods of disrupting the root mass (Gouin, 1984).

The root/soil contact this creates minimizes moisture stress, often resulting from the textural differences between the artificial media and the soils.

Cover the top of the container media with soil to minimize evaporation from the container mix. Butterflyng will also cause water stress in actively growing container plants. A light pruning of succulent growth may be required to maintain an acceptable appearance.

Mechanical tree spades revolutionized field production. An early study by Birdel et al. (1983) indicated that mechanically spaded trees perform better when planted into a backhoe-dug hole, but mechanical spades often dig the hole as well as plant the tree. Glazing on the

(continued on page 48)

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(continued from page 46)

hole walls and discontinuity in the soil column caused by the blades is the focus of concern. Loosen the soil around the interface between the plug and the hole and integrate the surrounding soil with the soil in the plug to fill the voids left from the blades. Monitor soil moisture within the plug periodically to ensure adequate establishment.

PLANTING FOLLOW-UP. The general consensus from research over the past 10 years is that no consistent improvements in establishments have resulted from the addition of soil amendments at the time of planting (Corley, 1984; Hummel and Johnson, 1985). This is interesting, considering the frequency of soil amendments written into planting specs.

Planting specifications often require soil amendments to improve soil drain-

Stakes should be removed as soon as possible to avoid girdling. Prolonged staking can be detrimental to caliper and root development on young, developing plants.

age but, the amendment and the quantities may not necessarily affect a positive change. In addition, improved drainage in the backfill may not be accommodated by the surrounding soils. Thus, puddling in the planting hole will occur.

It is generally accepted that staking is only needed to stabilize the root ball or to provide trunk protection. Stakes should be removed as soon as possible to avoid girdling. Prolonged staking can be detrimental to caliper and root devel-

opment on young, developing plants (Harris, 1984).

Mulch conserves moisture, inhibits weed growth and moderates soil temperatures. Three inches usually are beneficial.

Fertilization recommendations vary from no fertilizer for the first year to an application of a complete fertilizer incorporated into the backfill (Perry and Hickman, 1992). An initial soil test will aid in determining the need for fertilization.

Light pruning can be done at planting. Installation may provide an opportunity for corrective pruning while forming the plant's intended shape. **LL**

The author is associate professor in the department of horticulture at Michigan State University, East Lansing.



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Mulch A do

About Grasscycling



Mulching mowers are available in sizes ranging from 21-inch walk-behinds to 72-inch riding versions. Credit: Exmark Mfg. Co.

Everyone agrees mulching mowers are improved from 10 years ago, but are they good enough to make a difference in your business?

By Bob West

THE average California lawn generates 300 to 400 lbs. of grass clippings per 1,000 sq. ft. annually, according to the California Integrated Waste Management Board. More than six million tons of these clippings end up being hauled off the lawns and disposed of through municipal waste programs, comprising approximately 15 percent of that state's waste.

Most lawn care companies and contractors realize there is actually some value in those clippings, but how many realize just how much value? The CIWMB estimates those six million tons of clippings contain nearly all of the nitrogen necessary for healthy turf in the entire state. Imagine that...enough nitrogen for application to all of California for an entire year, and it ends up at a garbage dump.

So as dump and landfill availability rapidly disappeared over the last 10 years, mowing manufacturers turned their research and development departments loose. Their charge is to create an effective mulching mower allowing lawn maintenance companies to leave grass clippings on the lawns without sacrificing aesthetics or turf health. Today, manufacturers agree they have improved the quality of these mowers, but they can't agree on just how effective they are and how much better the new models can be.

NEW AND IMPROVED. Mulching mowers, commonly called recycling mowers, have been on the market since Bolens introduced its first models in the 1970s. But manufacturers have battled two problems selling these mowers: contractors are reluctant to believe they can leave clippings on a yard without upsetting customers, and early mulching designs failed to completely please the contractors that bought them.

Rick Curlett, director of marketing for Exmark Manufacturing, Beatrice, Neb., described the development of mulching mowers as an "evolution" in the last few years. "Previously, we educated people that the best way to create an attractive lawn was to carry the clippings away. And it's not that we were wrong, but now we know differently."

"There has always been a good mulching mower here and there," commented Rick Rodier, product manager for The Toro Company, Bloomington, Minn., "but the general population of them has only been mediocre or poor."

But that has all changed.

"Now, the mulching mowers have really improved," Rodier said. "All of the manufacturers are committing more resources and energies to these projects."

(continued on page 52)



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(continued from page 50)

Manufacturers' development energies are going into both the dedicated mulching decks and mulching kits, which adapt standard mowers into mulchers. The dedicated decks and kits offer mulching mowers ranging from 21-inch walk behinds to 72-inch riding versions with varying blade, baffle and air flow systems.

The challenge with improving these mowers lies in the air flow patterns created beneath the deck. "The difficulty with any mulching deck is being able to cut and recut the turf and then being able to throw it back down to the ground while trying to lift up other clippings at the same time," explained Ken Lepkowski, national sales manager for OEM markets for Snapper, McDonough, Ga.

Curlett noted the most effective mulching mowers right now are generally the 21-inch models. "There you've

Dealing With Design

.....
Building the perfect mulching mower is a test currently challenging all of the mowing manufacturers, and they all agree it's not a simple test. Most of the designers' attention now is focused down under — not that an Australian company has the perfect mower — but down under the deck where the mowing and mulching takes place.

"A lot of manufacturers used to believe that by adding more horsepower, changing a blade and closing the cutting chamber, you would get a good mulching mower," explained Rick Rodier,

product manager for The Toro Company, Bloomington, Minn. "Now we know that it's more about how the entire process works — the cutting of the grass and a purging of the clippings from the mulching chamber to create constant air flow in the chamber."

To control air flow beneath the deck, manufacturers install baffles which isolate each blade from the rest of the deck so it works as its own mini-mower. This stops clippings from floating throughout the space and clogging up the space.

Toro has also attached angled pieces of metal inside the baffles on its mulcher to deflect larger clippings back down into the blades for additional cutting action.

Bush Hog recently adapted a system for mowing turf that is based on a product for harvesting agricultural products and cotton. It

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trimmers, edgers, sprayers, or lawn mowers, the complete Green Machine line is built to meet or exceed your commercial expectations.

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has two counter-rotating blades that move independently of each other. They are said to create an air flow pattern that suspends the clippings to be cut in the air and prevents clogging under the deck and windrowing, according to Bob Moore, vice president of sales for the Selma, Ala.-based company.

One of Snapper's mulching systems mulches clippings with a single blade containing six cutting edges and is available as a kit. Another deck is built as a mulcher in a cast aluminum deck that actually converts back into a rear-discharge mower. "These mowers have to be more flexible and more adaptable as the contractors go back and forth between various kinds of lawns," noted Ken Lepkowski, Snapper's national sales manager for OEM markets, McDonough, Ga.

got just one blade beneath one deck," he said. "With larger decks that have more than one blade, the problem is maintaining that same efficiency."

Separate baffles are situated above each blade, beneath larger mulching decks, which create smaller cutting chambers for clippings to circulate. This helps larger decks function like a series of smaller decks with smaller air flow patterns for maximal efficiency.

Simple mulching kits do little more than provide a plate to close off the discharge chute and supply a reversible blade to cut the clippings twice, as opposed to just once. Kits for larger decks include baffles which can easily be added to create those smaller chambers.

FALLING SHORT? There is little doubt that everyone — manufacturers, contractors and customers — appreciates im-

proved mowers. The questions, though, are just how good these mowers really are and how good they will get?

Some manufacturers remain disappointed by the slow developments of mulching technology. "There have been degrees of improvement, but I wouldn't call them quantum leaps," noted Bob Walker, president and owner of Walker Mfg., Fort Collins, Colo. "The mowers haven't risen to the performance level that some people expected, and I don't anticipate that we'll see a mulching mower that works in every condition on a year-round basis."

