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VOLUME 13. NUMBER 3

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FEATURES **AC** No Escaping Success

Idealism brought Steve Coffey into the landscaping industry. But endurance, hard knocks and a thorough understanding of his business costs have kept him here.

11 The Leading Role: Pesticides

changing, and landscape contractors are finding the best approach to be one of open-mindedness.

36 Addressing the Landfill Disposal Crisis, Practically

While composting is on the increase, a high-tech solution is not for everybody. Here, two university managers discuss methods for recycling land waste.

Lawn & Landscape AINTENANCE

5 Making a 5 Profit at Mowing

Perhaps more than ever before, a contractor's ability to determine and work within his costs and expected profit margin will make or break his business.

The Research 54 Revolution

New pesticides and biological products are streaming into the marketplace, but will the customer pay?

EO Learning the Aesthetics, **JO** Benefits of Pond Management

If you're installing, maintaining or subcontracting pond work - or just thinking about it - considerations from the beauty to the necessity must be investigated.

Weed Control: Perception vs. Reality

Poor weed control can signal the end of an account sometimes without any knowledge that something has



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gone wrong. To get by this enigma, it's important to work with your customers to develop reasonable expectations for weed-free lawns.

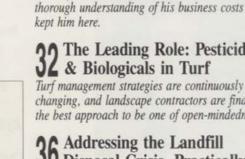
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LAWN & LANDSCAPE MAINTENANCE • MARCH 1992

MAINTENANCE Editor's Focus

EVER TALK ABOUT taking key personnel off site for an intense two or three days of brainstorming? Ever wish you could bounce your ideas off an industry friend just to see if it'll fly?

I bet everyone in the industry, including myself, has reflected on what could have been, only if . . . Only if we had time to take a few days off work to get the creative juices flowing. Only if we had the money to bring in consultants to give our businesses a jump start. Only if everyone in our companies had as much determination and vision to see ideas through to the end.

Well, if you had attended the Executive Forum held recently in Naples, Fla., most of these dreams would have come true. The forum, conceived two years ago by the Associated Landscape Contractors of America, is an intense three-day workshop designed not only for an exchange of ideas and networking opportunities, but as a forum to introduce vision and concepts to overachieving landscape contractors.

All inhibitions and competitive thoughts are left at the door, creating an incubator like setting where ideas are bred at an accelerated rate. The result is a staggering exchange of thoughts and, hopefully, action plans.

Any number of topics would do for such a setting, but this year the coordinators of the Executive Forum dug deep and threw out the concept of total quality management. I know what you're thinking. Quality is something we provide daily to our customers, that's why we're still in business. But let me tell you, after attending this session, quality will never mean the same thing to me again.

And most landscape contractors, even those who participated in the Crystal Ball report session, a precursor to the Executive Forum, admitted they didn't understand this philosophy, let alone practice it in their every day business lives.

Total quality management means taking everything we know about quality, throwing it out the door and viewing quality through the ideas of our customers. And not just the customers we serve externally, but customers within our own firms. Everyone from the president to crew members.

Has it sunk in yet? Probably not. The same pained look of confusion graced the faces of most attendees until midway through the forum. Gradually, the lights began to click on in the minds of many, but for some, the idea never clearly came into focus. And that's to be expected — it's not an easy concept to grasp.



The total quality management philosophy — as was explained to attendees — should help attract and keep quality employees by enabling them to use and grow by reason of their own talent. Additional benefits are reduced cost, and more emphasis on understanding the clients and satisfying their needs.

Want more? The total quality philosophy is "a method of leading and enabling each of your employees to continually improve what they do and how they do it in order to provide your clients exactly what they want in a manner that pleases them beyond their expectations while the cost of accomplishment decreases."

That's a mouthful. Put more simply, the quality process can begin in your firm by assessing the readiness of your team. Ask your people what quality means to them. How do they define a quality landscape job? You have to find out where they stand and resolve the weak areas before moving on.

Once you're in agreement, you've reached a point from which all future decisions can be made. But remember, it's only just the beginning. You have to get each and every one of your employees to buy into the total quality management program. You also have to determine your clients' definition of quality. And don't be surprised if it dramatically differs from your own.

ALCA members should be commended for introducing such a comprehensive and exhilarating topic to the landscape industry. But to be successful, continued seminars and specific action plans are needed.

Look for more information in the months ahead on total quality management. — *Cindy Code*

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MAINTENANCE

Letters

Editor's Note: Last summer, in the height of the summer movie doldrums, LLM asked its readers to envision themselves sitting in a director's chair in Hollywood with a chance to remake some of the movie classics of our time. The only hitch: It had to have a landscape theme. Now, we knew our readers were successful contractors, but we had no idea what was in store for us on the script writing scene. Here's a sampling of the best of the remakes:

Talking Turf

Here are my suggestions for the next movie classics to be remade with a lawn maintenance theme:

"Gypsy Moth": Ex-burlesque queen undergoes strange metamorphosis and paints a dark stripe on her brown fur coat.

"Invasion of the Body Thatchers": West Coast lawn crew goes berserk while trying to conform to all posting regulations.

"Look Who's Talking Turf': Reincarnated Babe Ruth leads campaign against artificial turf sports fields.

Sylvia Hellman Fee Sylvia Fee & Associates Inc. Needham, Mass.

Good Mowing, Vietnam!

Herewith a few suggestions for your lawn maintenance movie contest:

"Good Mowing, Vietnam!": A major mowing contractor expands into the underserved Southeast Asian market.

"The Thistles of October": Broadleaf weeds invade the White House lawn during the 1962 Cuban missile crisis.

"Field of Weeds": Commercial herbicide applicators face their toughest challenge.

"Uncle Muck": Amiable landscaper deals with overirrigated yards.

Finally, "The Jerk II": bored contractor wastes time making up silly film titles when he should be doing honest work.

Hal Edmonds General Manager Lawn Green North Highlands, Calif.

Lawn With the Wind

With apologies to Margaret Mitchell (and Martha Mitchell, for that matter), here's a movie classic re-made with a turf maintenance theme:

"Lawn With the Wind": A still dashing but somewhat older Rhett Butler returns to Atlanta to try and patch up his relationship with Scarlett O'Hara. As his carriage turns up the long winding drive to Tara, he's distressed to find the grounds in deplorable condition.