"I don't know that mulching mowers are that much better than five or 10 years ago," agreed Ken Raney, advertising manager for Excel Manufacturing, Hesston, Kan. "They're still holding grass under the deck and this grass builds up

(continued on page 56)

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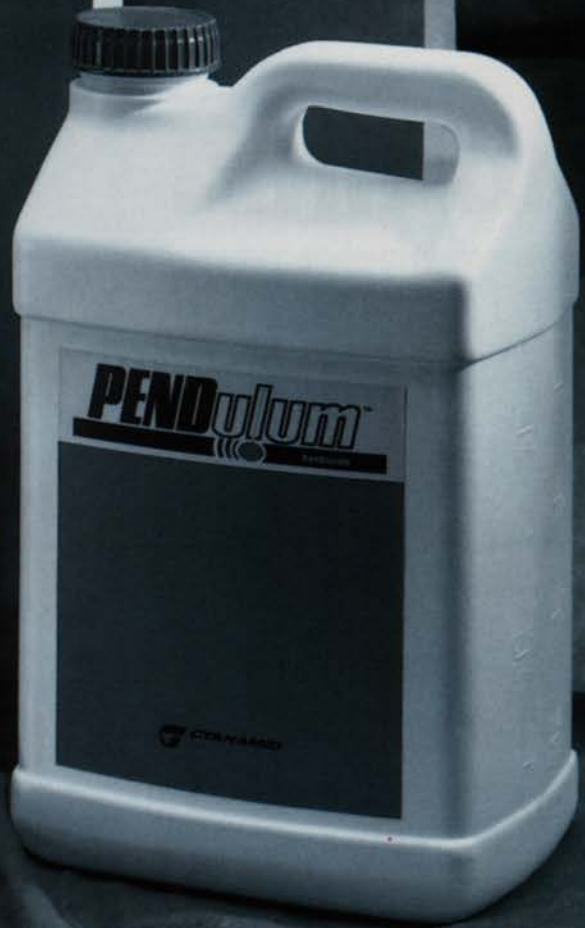
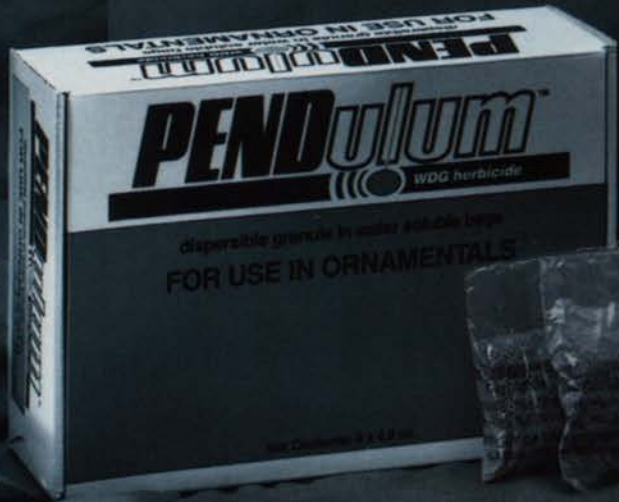
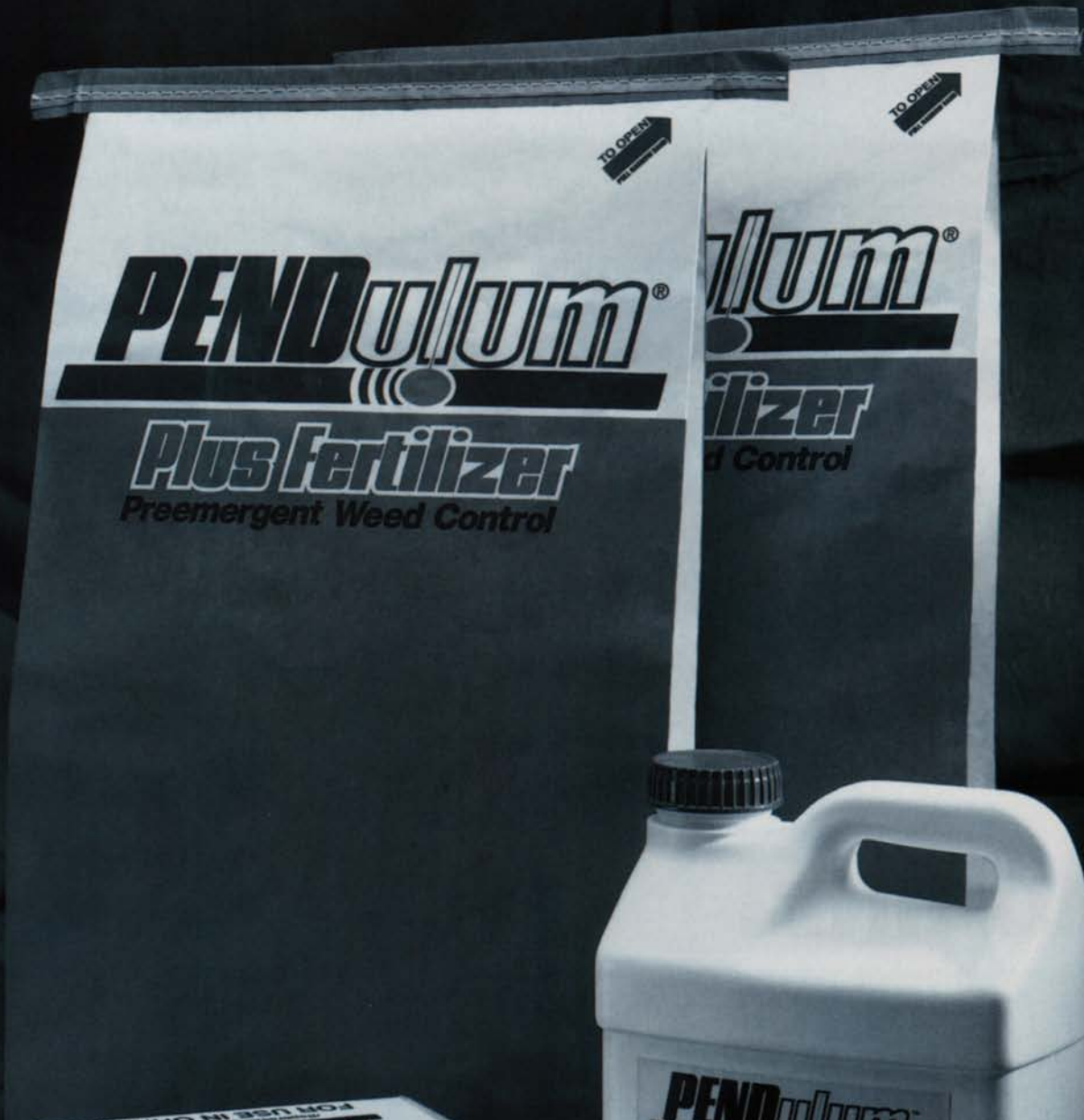
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USE READER SERVICE #80

(continued from page 53)

and gets deposited at the end of the rows."

Raney explained another hurdle for mulching mowers can be the amount of grass that can be mowed effectively. Recommended mowing practice is to cut 1/3 of the entire blade each time you

mow, but this may put too much grass under the deck for mulching mowers to handle and may lead to clogging and unsightly deposits. "Mulchers work well if you're just cutting off 1/4 of an inch, but that's not realistic," Raney said.

Ultimately, the final verdict on mulch-

ing mowers is rendered by the contractors who use them. In this case, the verdict varies based on the mowing conditions of each area.

Mulching decks and kits have become a vital part of the operations at Minor's Landscape Services, located in Fort Worth, Texas. "We haven't had significant problems with accumulations or getting through the turf on the bermudagrass and St. Augustinegrass here," commented Randy Ferrari, vice president of operations. "The technology is continually improving and more companies are making the mowers more powerful to recycle the clippings better. It's gotten to the point where to use anything else would be foolish from an environmental and productivity standpoint for us."

THE ULTIMATE TEST. So mulching mowers live up to their billing on flat, dry, coarse turf varieties established in areas of slow, constant growth with less heavy growth in the spring. What happens when a mulching mower is used on rapidly growing tall fescue turf in late April, a few days after some rain?

Scott Wagner, president of Landmark Landscape Management, Ashland, Va., said his company has given up on the mulching mowers. "We used a few mulching decks a couple of years ago, but they were continually clogging up the deck and they just created more problems than they were solving."

The damp climate of the Pacific Northwest has also proved too challenging for the recycling decks, thus far. "The biggest problem we ran into with mulching mowers was clogging under the deck due to the amount of moisture we deal with during the mowing season,"

.....
'The technology is continually getting better ...to use anything else would be foolish from an environmental and productivity standpoint.'
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mulching mowers

(continued from page 56)

explained Bob Grover, vice president of landscape management, Northwest Landscape Industries, Portland, Ore. "When the lawns are drier, the mulching mowers work great. But we just have too much wet season."

While manufacturers admit that mulching decks aren't ideal for all mowing at this point, they are quick to point out that these mowers can still prove valuable to anyone caring for turf.

"Today, we're as close as ever to saying it doesn't matter between a mulching deck and bagging to do the same job," Rodier explained.

MULCHING KITS. This is where the mulching kits, which convert a traditional mower into a mulching mower, become particularly helpful. "Dedicated decks create concerns in areas where you must



catch the clippings early in the spring to handle heavy growth and get the lawn in shape," Curlett noted. "But you can use a catching system during the spring and put on a mulching kit through the summer."

"The kits may not give you optimum performance," Walker said, "but optimum performance usually isn't needed for lawns during the hot, dry summer months. Then the kits can work well as more of a low-tech mulching mower."