The rose garden, once the envy of Atlanta society, is overgrown with noxious dandelions; the grass is filled with broadleaf weeds and nutsedge; and the tall majestic oak on the hill is the home of thousands of nasty flying mole crickets.

Fortunately, while he was away, to pass the hours without Scarlett, Rhett went into the lawn care business, forming the "Bonny Green Butler Lawn Maintenance Co." That meant he was not at a loss to solve the many problems besetting the grounds of Tara.

In no time, Rhett, using all the good advice he found in early copies of *Lawn* & *Landscape Maintenance* magazine, has the grounds around Tara looking sensational. Using early Jacobsen mowers and prudent, environmentally sound lawn care practices, the mansion is once again restored to its rightful place in Atlanta society.

But there's trouble on the horizon. Ashley Wilkes, who gave up cotton farming just after the Civil War, returns to Atlanta as an overzealous, wild-eyed activist. Although well-meaning, he's determined to ban every chemical Rhett has at his disposal — even the iodine in his medicine cabinet.

Of course, Scarlett is still carrying a torch for Ashley. Just at the height of mole cricket season, Rhett accidentally finds a note from Scarlett to Ashley promising to wage a slanderous and phony media campaign to destroy Rhett's lawn care business in return for Ashley's vow of undying love.

Rhett is crestfallen and begins to neglect the grounds around Tara. The weeds make a triumphant comeback and the mole crickets are thick on the mighty oak.

With his business in ruin from Ashley Wilkes' smear campaign, Rhett storms down the hall toward the front door of Tara to leave her forever. Scarlett rushes after him, "Oh, Rhett," she sobs, "the mole crickets are as thick as snow on Christmas morning. I need your help. I need a container of malathion. What will I do?"

Rhett turns to her with a disdainful look and says: "Frankly my dear, I don't have a can..."

> Dave Buchanan Jacobsen Racine, Wis.



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MAINTENANCE

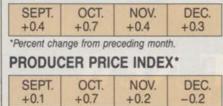
Business Watch

PATIENCE IS A VIRTUE. That tried and true saying is probably the best advice economists and financial forecasters can give to an American public weary of waiting for an upturn in the economy. In fact, a recent survey of the country's corporate controllers indicated that 95 percent felt the recession had not ended and 60 percent believed the recovery wouldn't start until mid summer (see chart).

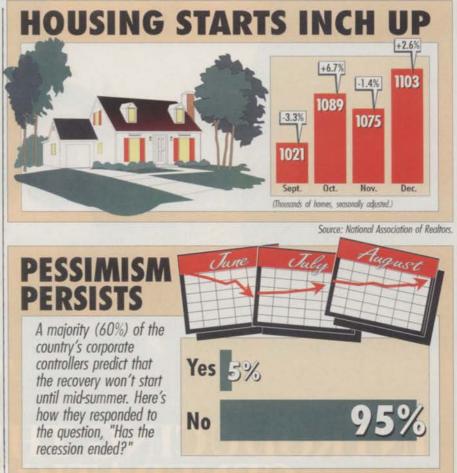
Another indication of the country's ongoing economic problems is reflected in help-wanted advertising. The Conference Board, a private research group which monitors ad volume in 51 major U.S. papers, reported that help-wanted advertising throughout the winter showed little or no improvement. Unfortunately, for those seeking employment it indicates fewer available positions and continued conservative hiring practices by potential employers.

On a more positive note, housing starts showed signs of inching up during the fourth quarter (see chart).

CONSUMER PRICE INDEX*



*Percent change from preceding month.



Source: Controllers Council of the Institute of Management Accountants

REGIONAL REPORT: NORTHEAST

A weak economy continues to batter the northeast region of the United States. But cautious consumers are "getting tired of all the negative talk of the economy," said

Ed McGuire, president of The Lawn Co., South Dennis, Mass. "Year after year you expect things to turn around. We had a decent year in '91 and expect to do OK in '92, but we don't expect to see any growth to speak of. There's no real good news."

McGuire's sentiments are echoed by other lawn and landscape maintenance professionals in the Northeast. Many see no end in sight to the region's economic woes.

McGuire said his company is simply going to have to continue to do what it does well: provide quality service. "If we did it well last year, we're going to have to do it even better this year."

In Connecticut, Dick Tice said he's heard a lot of complaints from others in his industry about cancellations and cutbacks. Tice, owner of T&L Lawn Services, Cheshire, Conn., counts himself among the lucky few who have maintained a stable market position.

"We had a good year last year, but we worked very, very hard to do it. We advertised more than usual," he said. "We had a tremendous amount of turf damage due to the heat last summer, so we got an early start and sent a letter to all of our customers telling them that problems were out there; and we gave them super deals on renovation."

That strategy paid off, Tice said. "Because we took that approach, we didn't get any calls asking us to repair their lawns for free."

Tice doesn't see a turnaround in the economy anytime soon. He said he is somewhat worried about statewide layoffs, many of which are tied to the defense industry.

"I felt two years ago that we may be in trouble because of the caliber of people being laid off. That hasn't hit home yet, but I hear others moaning about cancellations and cutbacks."

Laurence Coronis, president and owner of Coronis Landscaping, Nashua, N.H., said that a stable client base has helped his company maintain revenues. But he noted a lot of "belt tightening" among consumers.

In addition, he's seen a lot of low-ball bidding that ultimately hurts the industry. "There seems to be work out there. The problem is that the owners are being tight with their pennies, and they are beating landscapers up for the lowest penny. It makes it tough to run a business."

Coronis has found networking to be more important than ever. As a result, he travels to trade shows and swaps notes with landscape professionals who have weathered similar economic storms.

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USE READER SERVICE #24

Lawn & Landscape MAINTENANCE

News in Brief

NEWS DIGEST

Deere Ranks First in Magazine Survey

Deere & Co. placed first in the industrial and farm equipment category of *Fortune* magazine's annual survey of corporate reputations, titled "America's Most Admired Corporations." Deere ranked 54th overall among the 307 large corporations included in the 1991 survey.

Deere also ranked first in its industry category in 1989 and 1990, and has customarily finished at or near the top of its industry group, which includes 10 companies.

Texas Nursery Industry Reports Record Year

Total nursery-related sales in Texas reached nearly \$3.5 billion in 1990. All divisions and categories reported increases from 1989 to 1990 with a total sales increase of 24.2 percent. The 1990 figure surpassed the 1983 record high of \$2.8 billion.

The Texas Association of Nurserymen's scope committee analyzes the total sales of lawn and garden products in Texas each year from taxes paid to the Comptroller's Office.

OSHA Revisions Sought by Congress

Sens. Ted Kennedy, D-Mass., and Howard Metzenbaum, D-Ohio, as well as Reps. William Ford, D-Mich., and Joseph Gaydos, D-Pa., have introduced companion bills (S. 1622 and H.R. 3160) which could dramatically reform the Occupational Safety and Health Act. OSHA has not been revised since its enactment in 1970.

The proposed legislation requires employers of 11 or more workers to establish safety and health committees composed of equal numbers of employee and employer representatives. The committee would review safety and health programs, conduct inspections and issue advisory recommendations to the employer, among others.

TV Ad Campaign Targets Waste Disposal

Keep America Beautiful Inc. announced plans for a television public service advertising campaign aimed at educating Americans about the garbage/solid waste crisis. The 15- and 30-second ads are expected to be completed this summer.

Keep America Beautiful is a national, non-profit public education organization.

Pesticides Attacked, Defended In GCSAA Environmental Forum

JAY FELDMANN, Victor Kimm and John Stossell spoke true to form at the Golf Course Superintendents Association of America's recent environmental session in New Orleans, in which the three were pitted against one another in an open forum on specialty chemicals.

Feldmann, national coordinator of the National Coalition Against the Misuse of Pesticides, decried the hazards of specialty pesticides and advocated the elimination of

these products in the long-term. Kimm, deputy assistant administrator for pesticides and toxic substances for the Environmental Protection Agency, followed with an update of groundwater studies, pesticide re-registration and turfgrass management options. Kimm noted that there's more testing today of specialty pesticides than at any point in history.

Stossell, ABC news correspondent for 20/20, wooed the standingroom-only crowd of more than 2,000 with his comical, yet well thought out discussion of the



From left: Kimm, Stossell, Feldmann and GCSAA President Stephen Cadenelli.

media's role in reporting pesticide stories, as well as putting the risk of pesticides into perspective.

"The issue seems to be that left to your own devices you would kill your customers and poison the town," Stossell mockingly told the audience. "But with the help of regulatory and advocacy groups, you won't."

Stossel is best known for his coverage of Maj. Lt. George Pryor who allegedly died from exposure to Daconil on a golf course. Stossell and 20/20 later reported that the show may have been guilty of overkill.

"Some of that's unavoidable. It's the nature of the news to focus on the negative and the dramatic," he said. "If Vic (Kimm) says playing golf is safe, it's not news. If Jay (Feldmann) says you play golf and you're going to die, it's more likely to be covered."

When is something too risky? If it kills one person a year, two, five? Old technologies such as natural gas are accepted by the public, when it's known to kill about 400 Americans a year, Stossell said.

Feldmann contends that the EPA doesn't provide adequate safety measures and that the re-registration task, handed to EPA in 1972, has never been completed. As a result, more than 600 active ingredients have never been tested with modern safety standards. While 71 newly registered pesticides have been through testing, he said, he's not convinced data supporting the pesticides is adequate.

Feldmann concluded by recommending that turfgrass managers look at cultural practices, new seed varieties and methods of changing the expectations of the industry's clients.

Kimm countered with an update of progress the EPA has recently made in the area of specialty chemicals.

"I take pride in my agency. We're able to generate a significant amount of data which is going to provide us with a lot more information to approach the problem of groundwater contamination," he said.

Re-registration, currently under way, is the largest reassessment of pesticides in the United States, but is an area previously hindered by a lack of resources, Kimm said. (continued on page 19)

EXPO 92 Loses, Gains Exhibitors

In spite of the recession, consolidation and cancellations by several commercial power equipment firms, reservations for exhibit space at the 1992 International Lawn, Garden & Power Equipment Expo have increased.

By mid-February, 396 companies had already reserved space at the trade show compared with 379 the same time last year. Forty-two companies increased their booth space and, so far, 30 companies not involved last year have signed contracts this year, according to Dennis Dix, president and CEO of the Outdoor Power Equipment Institute which sponsors the Expo.

Snapper, RedMax, Scag and Toro are among those who have opted not to participate in this year's show. And for some, it may be more than a one-year absence.

Although the recession was not cited as the main reason for leaving this year's show, it may have played an indirect role.

Jim Jenkins of Snapper said the decision is one of cost, resources and benefits. "The pay back is much greater if we spend our time and money elsewhere," he said. "If we're there, it will be on a limited basis — commercial only."

Although the firm supports the OPEI, Scag has decided not to exhibit for a combination of reasons.

"We looked at our own situation and how we could effectively use our resources, manpower and money," said Jerry Bailey, general manager of Scag. "This year, it will benefit Scag and our dealer base to redirect our dollars to dealer training."

The firm prefers to talk with its dealers

one-on-one, but only 3 percent to 4 percent of its dealers attend the annual Louisville show.

Bailey added that the firm hadn't ruled out going back to Expo in the future.



RedMax is concerned about the regionality of the show, according to John Keeler. His firm is another that has elected to take the money previously spent on Expo and put it into sales and training.

Toro's decision not to exhibit at Expo this year is said to be a one-year budget move.

Other exhibitors, while not leaving the show, have elected to decrease space, Dix

said. On the positive side, some companies have increased space and other exhibitors are new to the show.

"The industry is changing. People will drop out and come back," Dix said. "It's an individual decision that companies have to make."

One of the companies reserving more space is Lawn-Wright Inc. "We needed more space inside and in the outdoor demonstration area to show off a new commercial product," said Bill Wright, president. "The money generated by new customers we meet at Expo more than pays for our participation."

EPA Releases 2nd Drinking Well Study

The Environmental Protection Agency released phase two of its national survey of pesticides in drinking water wells.

The results supported conclusions in phase one that there is no immediate, widespread public health threat over pesticide or nitrate residues in well water. The EPA concluded the overall chance of a given well exceeding a health-based limit for pesticide or nitrate contamination is roughly



1 percent.