The key to a mulching mower is a clear air flow pattern beneath the deck so the clippings are recut and discharged into the turf. Credit: Snapper

Crews at Minor's Landscape typically use the kits on their 52-inch mowers while using dedicated decks for 21-inch walk behinds and 72-inch riding mowers. "You can change the blades and put on some baffles in about 15 minutes," Ferrari said. "The dedicated decks manufactured specifically for recycling clippings do a bit of a better job for us, but using the kits is still faster than catching the clippings, even if we have to go back and take care of some clumps." **LI**

The author is Assistant Editor of Lawn & Landscape magazine.

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USE READER SERVICE #36

Water Features:

The Elusive Niche



(Above) This red attractive hardy water lily and parrot's feather require no weeding. Credit: Aquascape Design. (Below, left) Landscapers who build water features say they are among the most difficult, but most rewarding projects they do. Credit: The Pattie Group.

Designing and installing water features properly and profitably takes special skills that few teach.

By Paul Schrimpf

M

MOST landscapers agree that incorporating a water feature into a landscape design is like making a little magic. A gently flowing stream, a crashing waterfall or a simple lily pond with fish and other aquatic life can change the complexion of the landscape entirely.

"Water features make a landscape appeal to all the senses," said Gary Wittstock, president of Waterscape Designs, a water feature product supplier and manufacturer in West Chicago, Ill. "You can take a \$50,000 landscape job with no feature and put it up against a significantly less expensive landscape that includes a water feature, and the water will draw more comments from people."

Unfortunately, water features present a whole set of issues that are unique in the world of landscape construction. While some new techniques increase the consistency with which water features are built, there are significant differences in the timing and cost of constructing water features that exist from site to site.

Still, there are some landscape companies that are known in their city, their region and even nationally as water feature specialists. They can design and build water features that not only work, but more importantly, add to the profits.

(continued on page 62)



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WHERE TO TURN. When it comes to water features, there are very few places that professionals can turn to for one-stop information on water features. Most of the top landscapers who do water features have gained their expertise from a variety of sources.

How Steve Pattie, president of The Pattie Group, Chesterland, Ohio, became known for outstanding water feature design is typical of many design and construction firms across the country with similar reputations.

"I get bored easily, and I have always been interested in trying something new," he explained. "Water features are complicated, tricky and hard to price, but they have always been fun and challenging to us," he said.

Pattie worked on his first water feature about 20 years ago, and he admit-

ted that "about 90 percent of the project went right." By trying different designs and techniques over the years, the firm was able to build a knowledgeable team of people while streamlining the projects as much as possible.

Water feature construction and maintenance technique courses, even at the novice level, are not commonly available. The Associated Landscape Contractors of America has held some roundtables on the subject, according to executive director Debra Atkins, but has not created courses that teach water feature construction. The Irrigation Association also

A gently flowing stream, a crashing waterfall or a simple lily pond can change the complexion of the landscape entirely.

does not address water features in either courses or certification training.

There are few, if any, regulatory guides to use as reference points for designing water features. Except for some municipalities, building codes apply only to swimming pools and not landscape water features.

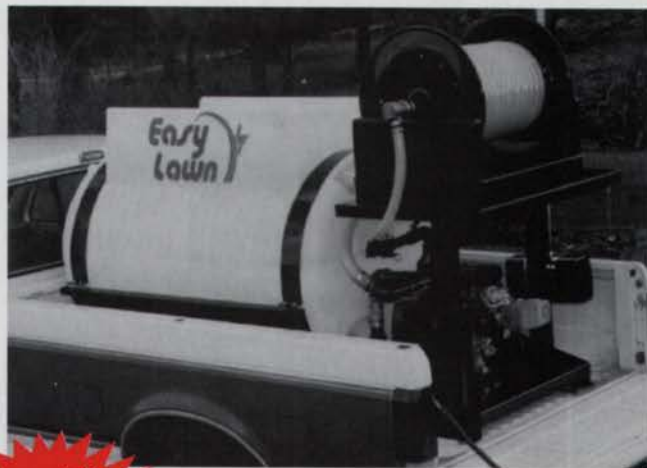
"If a project that is termed a water feature is built into the landscape, you really don't have any restrictions or codes except in some local areas," said Eric Keesen, executive vice president of Allen Keesen

Landscape, Denver, Colo.

Landscape firms who specialize in water features have developed their own personal network of fellow contractors,

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(continued from page 62)

books, equipment suppliers and water quality maintenance and aquatic life specialists from which to draw expertise.

Water gardening is so popular in southwest Florida that Smallwood Design Group has developed turnkey relationships with pool contractors and aquatic environment specialists to do the most technical and tedious work, according to Paul Drummond, vice president of business development.

This has been a big help, especially when establishing features that need to support aquatic life, according to Drummond. A water feature can take from three weeks to a month to establish itself in an environment before it becomes self sufficient. Then it will require some degree of monitoring and maintenance to keep the ecological balance intact.

Companies that build water features

generally have certain people on staff that are strong in that area of business. Pattie said members of his design staff are all capable of designing a strong water feature, but there are a couple of foremen that are especially adept at making the plan work on the site.

Keesen said that doing a water feature is "like putting together a puzzle, and you really have to know what pieces go in what places, and in what order."

TYPICAL CLIENTS. Contractors say that once a client latches on to the vision of a water feature, the selling part is not difficult. The major concerns are the cost, which may be more than a client expects, and the level of maintenance that many water features require.

The most important thing to establish in the design process is how the water feature will be used. Will it be a

living ecosystem with aquatic life or clean and clear like a swimming pool? Will it be viewed more from the inside or outside? Is the sound of splashing or running water important to the client?

On the initial visit, Pattie has the potential client fill out a questionnaire that takes about 45 minutes to complete. Included in the questions are items specifically related to water features which reveal what the client is looking for in a project.

In general, there are two types of clients that buy water features — those that are highly knowledgeable and want to be actively involved in its maintenance and those who couldn't care less. Clients with a high degree of knowledge are usually interested in a naturalistic garden with aquatic plant life.

Over the last five years there has been

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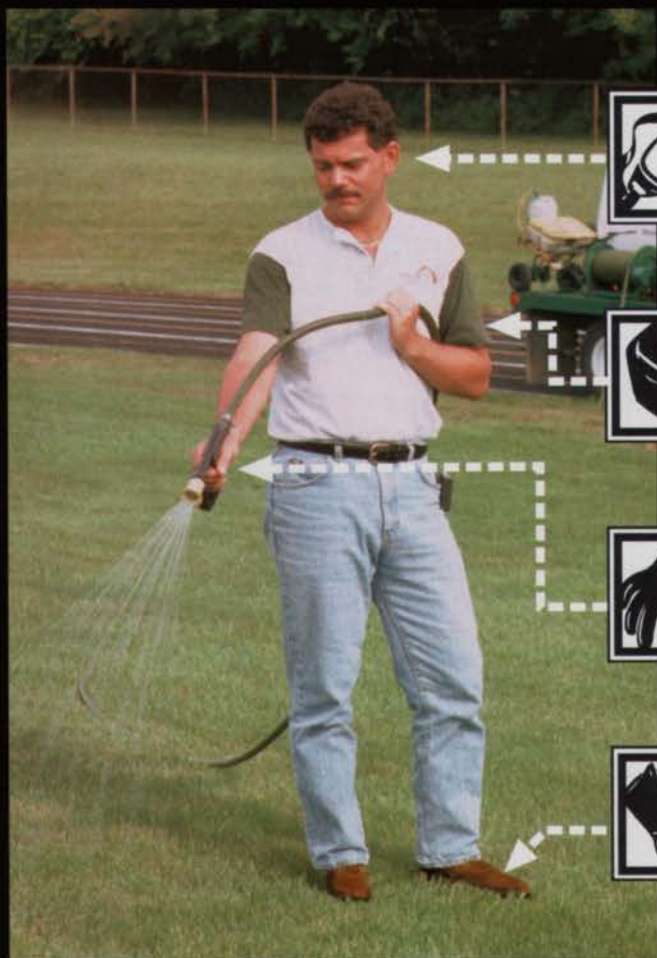


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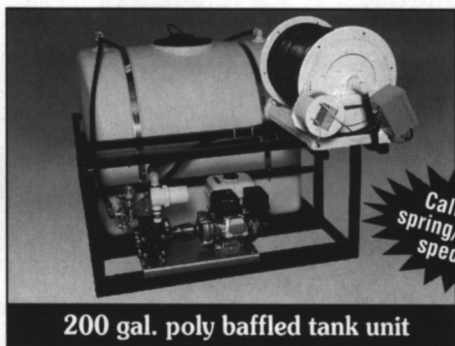
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water features

(continued from page 64)

an increased interest in ponds featuring a fish called koi. People who want to have koi ponds installed are often extremely knowledgeable about the fish and their environment, according to Keesen.