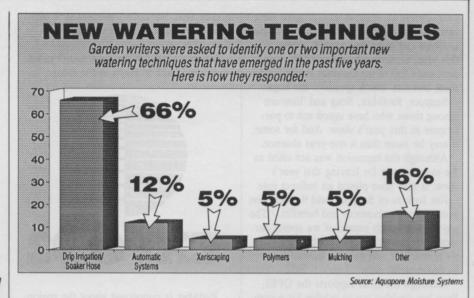
Factors influencing the likelihood of contamination include: rainfall, temperature and pH, pesticide persistence and shallower, older wells. Survey results suggest lower probability of detections in counties experiencing high rainfall, perhaps due to greater run-off, or dilution.

The EPA viewed locally precise pesticide use data — for both farm and nonfarm uses — as critical information for the future, as policies are formulated and improved to protect drinking water wells.

For copies of the study and cost information contact: National Technical Information Service, 5285 Port Royal Road, Springfield VA 22161.

Garden Writers Respond to Water Use Survey

A national survey of 1,138 garden writers for the print and broadcast media showed that only 14 percent of the writers responding were convinced that the products described as environmentally correct were what they claimed to be. In total, there were 503 usable returns (44 percent) from the members of the Garden Writers



Association of America.

Survey respondents were evenly divided as to whether or not to use the terms "environmentally correct" or "environmentally friendly." Forty-eight percent said they would use the term; forty-nine percent said they would not.

Respondents were also asked if the term "environmentally preferred" was more ap-

propriate for suitable products. Only 30 percent said it was better.

The survey also found that 93 percent of respondents believe that garden writers and editors have a responsibility to spread the word about the need for being environmentally responsible and conserving water.

GWAA editorial members identified the



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most popular tips for people when watering a lawn or garden. Among the suggestions: water thoroughly (40 percent); use water conservation techniques (17 percent); know your plants and watering needs (10 percent); don't use a hand-held hose (8 percent); and water at specific times of day (4 percent). Many members gave more than one suggestion.

Respondents identified the most important watering techniques to emerge in the past five years as: drip irrigation/soaker hoses (66 percent); automatic systems (12 percent); xeriscaping, polymers and mulching (5 percent each); and other techniques (16 percent).

The survey was conducted by Hinsdale Marketing Services, Oakbrook, Ill., on behalf of Aquapore Moisture Systems, Phoenix, Ariz. Aquapore was not identified in the survey as sponsor.

Davey Tree Acquires West Coast Firm

The Davey Tree Expert Co. recently acquired Golden Coast Environmental Services Inc. of Irvine, Calif. Golden Coast will be merged with Davey's technical staff to form Davey Resource Group.

Golden Coast specialized in urban forestry consulting, including computerbased tree management systems. Davey's technical group provides research, development and technical support services for the Davey Company's internal operations.

The new affiliation doubles Davey's technical capabilities, allowing the Davey Resource Group to provide enhanced technical services for internal operations and consulting services for the market-place.

Brickman Group Reaches New Markets

The Brickman Group Ltd., based in Jenkintown, Pa., recently opened new offices in Atlanta and West Palm Beach, Fla., as well as three satellite locations in the Baltimore-Washington D.C. area.

Brickman has opened 10 new locations in the last 12 months. Other recent openings include branches in suburban Warrenville, Northbrook and Crystal Lake, Ill., to assist services offered by its Long Grove office.

Likewise, the Laurel, Md. offices re-

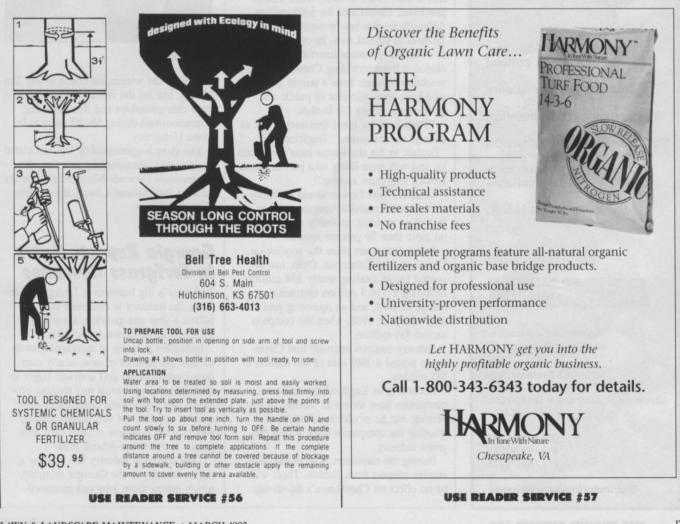
cently subdivided its duties for many of the same reasons, and now hosts three new satellite locations — Columbia and Silver Springs, Md., and Herndon, Va.

The company, which marked its 50th anniversary in 1990, has been awarded nearly 100 national, regional and local landscape design and maintenance honors within the past 10 years.

The locations of the new offices are in response to the firm's concentration of clients. "As our company grows, the customers form a larger radius. We're attempting to shorten the distance between them and us, especially in those instances where we maintain a site — the first step in quality service is location," said Steve Brickman, regional vice president.

The Florida location will focus on maintenance services and have design/build capabilities, and is being managed by Russ Tolle, who guided the opening of the Northbrook office in 1991. Tolle joined Brickman's staff in 1976.

The Atlanta office is situated in Norcross, Ga., approximately 15 miles north of the city, and represents The Brickman Group's first venture in the state. Brian Moore, a member of the Brickman staff since 1977, has been named branch manager.



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Ecolab Plans to Divest ChemLawn Subsidiary

After four years of trying to make a go of ChemLawn, Ecolab Inc. announced plans to divest ChemLawn through a sale, spinoff or other form of corporate disposition. The divestiture is expected by mid-year.

Pierson Grieve, Ecolab's chairman, president and chief executive officer, said the decision to divest strengthens Ecolab's focus on its worldwide cleaning and sanitizing business opportunities.

Ecolab's resolution does not cast a negative note on the lawn care industry. On the contrary, said ChemLawn President David Siegfried. "No one is saying that the fundamentals went wrong, they just have too much to handle. The industry (lawn care) is doing just fine."

Last year, Ecolab of St. Paul, Minn., formed a joint venture with Henkel KGaA and acquired Henkel's institutional cleaning and sanitizing businesses in 19 countries in the Latin American and Asian Pacific regions. The venture was expected to add \$50 million in annual revenues to Ecolab's international operations.

With Henkel, Ecolab has the outlet to broaden its institutional business, an option it didn't have in 1987, when Ecolab purchased ChemLawn for \$375 million. Although Ecolab has invested substantial finances in ChemLawn, its current strategy to direct its resources internationally precluded it from providing ChemLawn the resources it needs from a parent company, said Lois West, director of public and government affairs for Ecolab.

"We'll look for other investors to get us through the transition," Siegfried said. "Ecolab, in the short-term hasn't forgotten us, and will most likely take part in Chem-Lawn's long-term success."

Siegfried said Ecolab would probably shift from a controller/operator role to that of an investor, probably maintaining no more than 20 percent interest.

In the four years since the acquisition, ChemLawn of Columbus, Ohio, has recorded losses totaling nearly \$56 million, including a \$34.5 million restructuring charge in 1989, and an operating profit in only one year, 1988, when the company earned \$14 million.

Industry analysts estimate that Chem-Lawn posted a 1991 loss of \$10 million to \$15 million.

According to Siegfried, a number of companies have shown an interest in investing, but he wouldn't elaborate on whether the companies were within the green industry.

During the transition, ChemLawn will receive support from Ecolab. There will be no effect on ChemLawn's day-to-day operations, or service to its customers. In fact, ChemLawn is currently introducing its custom lawn and landscape program called Ecoscape.

Coach Knight Keynotes Green Industry Expo

Indiana University Head Basketball Coach Bobby Knight will give the keynote address at the Green Industry Expo, Indianapolis, Ind., Nov. 16-19.



Bobby Knight

Knight, the winningest coach in Big Ten history, has led the Hoosiers to 10 conference championships and three national championships during his 20 years at Indiana University.

The show is sponsored by the Associated Landscape Contractors of America, the Professional Grounds Management Society and the Professional Lawn Care Association of America.

Georgia Reports Gains In Turfgrass Revenues

Turfgrass is big business in Georgia. Statewide, the industry is estimated at \$1.2 billion a year and growing, according to the Georgia Turfgrass Association.

Indicators pointing to increased growth include the number of new, nearly completed and planned golf courses; larger attendance at professional turf training programs and educational conferences; increased requests for soil sample testing; and growing numbers of lawn care companies in the metro-Atlanta area.

"The turfgrass industry has become a major industry in the Georgia economy, which means more jobs and increased

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Green Notes

Number one import. Isuzu trucks were rated America's number one selling import commercial truck, according to the most recent vehicle registration statistics published by the Motor Vehicle Manufacturers Association.

Flower tour. The Associated Landscape Contractors of America is sponsoring a member trip to the Chelsea Flower Show and Floriade, May 17-26. The tour includes a full day at the Chelsea Flower Show on opening day in London and a full day at Floriade in Holland, known as "The Greatest Flower Show on Earth."

For more details contact: ALCA, 405 N. Washington St., Falls Church, VA 22046; 703/241-4004.

New pesticide studies. Separate studies — "U.S. Nursery and Greenhouse Markets for Pesticides" and "Distribution of Pesticides and Related Products to U.S. Ornamentals Markets" — are being developed and are open for sponsorship.

If interested in the reports or sponsorship contact: Sarah Landels, SRI International, 333 Ravenswood Ave., Menlo Park, CA 94025; 415/859-3910.

revenues," said GTA's Gil Landry.

One factor underscoring the turfgrass industry's impact on the Georgia economy is the tremendous number of professional lawn care companies doing business in the Atlanta area. With total estimated revenues of \$116 million and an annual payroll of \$53 million, metro Atlanta may be the largest commercial lawn care market in America. A 1989 University of Georgia study of the 18-county metro area found 271 professional lawn care firms operating there, more than 100 of which were less than five years old. These firms employ 4,000 full-time workers and 2,000 part-time.

A study by the Georgia State Golf Association found that in 1988-89, 15 new golf courses opened in Georgia, 12 were under construction and nine were planned.

News

(continued from page 12)

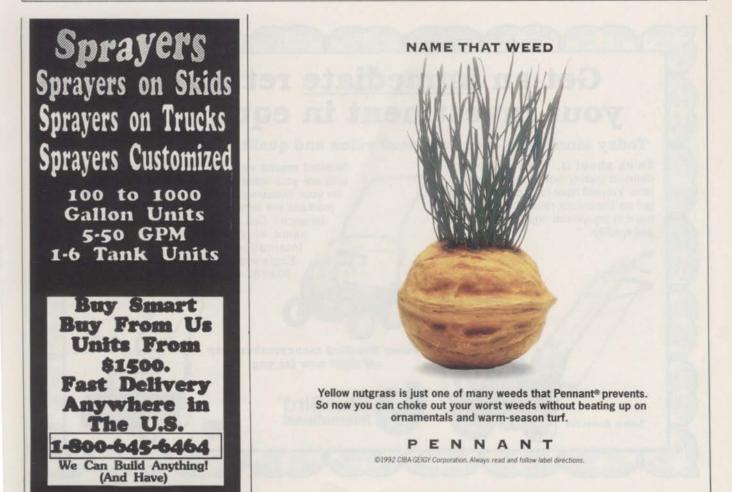
"Since 1988, we have augmented resources and begun the process of enforcing our obligation to re-examine pesticides.

"I don't agree with Jay (Feldmann) that we know nothing about these chemicals. In fact, many of the chemicals, as new perceptions of risk develop, have had their uses modified or eliminated."

As far as groundwater contamination, Kimm said the EPA's general policy is one of prevention.

"We should look at changing our practices before the levels of pesticides getting into groundwaters constitute, on a widescale basis, significant risk," he said. "As a national problem, we think that there is time to effectively deal with this problem, if in fact we do react."

Regardless of differing points of view on the use of pesticides, Stossell said, he still feels the best regulatory group is the consumer. "If you give the consumer the information, the market does regulate itself," he said. "A free market works in mysterious ways. Getting information to the people solves problems better than regulation."





Association News

APRIL IS NATIONAL Lawn Care Month. To raise public awareness, the **Professional Lawn Care Association of America** is sponsoring a month's worth of education for the general public.

To promote this third annual event, PLCAA mailed publicity kits to 3,000 newspapers and magazines. Press kits contain six press releases promoting the benefits of healthy turf.