"We've installed a number of koi ponds in recent years, and koi clubs are becoming increasingly popular," he noted. In this case, clients will often know more about the fish and its habitat than the contractor. Under these circumstances,

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FLORA AND FAUNA. First, consider the growth patterns of both the plants and animals. Some aquatic plants are vigorous growers and can take over a small water garden. A typical hardy water lily will spread over a 3-foot diameter area. Most customers like at least 2 or 3 lilies for their pond, and some open water, so our water gardens are typically at least 8 feet long by 6 to 10 feet wide. These dimensions make it easier to dig the pond to at least 18 inches of depth without requiring steep sides. A shallower pond edge is safer for people and children and encourages the planting of shallow bog and marsh plants that naturalize the setting.

Larger ponds generally require less maintenance — the pond can handle more fish and plants without getting noticeably dirty. Fish grow better in larger ponds and can hide from predators.

The filtration system should be sized to handle the increased biological load placed upon it from the growing fish population. Pump and pipe diameter selection should be done by someone knowledgeable in waterfall flow and filtration flow requirements.

After designing and marking the area, it's time to dig and install the water-holding device. It may be concrete, clay, preformed plastic or a rubber liner. We have found that a fish-safe 45-mil EPDM (ethylene propylene diene monomer polymer) is easy to install and cost effective.

Adding a rock and gravel substrate hides the pond lining material and creates a pleasing visual affect, while adding refuge for fish and frogs.

the customers are often helpful in making sure the design meets the criteria for supporting the fish habitat.

The other aspect to discuss with the customers is the ongoing maintenance of a water feature. Just like a swimming pool, there is a certain maintenance regimen that customers will have to follow, whether they decide to do it themselves or contract it out to a specialty firm.

The increasing demand for water features has led to a significant increase in the number of pond maintenance

Gravel provides the necessary habitat for bacteria to colonize. It greatly increases the biological filtration capacity of the entire system. We use granite as our stone of choice, which comes in a variety of colors, shapes and sizes. Most stones can be used, but be careful with limestone as it can change the pH of the water.

SUPPORTING AN ECOSYSTEM. Filtration is a must with any type of professionally installed water feature. It should be designed to fit the pond's size and fish load. We recommend both mechanical and biological filters. A mechanical filter like a skimmer removes debris that falls into the pond and is critical. If debris is not removed, it begins to decay within the pond and can lead to disease and possible death of fish.

A biological filter is equally important to the overall health of a fish habitat. It supports colonies of bacteria that remove ammonia and nitrite from the water that are deadly to fish in big concentrations.

The last factor is dissolved oxygen levels, which can be achieved with a waterfall. It looks and sounds great and is an excellent oxygenator.

Filtration selection considerations are cost, installation time, compatibility if using several different manufacturers, filter performance and the ability to hide the pond filtration and construction materials.

Fish need a well-balanced diet in moderation and need occasional feedings of good, high quality fish food with all the proper vitamins and minerals. Let the pond habitat supplement your feedings.

SIMPLE MAINTENANCE. Cleaning the skimmer and biofilter according to the manufacturers' guidelines is necessary. Yearly or biyearly total pond cleanout may be needed to freshen up the pond. The use of bacterial seeding is recommended to speed up the natural process of decomposition and eliminate water quality problems.

In the north, the fish require adequate oxygen in winter. Use a floating heater or small recirculating pump placed in 8 to 10 inches of water to keep the pond from freezing over completely. A combination of the two methods may be necessary depending on the number and size of the fish.

We recommend that anyone interested enroll in a course or study related articles to learn more about the intricacies and the joys of properly designed waterscapes. — Gary Wittstock

The author is president of Aquascape Designs Inc., West Chicago, Ill.

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USE READER SERVICE #55

water features

firms. Most landscape professionals say the level of work and expertise required for most water features make performing this service cost-prohibitive.

The Pattie Group will recommend a list of local aquatic maintenance specialists for customers. Picking a reputable company will be important when the feature supports aquatic life — especially in the case of koi, where customers commonly name their fish and treat them like part of the family.

Ongoing maintenance tasks include cleaning filters, removing debris such as leaf drop from deciduous trees and the "winterizing" of the system, depending on whether the system is set up to run in the cold weather.

AVOIDING PROBLEMS. It's difficult work, but landscape professionals said that building water features is some of their

most satisfying work.

"The first couple of projects we worked on were intimidating," said Judd Griggs, senior landscape architect at Lied's Landscape Design and Development, Sussex, Wis. But, he added, a good reputation for creating water features quickly spreads.

Landscape professionals who have mastered the techniques of designing and constructing water features generally started with relatively uncomplicated projects and worked their way to more difficult landscapes.

Mastering the pricing process is also one of the big challenges. Each project varies depending on the amount of earth

Contractors say that once a client has latched on to the vision of a water feature, the selling part is not difficult.

being dug out, rocks and boulders being placed, linear feet of running stream, height of any waterfalls and other considerations.

Keesen suggested that landscapers try smaller features first to avoid getting burned, or hire subcontractors for larger jobs and learn the trade from them.

To ensure success, experts urge that landscapers avoid using inferior products, especially the liner. "If the liner fails, the great majority of the time you'll need to tear

out the whole feature and start from scratch," Keesen warned. **LL**

The author is Managing Editor of Lawn & Landscape magazine.



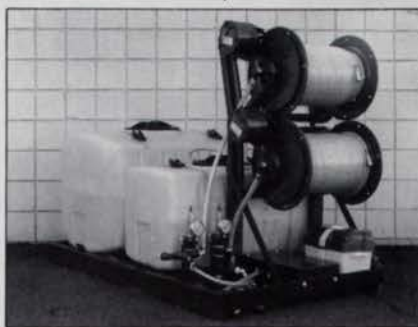
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USE READER SERVICE #58

Managing Residential Communities For the Long Term

R

ESIDENTIAL COMMUNITIES can mean any number of places: apartment complexes, condominium or cluster-home developments, even assisted-living campuses for senior citizens. While the particulars of each geographical market vary, the building boom in general has slowed from its frantic pace of the 1980s. Competition for these clients remains strong, as professional property managers or homeowner committees search for more ways to get more value for their landscaping dollars.

Some contractors are frustrated by the mechanics of getting contracts — working with various people, constantly reeducating decision makers or operating within strict budgets — but others thrive in this market.

They focus their efforts on meeting each community's needs while also bidding wisely and listening closely to the residents.

Dave Klier, director of sales and contract administration — horticultural services at Torre & Bruglio Inc., Pontiac, Mich., explained, "This is a good market. Small to mid-size firms are focusing on this market because they can get a lot of work fairly easily with low bidding. The challenge is doing it profitably. A lot of them fail and disappear."

Ed Laflamme, president of Laflamme Services Inc., Bridgeport, Conn., compared this market with his commercial properties: "With commercial or corporate landscape maintenance, the purchasing department is always saying 'Cheaper, cheaper, cheaper,' to

facility managers. You might have good relationships with them, but they have to go by the bottom line. There may be no negotiation on price, or they may call and say, 'Ed, is that your best price?'"

He added that residential communities are less focused on the bottom line.

John Wheeler, president of Wheeler Landscaping, Chagrin Falls, Ohio, sees the advantages. "One advantage is the fact

The keys to profiting from landscape maintenance in residential communities are good management, smart bidding and the ability to listen.

By Susan Gibson



High-end multifamily residential communities can be the source of long-term contracts, as well as continuing add-on services over the years. Credit: J. Wheeler

(continued on page 72)



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residential communities

(continued from page 70)

that there's work out there because many people don't want to do residential communities. I think the perceived disadvantages really turn off a lot of people to working on condos. It's perceived that there's no loyalty in this market — no reward for giving good service."

He has found how to deal with this perception, however. "You can't command as high a margin or hourly rate, but if you know what you're doing, if you're careful about pricing and you have the right guys and equipment, you can make a profit on it."

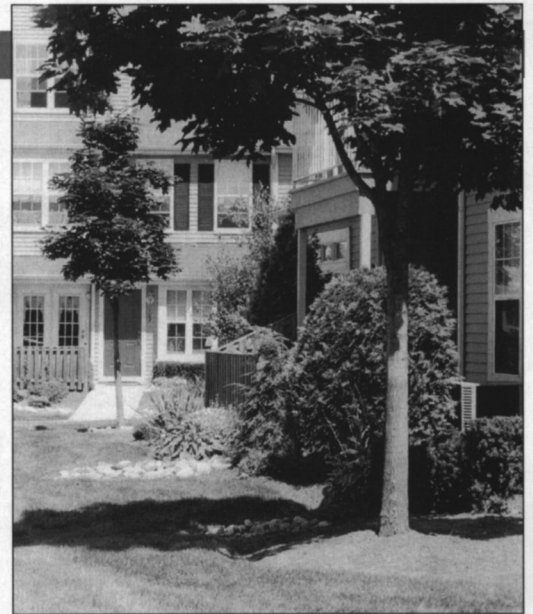
Still, others look elsewhere for business. Rodney Bailey, president of Evergreen Services Corp., Bellevue, Wash., noted, "The community association business leaves you without a strong point of contact, so it can be a very difficult business. It can be a very good business,

Many residents of multifamily communities want involvement in decisions on landscape maintenance and improvements. Credit: M. Scian

but we ran into too many self-appointed experts trying to help us do our work and we decided didn't need that market to meet our goals."