An extensive radio and television campaign is also under way and will continue throughout the summer. This includes a public service announcement on grasscycling; five radio PSAs to 2,000 radio stations, distributed two weeks apart; and a video news release to 200 television stations. PLCAA President Bob Andrews was interviewed for the segment.

The PLCAA asks its members to pitch in and promote the event. Members can help by distributing press releases to local media, organizing community events, sending out flyers and any other means of promotion.

For More Information...

PLCAA

1000 Johnson Ferry Road, NE Suite C-135 Marietta, GA 30068-2112 404/977-5222

GMAW

6515 Seybold Road Madison, WI 53719 608/274-6311 1250 I St., NW Suite 500 Washington, DC 20005 202/789-2900

CLCA 2021 N St., Suite 300 Sacramento, CA 95814 916/448-CLCA



AAN

1250 I St., NW Suite 500 Washington, DC 20005 202/789-2900

FTGA

302 S. Graham Ave. Orlando, FL 32803-6399 407/898-6721

As an Earth Day tie-in, the association is highlighting its grasscycling public education campaign to encourage more people to recycle lawn debris.

The **Grounds Management Association** of **Wisconsin** is doing its part to celebrate the month by sponsoring a "Benefits of Turf" poster contest for school children in grades 6-8. To enter, children are asked to create a poster that demonstrates why quality turf areas are beneficial. Judges include a television newscaster, a newspaper reporter and a University of Wisconsin professor of horticulture.

A grand-prize winner will be selected from individual grade winners. Grand prize is a Milwaukee Brewer baseball week-



end for a family of four, including deluxe hotel accommodations, game tickets and a soda and bratwurst tailgate party.

First, second and third place winners will be selected for each grade level; they receive \$200, \$100 and \$50 savings bonds, respectively.

To receive more information on National Lawn Care Month, contact PLCAA.

The **National Landscape Association** elected its 1992 board of directors.

Brian Storm, president and CEO of TerraScaping Inc., a landscape construction and management firm in Birch Run, Mich., was elected president.

He has served as a member of the board of governors of the American Association of Nurserymen, and is past president of the Michigan Nursery and Landscape Association.

Other elected board members include: William Caras, Caras Nursery and Landscape, Missoula, Mont., vice president; William Akehurst, Akehurst Landscape Service, Baltimore, treasurer; and Frank Colvett, GreenScape Inc., Memphis, Tenn., immediate past president.

NLA directors are: Todd Kennedy, The Kennedy Nursery, Greenwich, Conn.; Walter Imahara, Imahara's Landscape Co., Baton Rouge, La.; Kathryn Mathewson, Secret Gardens, San Francisco; and Richard Gooding, Gooding's Nursery, Sherrodsville, Ohio.

GreenTECH/92 returns to the West Coast for its 13th year. Sponsored by the **California Landscape Contractors Association**, this year's show takes place at the Long Beach Convention Center, April 29-30.

More than 300 exhibits will showcase the latest offerings in landscape software, irrigation equipment and supplies, seeds, soil amendments, fertilizers, site amenities, equipment and more.

In addition, eight educational seminars will be held: workers' compensation claims, marketing environmentally safe products, strategic planning, advanced bidding and estimating, performance management, SB 198 compliance workshop, cultural practices to reduce pest problems and computer imaging.

Admission is free with preregistration; \$5 at the door.

The American Association of Nurserymen

is offering a credit card processing program through National Processing Company. NPC is the largest merchant bank card processor of VISA and MasterCard transactions in the United States.

Because of NPC's size, AAN is able to offer a competitive, comprehensive and inclusive discount rate as a members-only service.

The AAN/NPC credit card processing program provides the following services at no additional charge: intercharge fees, authorization fees, toll-free 24-hour customer support, supply fees, monthly fees, overnight terminal replacement, assessment fees, reporting fees, chargeback fees, start-up fees and bank deposit fees. These services are included in the discount rate.

The Florida Turfgrass Association and Re-

search Foundation, in conjunction with the University of Florida, has pledged \$140,000 to a turf industry survey. The survey will measure the economic impact of turfgrass in the state.

The comprehensive report is estimated to cost \$345,000, with \$205,000 donated by the University of Florida. It completes the second half of a proactive plan by FTGA to develop new awareness for the industry. The association recently funded Envirotron, a new research laboratory.



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USE READER SERVICE #28

Irrigation News

Lawn & Landscape

One-Day Seminar Covers Design, Maintenance Tips

WEATHER-MATIC OFFERS a one-day seminar for landscape irrigation professionals. Led by Richard Choate, the seminar covers a broad range of landscape irrigation and system design topics.

The seminar is divided into three parts: "The Water Management Muddle," including water supply, water conservation, soil-water-plant relationships and precipitation rates; "Theoretical Performance vs. Actual Performance," including product dependability/maintenance cost, system control, project variables and design; and a question and answer session.

All attendees completing the seminar receive a certificate of participation.

Choate is co-author of the *Turf Irrigation Manual*. He has more than 30 years of professional experience in design, sales and training; and is a licensed irrigator in Texas and an affiliate member of the American Society of Landscape Architects. For further information, contact: Dick Choate, Weather-matic, P.O. Box 180205, Dallas, TX 75218; 214/278-6131.

CLCA Offers Irrigation Certification Program

The California Landscape Contractors Association administers a certification testing program for landscape irrigation. The program is part of CLCA's Certified Landscape Technician Program, which also offers construction and maintenance testing programs.

The irrigation exam is a one-day, handson field test that evaluates applicants in the following areas: general irrigation comprehension, plan reading, first aid and safety, main line and lateral line installation, sprinkler and valve repair, plant and soil identification, controller operation, auditing and the fundamentals of a water management program.

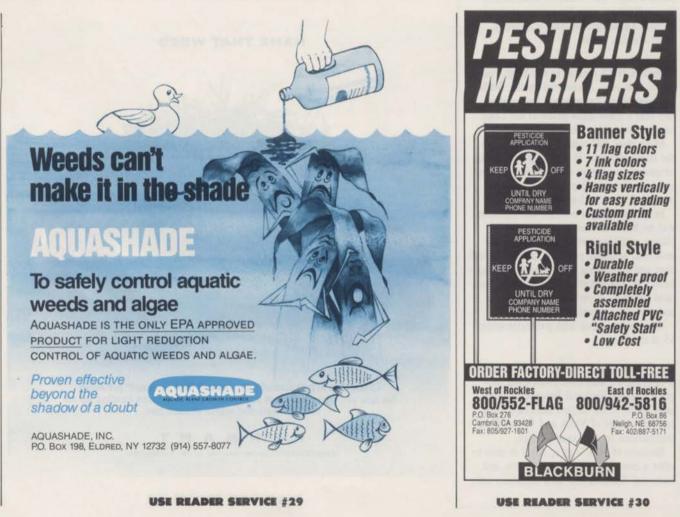
Successful completion demonstrates that a person has the minimum skills to maintain an irrigation system and understand the fundamentals of water management.

Applicants must pass every problem to become certified. Those who do not pass may retake the failed portions on the next test date.

Persons who pass each test become certified landscape technicians. The distinction between irrigation, construction and maintenance technicians is made on all official documents.

Certification is not a substitute for the California landscape contractor's (C-27) license, and passing the certification test does not count toward the state license. The goals, subject matter and procedures of the CLCA certification test are different from the licensing exam conducted by the Contractors State License Board.

Irrigation exam fees are \$125 for CLCA members; and \$175 for non-members. For



further information, contact: CLCA, 2021 N Street, Sacramento, CA 95814; 916/448-2522.

Zoo Saves Water with "Solar" System

The San Diego Zoo installed a light-energized computer to control irrigation and conserve water.

LEIT 8000 from Solatrol is a computercontrolled irrigation system that is fueled by daylight. No AC power, batteries or large solar panels are required.

The system provided convenience to the zoo, because no excavation was required and visitors were not disrupted. Installation consisted of connecting the computer to nearby manually operated valves already in the ground.

The system also allows the zoo to conserve water. The computer automatically accommodates different soil types and terrain conditions and adjusts water durations as seasons change.

For extra flexibility, LEIT 8000 modular units can be linked together with digital radio accessories into centrally managed systems of any size.

BILLMASTER does it ALL

Poster Traces Roots of Leisure-time Sport

A poster tracing the history of golf is available from Hunter Industries. The 25-inch by 38-inch color poster highlights important developments and personalities in the game of golf over the last 200 years, including players, course designers and equipment.



The "Innovations in Golf" poster traces the sport's history.

The poster was illustrated by Texas artist Mark Weakley and is based on research from private historical collections and early photographs. It is available at no charge to irrigation and golf industry professionals and educational institutions.

For a copy of the poster, contact Hunter

Industries, Communications Department, 1940 Diamond St., San Marcos, CA 92069; 619/591-7147.

Corporate Center Is Site of Irrigation Project

A major landscape and irrigation installation was recently completed on the new Ameritech Center in Hoffman Estates, Ill.,

In July 1990, work began on the 237acre site. Project designer was Joe Karr Associates. Landscaping was coordinated through five landscape companies.

For the project's irrigation needs, Muellermist Irrigation Co. created three temporary holding areas for trees and shrubs. Riser pipes with impact heads were used for shrubs, while the tree areas used a drip irrigation process.

The permanent irrigation system services nearly 5,000 trees, more than 330,000 deciduous shrubs and 151 acres of grass. One master computerized controller and nine additional controllers, each with 20 zones, are programmed for irrigation.

In total, more than 2,200 sprinkler heads, 155,000 linear feet of piping and 300,000 feet of electrical wire were installed.



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USE READER SERVICE #32

LAWN & LANDSCAPE MAINTENANCE • MARCH 1992

You've got a lot of jobs ahead, including that big office park. Your first cup of coffee hasn't started working yet. Fortunately, your new Honda mower starts easier. And all







that powerful Honda 13 horsepower OHV engine. Plus, those slopes aren't tiring you out. That's because

the twin hydraulic pump system lets you control power

to each drive wheel independently. You simply balance the power with two levers and the mower tracks straight, even on slopes. You do more work with less fatigue. Honda's two-step deck combines high-vacuum with a unique baffle design and a wide chute. The result is a clean, even cut. It's more efficient, so your work is finished on time and looks well

manicured. And that can make you look pretty good to your customers.

After lunch (a novelty you could get used to) you stop by your Honda dealer for some supplies.

You haven't needed oil in a while, so you grab a little just in case. The dealer then reminds you about Honda's

(10) (10) (10)

You've finished the first job ahead of schedule. Maybe it's

Before you move on, you stop to admire your handiwork.



Oil Alert[™] which will sound a buzzer before the oil falls below a safe level. And. he introduces vou to some of their trained service people. It's nice to know they're available to help. But with a Honda, you probably won't



The office park. They like their grass trimmed a little higher. Instead of taking your mower back to the shop to adjust it, you simply

remove the retaining pins to adjust the cutting height without any special tools. And aren't you glad Honda offers a choice of 36" or 48" cutting width?



You noticed Honda's larger drive wheels when you had to navigate around a bird

bath and squeeze between two boxwoods. Honda's zeroturn radius makes it easy to maneuver in tight spots. And vou feel secure knowing that if you have to release the controls. Honda's interlock system offers you the safety and peace of mind you've come to expect from Honda.



All your work is finished, and the truck's loaded. You could actually squeeze in an extra job.



But that's up to you. Because while this new Honda is a better way to get to work, it also makes it easier to leave on time.

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9992 American Honda Motor Co., Inc. For optimum performance and safety, please read the owner's manual before operating your Honda Power Equipment.

SCAPES INC. HEADQUARTERS: Atlanta, Ga.

SATELLITE OFFICE: Washington, D.C.