THE TRANSIENT LIFE. Apartment residents tend to be more transitional than those who own their property. Typically, they live at a location but are not really involved with it. That's the job of the on-site property manager, who usually serves as the direct contact with a landscape contractor. This is often based on budgets and basic property maintenance needs.

Linda Novy, president of the Gar-

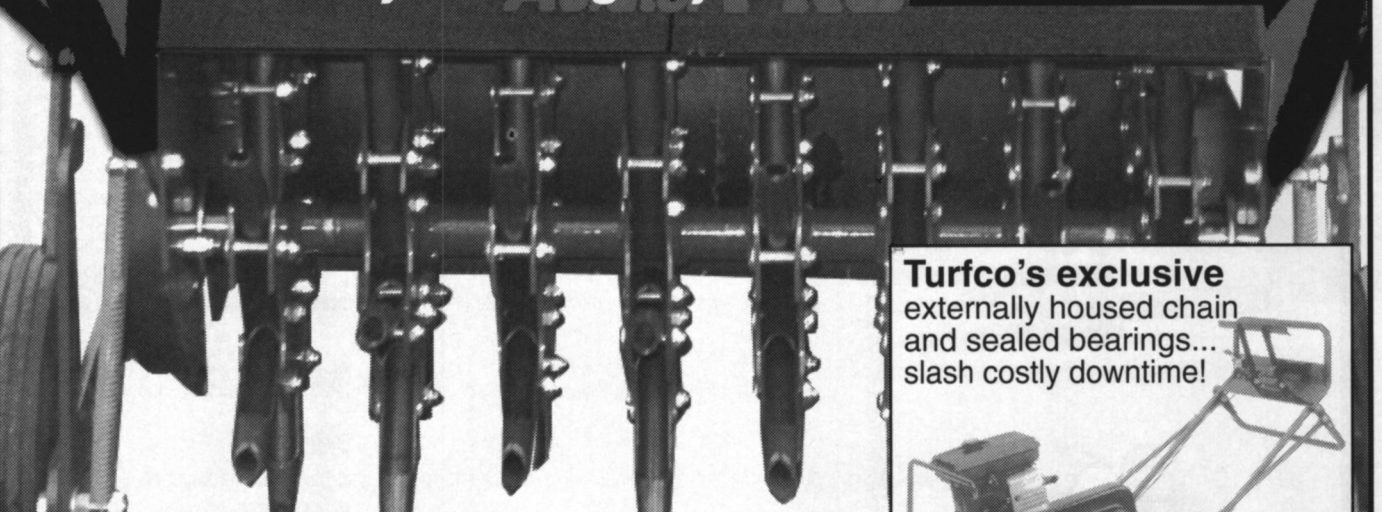


dener's Guild, San Raphael, Calif., explained, "Apartments are the most like a commercial property."

She noted that apartment complexes, while lower in budget, also require less kid-glove treatment. Other contractors said that maintenance standards at many

(continued on page 74)

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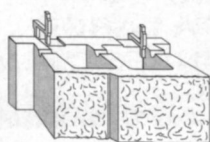
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residential communities

(continued from page 72)

apartment complexes are minimal and less likely to involve improvement work.

Klier explained one advantage of apartment contracts: "These are an opportunity to have one larger dollar amount contract rather than many smaller contracts. In the case of apartment communities, you usually have one decision maker for your dollar, rather than many. This changes for the condos where you get into dealing with the association boards."

HOMEOWNERS RULE. The dynamics change dramatically in communities of homeowners. The more settled and high-end the community is, the more its residents will be involved in making landscape decisions.

Novy commented, "This is a growing business for us. We usually handle the property through a landscape committee. We do walk-throughs, hold office meetings followed by walk-throughs, or do a walk-through and then present a master plan with a nuts and bolts element, plus suggested enhancements. The committee is the first line to comment on a plan and then they report to the board."

The more settled and high-end the community is, the more its residents will be involved in making landscape decisions.

Sometimes, homeowner associations refer all or some of the decision making power to professional property managers. They can serve as valuable go-betweens, noted Michael Scian, president of Scian's Landscaping, West Berlin, N.J. "Property managers have realistic perceptions on what can be accomplished, but the homeowners still put pressure on them to get more for less out of their contractor, particularly the landscape's high impact items. We find ourselves not so much giving away items, but putting together the right management team to supervise crews and troubleshoot on site to find the problems before they become visible anywhere else. It's important to show them that you're actually managing the property and not just the service itself."

Homeowners want more than value, Wheeler said. "Condos require customer service so you have to have the ability to respond at a very professional level."

But homeowner associations didn't get their fickle reputations for nothing. "You can have good performance and service and still lose these jobs over politics," Wheeler added. "These are not low-maintenance customers. You've got to have good communications and a way to reach the foreman on the property immediately."

Joe Short, who is vice president and business manager at Ocean Woods Landscaping on Hilton Head Island, S.C., said

(continued on page 76)



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(continued from page 74)

some homeowner associations want to do maintenance in-house. "Most of our competition comes from the association thinking of taking the contract to an in-house operation."

He emphasizes his firm's expertise to clients. "We add depth, expertise and professionalism that in-house operations can't afford. They can't afford to have as many people on their staff, like a horticulturist. We're much better equipped to handle situations like storm damage emergencies, trees down and drainage problems."

Large community contracts can entice a contractor to concentrate the business in only a few places, Short warned. "You can have one contract in the volume of 150 homes depending on the size of the community. This can be a real nega-

(continued on page 78)

When Snow Falls, Liability Rises

Snow removal work is one of the least favorite services that many contractors provide, especially if it is required as part of a contract at a residential community. But most continue to provide the service. Ed Laflamme, president of Laflamme Services Inc., Bridgeport, Conn., summed it up: "I don't want to do removal, but if it's a lucrative contract and the manager insists on it, we'll do it. We take the total liability from first snowflake. If we waited for 2 inches to accumulate, I wonder how many people would have already fallen down. At the first snowflake, we send a truck out to apply sand, which eliminates 90 percent of the problems. We also don't wait until the end of the storm to shovel the sidewalks, but we go at intervals of four or five hours, shovel and sand again."

Michael Scian, president of Scian's Landscaping Inc., in West Berlin, N.J., brings in several temporary employees for snow clearing days. "We employ 90 to 100 in peak season and go down to 20 in winter. We have to bring in the balance of our employees, plus another 75 to 100 people when it snows. It takes a lot of preplanning in late summer and fall to make sure we have the labor necessary to clear all the miles of sidewalks."

This winter's heavy snows in the eastern United States will affect many residential community contracts, he predicted. Many of his clients spent an estimated three to five times the money budgeted because of extra snow removals needed, so they will want to cut big-budget items out of the contracts. He noted that some accounts have already eliminated mulching from the entire upcoming season to save costs.

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(continued from page 70)

tive because you are vulnerable to losing a lot of revenue if you lose that one contract. If you build up enough clients, you can mitigate the risk."

Board turnover has been cited as a major problem for many contractors, forcing them to reeducate and renegotiate frequently. Some contractors accommodate it with their management styles. "With turnover, the philosophy of the board can change from year to year, plus new property managers may have new ideas," Short noted. "So there is a learning curve on both sides as they learn about our business and we learn about what they want."

LOW-BID BLUES. Don't think that the lowest bid is the sure way to long-term business. Although property managers and landscape committees want the low-


est price for the work, it's rare that the low bid generates a workable profit.

"The downside to this market is that these types of communities are normally price buyers rather than value buyers," said Klier. "They normally let jobs out to the low-bid contractor. The effective contractor needs to watch what the job costs are closely and look at the prices you're estimating. We don't want to get a bid just by being the lowest."

Standing firm on price can be difficult, he explained. "The good contractor has to say, 'My pricing is my pricing, it is the correct pricing and I'm not trying just to meet somebody else's low price.' I can explain to clients why my price is higher, explain about quality and value, and if it comes down to a numbers war, we don't choose to participate. It's almost impossible to be profitable if you're the low-bidder."

SPECIAL COMMUNITIES. Senior communities are another growing niche within this market. Some contractors find them to be profitable as long as a high level of communication and cooperation exists.

Novy's firm works with these communities and finds it profitable and rewarding. "We invite residents' participation at any level. Some people are involved with fundraising, landscape design or even paying to bring in a landscape architect on the team. We're flexible and it's easy to customize. If people are involved, they'll have more fun."

Some examples of her firm's projects include maintaining cutting flower gardens, an herb garden for cooking, annual and perennial gardens and plantings of nostalgic specimens. 

The author is Editor of Lawn & Landscape magazine.

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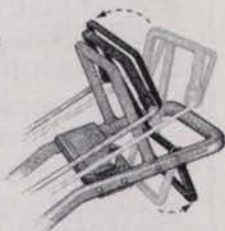


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Additionally, the idea of developing a sophisticated marketing plan and investing in newspaper, radio, television, direct mail or

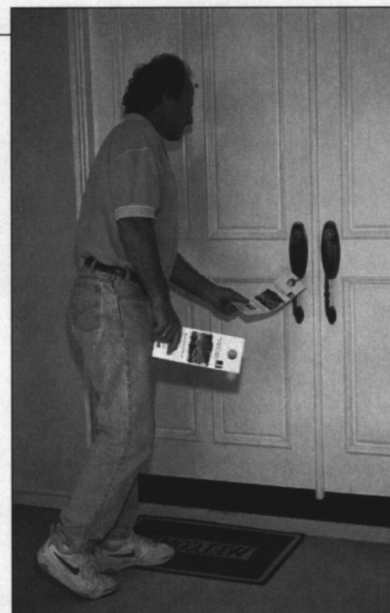
billboard/outdoor advertising can be expensive and overwhelming. So what other options does the contractor have to keep the appointment book full?

There's good news for the irrigation professional. A wealth of new resources is now available to help you keep your name in front of the public, in the right neighborhoods, at the right time. More and more irrigation equipment manufacturers have recognized the value of providing sales and marketing materials to help small contracting firms. Most of what you need is already designed, printed and ready for your stamp, sticker or company imprint.

Door signs can generate customer interest and leads. Credit: Hunter Industries

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These marketing tools and ideas can be utilized by both large and small irrigation contracting firms to jump start marketing efforts quickly and inexpensively with measurable results.



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(continued on page 82)

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IRRIGATION MARKETING

(continued from page 80)

capitalize on the neighbors' curiosity about the construction activity on a site by posting inexpensive job-site signs. These signs serve as a 24-hour reminder to neighbors of the name and telephone number of the contractor doing the work.

Cris Whittaker, owner of Whittaker's Landscaping in Orlando, Fla., uses yard signs as the centerpiece of his marketing efforts. He stated, "Yard signs help us attract the attention of the neighbors and promote our good work in the best way.

"I try to schedule my final visit to a residential job in the evening when the neighbors are out in their

yards. They've seen my sign and my clean, lettered truck and they're over in minutes asking for my card and an estimate."

Savvy product manufacturers now offer programs where contractors can purchase personalized yard signs with attention-getting designs. These high

quality signs only look expensive, but can actually be purchased for a fraction of the cost of custom signs.

Posting colorful, professionally designed door hangers on front doors of

targeted neighborhoods is another simple, inexpensive method of getting your name known. Door hangers can serve as a lead generator

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'They've seen my sign and my clean, lettered truck and they're over in minutes asking for my card and an estimate.'
.....

to even out the slow periods that every contracting business experiences.

David Dockery, owner of United Lawn Sprinkler in East Hartford, Conn., advertises with brightly col-

ored door hangers from a manufacturer.

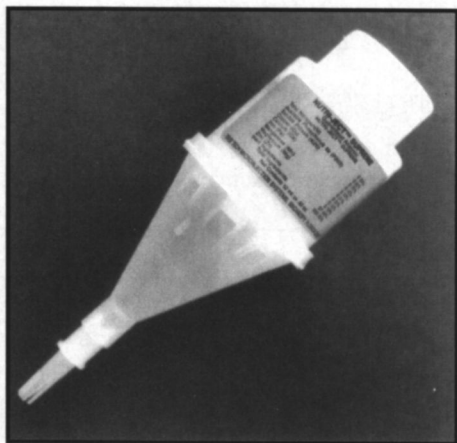
"We use them in the early spring to get jobs booked before the busy season hits. Then we use them again in midsummer if things get a little slow," Dockery said.

Another lead generating technique is to use the name of a satisfied customer on the door hanger. After making sure it's OK with the customer, Dockery jots down their name and address on a door hanger he distributes to neighbors on the same street. — Jeff

Carowitz

The author is marketing promotions manager, Hunter Industries, San Marcos, Calif.

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16	36	56	76	96	116	136	156	176	196	216	236	256
17	37	57	77	97	117	137	157	177	197	217	237	257
18	38	58	78	98	118	138	158	178	198	218	238	258
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Name _____
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1. Do you wish to receive (continue to receive) Lawn & Landscape magazine?

YES NO

Signature (required) _____ Date _____

2. What is your primary business at this location? (please check one) CONTRACTOR or SERVICES:

- Landscape Contractor (maintenance & installation)
 Chemical Lawn Care Company (excluding mowing maintenance service)
 Lawn Maintenance Contractor
 Ornamental Shrub & Tree Service
 Irrigation Contractor
 Landscape Architect
 Other Contract Services (please describe): _____

OTHERS ALLIED TO THE FIELD:

- Extension Agent (Federal, State, County, City, Regulatory Agency)
 School, College, University
 Trade Association, Library
 Others (please describe): _____

3. What were your approximate 1995 revenues?

- 0 - \$50,000
 \$50,001 - \$100,000
 \$100,001 - \$250,000
 \$250,001 - \$500,000
 \$500,001 - \$1 million
 + \$1 million

4. How many of your employees are:

- _____ Full time _____ Applicators
 _____ Seasonal _____ Maintenance

5. What percentage of your business is:

- _____ % Commercial/Industrial
 _____ % Residential
 _____ % Gov't/Municipal
 _____ % Golf

6. Circle what percent of your business is:

Lawn Care	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
Maint. Serv.	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
Irrigation Serv.	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
Pest Control	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
Installation	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
Trees & Ormmts.	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%

7. How much did your company spend in 1995 on?

- Turf Chemicals \$ _____
 Ornamental Chemicals \$ _____
 Equipment \$ _____

8. How many does your business operate?

- _____ Walk Behind Mowers
 _____ Riding Mowers
 _____ Trimmers
 _____ Chain Saws
 _____ Blowers

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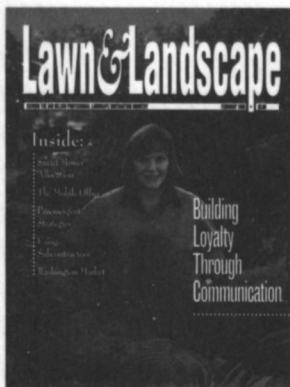


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 4. Ornamental Shrub & Tree Service
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 7. Other Contract Services (please describe) _____

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IV. OTHERS ALLIED TO THE FIELD:

1. Extension Agent (Federal, State, County, City, Regulatory Agency)
 2. School, College, University
 3. Trade Association, Library
 4. Others (please describe) _____

2. What best describes your title?

- Owner, Pres., Vice Pres., Corp. Officer
 Manager, Director, Supt., Foreman
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 Entomologist, Plant Pathologist
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Toro ProLine strengthened the 44- and 52-inch decks on its mid-size mowers and the deck on the Groundsmaster 120 by adding wear plates for extra sturdiness and reinforcing both upper cor-

ners to better handle front and side impacts.
Circle 201 on reader service card

The Add-It foliage feeder from **Strong Injectors** administers fertilizer proportionately and evenly through a garden hose/sprinkler system while spraying plant material. The portable system comes complete with an atmospheric backflow preventer and adds fertilizer to the water

stream without any loss in pressure on conventional sprinkling or drip irrigation systems. Add-It works with any liquid or water soluble dry fertilizer.
Circle 202 on reader service card



Shindaiwa's EB480 professional backpack blower features a low noise rating of just 69 decibels so operators can work even where noise restrictions are in place. The EB480 runs at 5,000 rpm on a 2-cycle engine with 2-ring piston and chrome cylinder and a displacement of 43.6 cc. The fuel tank holds more than 70 ounces while the blowing speed provides a maximum of 180 mph.
Circle 204 on reader service card

OmniComp's Service Call Express and Service Call Executive software provides complete work order capabilities to maintenance departments through preventive maintenance scheduling, equipment warranty tracking and repair histories on a Windows®-based operating system.
Circle 203 on reader service card



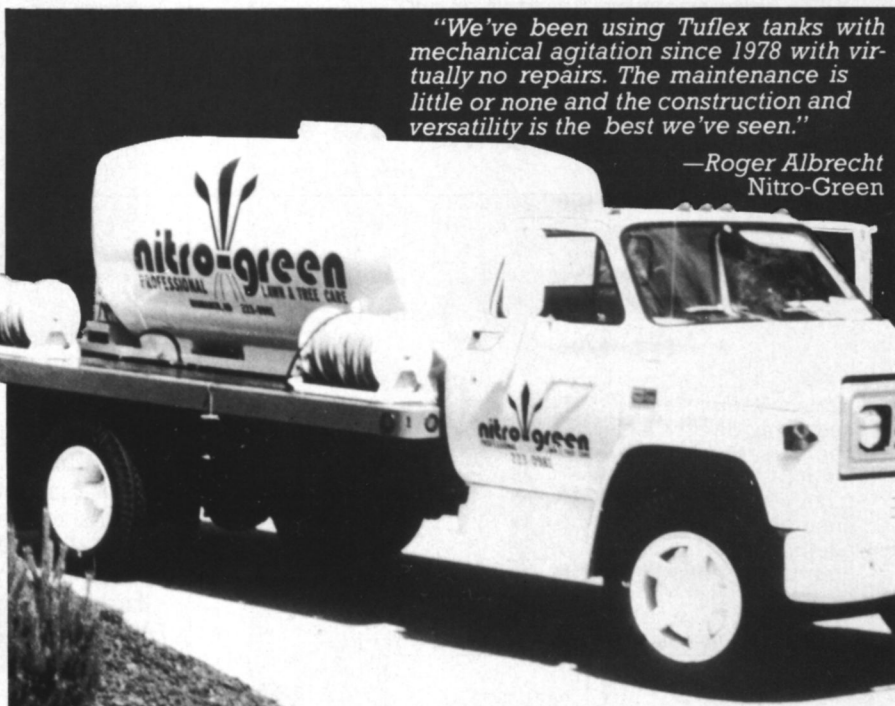
Little-Wonder's 24-inch gas hedge trimmer handles growth up to 1 inch thick with twin blades of hardened high-carbon steel. The handles have shock mounts to eliminate vibrations from the double reciprocating blades and a clear front guard offers operators a clear view of the hedges.
Circle 200 on reader service card

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NEW PRODUCTS

The redesigned T-60 Series II Hydro Seeder® from Finn is almost twice as powerful as previous models and includes remote controlled pump operation, giving the operator complete spraying control without requiring an additional person to control the machine. The T-60 also offers a direct drive clutch/pump assembly and a continuous flow electric hose reel with a platform-mounted discharge gun assembly.
Circle 205 on reader service card

The Pequea 1018 Deck OverTrailer offers a GVW rating of 10,000 pounds on the 8-foot 5-inch long full width bed with an all

welded, reinforced structural steel frame. Equipment loading is simplified with the 4-foot Beaver Tail and 38-inch wide by 4-foot 8-inch long ramp, which is available with a double hinge to lie flat on the bed. Electric brakes are standard on both axles and wiring is shielded, harnessed and easily accessed.
Circle 206 on reader service card

The Husqvarna 371 XP produces more than 5 hp and



weighs less than 13 pounds. The Low-Vib system reduces vibration levels and the 70-cc model also uses the air injection system, which cleans the intake air before it reaches the air filter.
Circle 207 on reader service card

The Miracle Controller from Netafim Irrigation is a 6-, 9- and 12-station controller featuring internal circuit board protection to bypass the need for fuses and hot posts. It uses self-diagnostic open-loop detection for protection

James Hardie Irrigation's Omni Reg uses a top-mounted graduated dial to regulate the downstream pressure required for any application, regardless of the inlet pressure. Clearly marked dial settings allow operators to check pressure without using a gauge. Pressure can be set with the water on or off and the OmniReg is designed to fit all heavy duty commercial Century Plus 100 Series and 700 Series UltraFlow valves.
Circle 208 on reader service card

of the master valve operations. Operators can program three independent watering programs, four start times and runs lasting anywhere from one minute to 10 hours. The unit can also automatically assess condi-

(continued on page 88)

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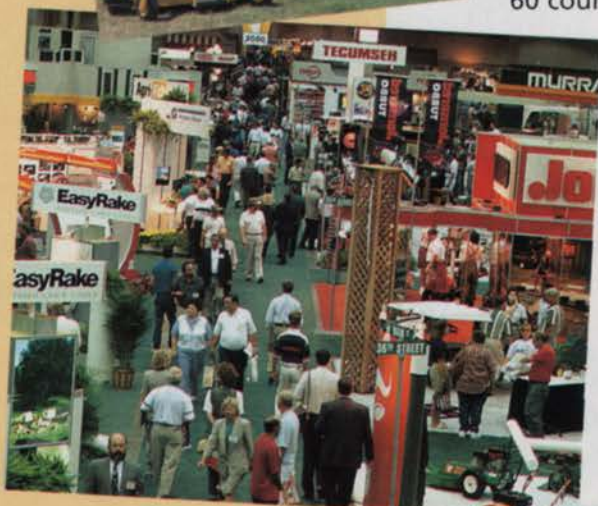
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NEW PRODUCTS

(continued from page 86)

tions by rain and soil moisture sensor input.

Circle 209 on reader service card

The **Ransomes Bob-Cat ZT 222** riding mower provides zero-turn radius with two steering levels independently controlling power to each wheel from a Sunstrand/Hydrogear pump and Ross wheel motor. A hinged foot plate allows easy access to



The **FR 106** backpack trimmer/brushcutter from **Stihl** is driven by a 2.1-cubic-inch engine and features electronic ignition, a fully lined shaft and an antivibration system. The unit accepts 10 different Stihl cutting attachments including the Polycut™ head, fixed line head, 4- and 8-tooth grass blades and brush knife.

Circle 210 on reader service card

the deck and belt drive and a tilt seat offers access to the linkages, hydraulic reservoir and battery. A 22-hp Kohler Command air-cooled gas engine powers the mower and three blades beneath the 61-inch deck.

Circle 211 on reader service card

Preventive Maintenance Products' QX-700 engine treatment

boosts the temperature breakdown levels of oil in 2- and 4-cycle engines. **QX-700** combines a sub-surface lubricant and a friction inhibitor to reduce costly repairs, as well as fuel and oil consumption.

Circle 212 on reader service card

Roll-A-Lawn consists of a sheet of recycled paper turned

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Circle 213 on reader service card

Excel added a hydraulic deck lift system controlled from the driver's seat to its compact models 251K and 260K to ease loading, unloading and driving over curbs. Mowers also allow drivers to change the cutting height without getting

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NEW PRODUCTS

off the mower. The 251K is a 51-inch rear discharge unit and the 260K has a 60-inch rear discharge deck. Both mowers are powered by a 22-hp Kohler Command engine.

Circle 214 on reader service card

Oly-Ola Sales' Roll-of-Edg landscape edging has a nonrounded top and is made of black poly/vinyl. It will not



rot, rust or lose its shape. The edging is 5 inches high

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Circle 215 on reader service card

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The Echo SRM-3400 trimmer/brushcutter replaces the SRM-3100 by providing 25 percent more torque and 12 percent more power with a 34-cc dual-piston ring engine with electronic ignition and a purge-pump equipped, all-position diaphragm carburetor. The 3400 also offers a 60-inch shaft and holds more than 50 feet of 0.105-diameter trimmer line.

Circle 216 on reader service card

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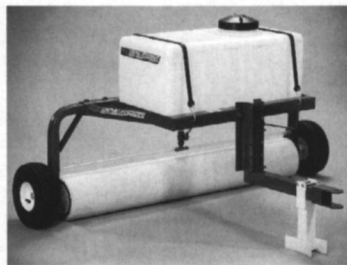
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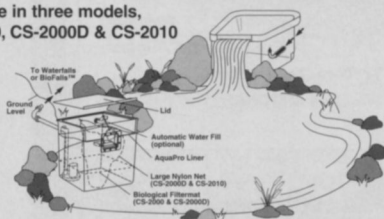
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NEW PRODUCTS

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Circle 217 on reader service card

mizes the odor that may be common to amine products.

Circle 218 on reader service card

Aquarium Pharmaceuticals offers separate fish foods for feeding koi and goldfish in cool and warm water temperatures. Pond Care Summer Staple Pond Food is formulated nutrient-rich for feeding fish in water above 65 F when growth and spawning occur. Spring and Autumn Pond Food provides a high carbohydrate diet.

Circle 219 on reader service card

The 609 Power Backhoe from Bradco is said to provide the best bucket digging force for a 4-bar linkage backhoe and the longest reach from the swingpost of any in its class.

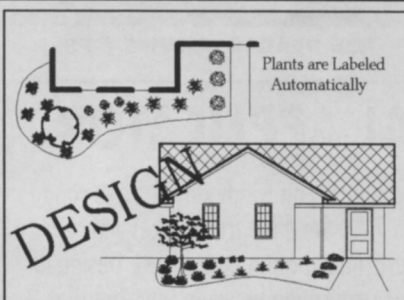


The 609 handles buckets ranging from 12 to 36 inches wide.

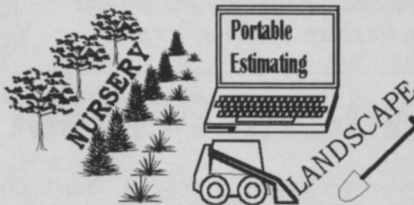
Circle 220 on reader service card

Sostram's Echo Turf and Ornamental chlorothalonil fungicides are labeled for use on a variety of plantings, including dollar spot, large brown patch, red thread, fusarium, melting out and gray leaf spot. Echo 720 includes six pounds of active ingredient per gallon, while Echo 500 and 90DF are available as a flowable and a dry flowable mix, respectively.

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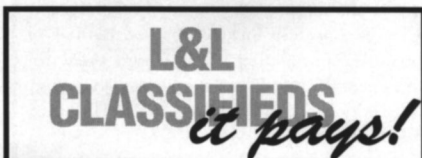
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CLASSIFIEDS

AD INDEX

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(continued from page 23)

Q. Why do you have a full-time human resource director?

A. Along with hiring responsibilities, that person runs the orientation program and the safety program. We look for a little more upscale employee. If they don't meet the requirements for being employed here, they don't get the opportunity to work here. It hurt us for a while, but it is a benefit to the company in the long run.

Another thing we discovered is that hiring people earlier than we actually need them helps us find the employees we want. If we wait until we really need them to be here, we can't find them.

Q. How do you avoid the big seasonal cycles?

A. We're more aggressive now to hire on a year-round basis. Because of the three divisions, we are able to do a lot of cross training because the divisions have different personnel needs at different times of the year.

For example, the landscape and maintenance people are working in the nursery in the winter months. It reduces layoffs and promotes loyalty.

Q. How do employees help with recruiting?

A. We instituted a recruiting benefit for our employees. Any employee who can bring in a new recruit that stays with us for three months gets a \$100 bonus, and an additional \$150 bonus if the new employee stays six months. This program has been very successful.

Q. How are bonuses and rewards determined in the company between the three distinct areas of business?

A. We reward managers based on the whole company's performance. If a department breaks even, and that's what they were budgeted to do, then they've done their job. We encourage them to help each other and they realize that their bonus will be based on the performance of the whole company and not their individual departments.

Q. What about benefits?

A. We try to provide opportunity, have a good benefit program and create a stable, family atmosphere. We try to make it fun to work here with picnics, trips to sporting events and other activities. We want people here because they want to be here.

Health insurance is open to all employees after six months of service. It's a full package and we pay for the entire plan. There are a lot of companies that try to sway employees by adding a dollar an hour to a paycheck and not provide benefits, but we don't do that.

We feel that the balance between benefits and pay promotes better long-term thinking, and that's what we're here for — the long term. **LL**

Hillmeyer Nurseries is located at 2370 Sandersville Road, Lexington, KY 40511. The phone number is 606/255-1091.

The author is Managing Editor of Lawn & Landscape magazine.

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THE LABOR COST PROPHECY

ANOTHER job is finished and you calculate its profitability. Costs seem to be around \$20 per hour. "We're making a profit!" you say. But I seriously doubt it.

Bright, hardworking and motivated individuals are hard to find and difficult to keep in any industry. You must offer not only competitive wages but a benefit package as well.

You're not offering benefits? Well, here's the prophecy: You and your company will not exist in the future in a labor intensive business. You must offer a variety of benefits to keep employees.

Let's return to that \$20 per hour labor expense. You've included overhead, equipment costs and profit. But, if you keep most of your people year-round, you're losing a lot of money.

Note the accompanying chart. Take an average full-time associate at \$10 per hour and review the direct costs for the company. Add on overtime (1-1/2 normal wage rates) and prevailing wage pay (approximately \$19 less benefits). This person is paid for 52 weeks times 40 hours per week (2,080 hours of paid regular hours), plus 200 overtime hours and 50 prevailing

wage hours. Gross wages total \$24,750. Add on payroll taxes of \$3,486 and we're up to \$28,236. Fringe benefits add another \$2,819. The total cost to you for this person is \$31,055 for the year! Let's see if you can cover your costs.

CHECK COSTS. The final analysis in calculating your actual cost for labor is the total cost divided by the productive/billable time for the worker. Check how many hours this person was actually at work on a billable job. Subtract the vacation (two weeks for 80 hours), holidays (6 days for 48 hours), 200 hours of snow/winter time (roughly four to six weeks), plus about 15 percent of nonproductive daily time spent in loading, traveling, rain delays, callbacks, etc. Total this nonproductive time to get the net billable time on the job.

Your customer must pay for this time unless you want to subsidize the payroll personally. Divide the total cost of this employee by the total number of productive hours on the job. Your net

DIRECT WAGE COSTS		COST TO EMPLOYER	
Wage Rate/Hour	= \$10		
Overtime Rate/Hour	= \$15		
Special Rate/Hour	= \$19 (prevailing wage)		
Total reg. hours/year	= 2,080		
Total overtime hours/year	= 200		
Total special hours/year	= 50		
Total reg. hours/year wages	= \$20,800		
Total overtime hrs/year wages	= \$ 3,000		
Total special hrs/year wages	= \$ 950		
Other wages/bonus	= 0		
Total Gross Wages	= \$24,750		
MANDATORY WAGE COSTS			
Employers' match of FICA	= \$1,803		
Fed. unemployment insurance	= \$ 198		
State unemployment insurance	= \$ 990		
Workmen's comp. insurance	= \$ 495 (2 percent in Ohio)		
Total Employer Mandatory Costs	\$3,486		
FRINGE BENEFITS			
Health insurance	= \$1,300 (one-person plan)		
Paid vacation	= 0 (included in 2,080 hours)		
Paid holiday	= 0 (included in 2,080 hours)		
Wellness pay	= \$ 480 (6 days/year — 48 hours)		
Retirement (company match/)	= \$ 619 (2.5 percent match)		
Uniform	= \$ 200		
Education	= \$ 75		
Transportation	= 0		
Company social function/party	= \$ 25		
Christmas gift	= \$ 100		
Gift (other)	= \$ 20		
Total Value of Fringe Benefits	\$2,819.		
TOTAL LABOR COSTS	\$31,055		
TOTAL HOURS PAID NONBILLABLE			
Paid Vacation Hours	= 80 (2-week vacation)		
Paid Holiday Hours	= 48 (6 paid holidays)		
Hours Off Due to Illness	= 0 (no lost time)		
Winter Nonproductive Hours	= 200 (4-6 weeks or longer)		
Warranty/Rain/Load/Callbacks	= 349.5 (15 percent daily)		
Total Paid Nonproductive Hours	= 677.5		
Total Hours on Job/	Productive/Billable	= 1,652.5	
Total Labor Cost Per Hour on Job	= \$ 18.79		

result (\$18.79) shows what you need to recover per hour to break even for this person to exist in your company. Perhaps I should say for your company to exist.

You can use this technique to calculate your equipment

costs, also. The labor cost prophecy is real. If you want to survive, get with the program. — Steven Buck **LL**

The author is president of Buck & Sons Landscape Service Inc., Amlin, Ohio.

SLASH YOUR CUTTING AND MULCHING TIME BY UP TO 1/2.



Revolutionary, new mulching/finishing mower technology from Bush Hog[®] saves money and time on golf courses, sod farms, athletic fields, large estates and other applications where a manicured look is required.

Money because Bush Hog combines its proven rotary cutter designs with its new counter rotating blade technology to deliver high reliability and low maintenance costs not possible with any other mulcher. Time because, depending on your application, Bush Hog's MTH600, MTH720 and Tri-deck mulchers can trim a third to a half off your cutting and mulching time as they clip and mulch in 60-inch, 72-inch and 15-ft and 17 ft-wide swaths.

Thorough mulching action is created by clockwise turning lower blade traveling at 18,500 fpm and counter clockwise turning upper blade moving at 17,000 fpm. Bush Hog's high tech counter rotating blade technology was proven in hundreds of farm applications. Now Bush Hog has refined this revolutionary mulching concept for landscape and turf applications.



The MTH600, MTH720 and Tri-deck deliver:

- No clippings to dispose of
- Finely mulched grass particles that fall back into the turf to fertilize the soil
- Even distribution across all 60 or 72 inches; 15 or 17 ft.

Rugged, low maintenance features include:

- Bush Hog's two-year limited gearbox warranty
- Front and rear rollers standard to eliminate scalping

- Heavy-duty deck constructed of 3/16 inch material
- High maneuverability
- Floating top and lower linkage for uniform mowing on uneven terrain on MTH models

Cut your mulching costs and time with the proven rotary cutter designs and new counter rotating blade technology from Bush Hog. See the MTH and Tri-deck mulchers at your Bush Hog dealer or write for free literature.


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