FOUNDED: 1976 (inc. 1978)

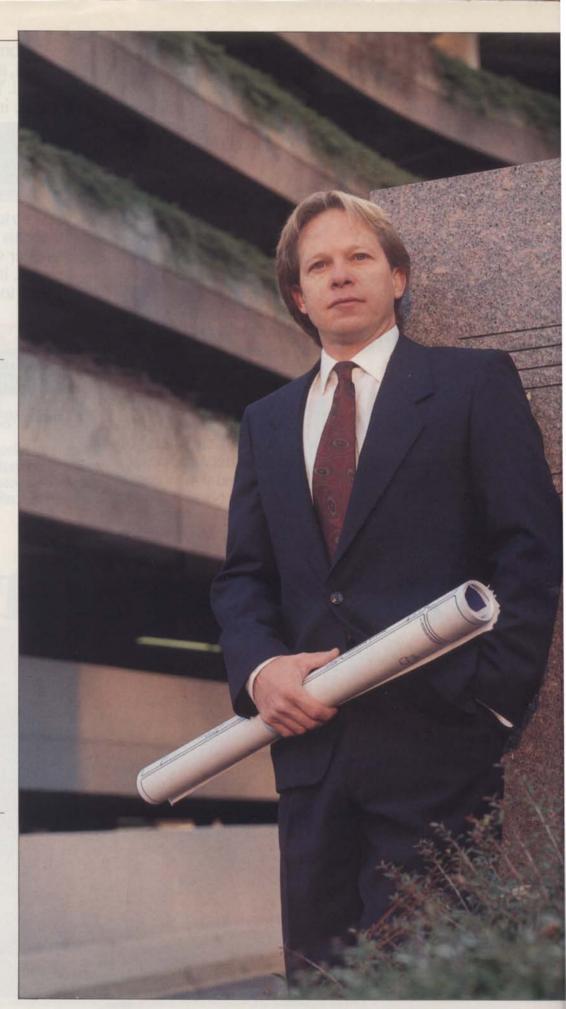
OWNER: Steve Coffey

PRIMARY SERVICES:

Landscape installation, maintenance, irrigation maintenance, seasonal color, landscape consulting. Specializes in rooftop gardens.

> EMPLOYEES: 50-60 full-time 110 seasonal

1991 NET SALES: \$5.5 million



COVER STORY

NO ESCAPING SUCCESS

Idealism brought Steve Coffey into the landscape industry. But endurance, hard knocks and a thorough understanding of his business costs have kept him here.

By Julie A. Evans

IF YOU WANT TO learn the secret to Steve Coffey's success, you have to buy the book. Coffey, the 38-year-old owner of Scapes in Atlanta, based much of his business philosophy on a borrowed paperback, "The Win/Win Negotiator," by Ross Richard Reck.

"It teaches you how to reach an agreement with your client that is beneficial to them and beneficial to you," Coffey said. "If you create a win/win relationship in a contract, it's destined for success."

That philosophy has paid off handsomely for Coffey, whose landscape maintenance and installation firm grew to \$5.5 million last year.

Growing up near Detroit, Coffey was more familiar with auto mechanics than with landscape maintenance. It wasn't until his father moved south and bought a golf course that Coffey learned some tricks of the landscape trade, helping out with mowing, pruning and equipment repair.

Nowadays, Coffey spends more time pushing ideas than pushing a mower. But that's what pleases him most about his business.

"I like giving direction to other people. That's what really makes me tick," he said. "I'm different than most people. Most people like to do it themselves and see the accomplishments. I don't like that. I like sharing an idea or concept and seeing it executed."

HUMBLE BEGINNINGS. Coffey started small with a one-man mowing service in Knoxville, Tenn. In 1976, with a borrowed push mower and a Triumph Spitfire, he opened Landscape Services Inc. (Scapes' previous name) with high hopes and few prospects.

"There was no investment or equipment purchases the first year," he recalled. "I did buy a mower the second year, a Hustler lawn mower which was very new on the market. I was one of only two people in the city with a Hustler."

Revenues that first year were a meager \$12,000. Halfway through the year, he hired his first employee, then added a few others the following year.

In 1978, Coffey incorporated his business and hired a salesman. During those early years, he assumed no debt.

"The only money to grow was from money that I generated from work. That was the only capital," he said. "I never had a capital loan or borrowed any money at all. My house payment was \$85 a month and I was virtually debt free. And so the money I made - I just made downpayments on equipment with that."

Over the next five years, Coffey's company grew at a steady rate. Service offerings expanded beyond mowing and into installation and maintenance. In 1982, the World's Fair came to Knoxville, preceded by new business opportunities for ambitious landscape contractors. Coffey was among them. By 1983, Scapes was a million dollar company and poised for growth.

UP ON THE ROOF. That year, Coffey moved his company to Atlanta and renamed it Scapes. At that time, the city was bustling with new construction. "We came in during the time when the market was open. There was more work than anyone could do."

His biggest breakthrough came in 1985, when Portman Barry Investments, a premier developer and architectural firm, tapped Scapes for Northpark Town Center, an ambitious, self-contained office community outside of Atlanta. The ongoing project now has two phases completed, buildings #400 and #500. Scapes was awarded contracts for the \$2.2 million landscape installation project, which included rooftop gardens and roadways around the buildings.

The project buoyed Scapes' already growing reputation. More high-end installation and maintenance accounts followed, primarily office buildings, hotels and large apartment complexes. With its quality work and capacity to undertake difficult construction jobs, Scapes became a serious contender in the Atlanta landscape community.

GROWING PAINS. But things began to go slightly awry just as the company reached its sales peak. Despite steady growth, Scapes experienced growing pains in the latter half of the 1980s.

The company *appeared* to be on track: In 1987, Scapes opened an office in Washington, D.C., and new accounts continued to pour into the Atlanta office. But Scapes wasn't prepared for its success. The company was growing too fast.

Things came to a head about three years ago when the company hit the \$6 million mark — its highest point ever. Coffey had to retreat from those sales figures and re-evaluate the company.

"We backed off after we did almost \$6 million worth of volume and lost money," he said. "We backed down and began to grow in a more controlled fashion. We backed down to \$4 million volume and we're just now back up to the \$5.5 million range.



"We outgrew our capital base, and we outgrew our quality employees," he explained. "We didn't have enough employees who had been with us for a long period of time and shared with us our vision and our philosophy. So we had a lot of people going in different directions and we had a lot of money flying, but none of it hit the bottom line."

In addition, employee burnout was creating a "revolving door" situation. According to Coffey, 80- to 90-hour work weeks were the norm in those days.

"I think we've stabilized from a management standpoint, where we don't have to put quite the demands on them that we did at one time. We organize better now, too."

Finding the right employees to please the demanding Coffey would prove to be one of the major saviors to Scapes' survival. By Coffey's own admission, things didn't begin to really click until he assembled his current team of marketing, maintenance and sales professionals.

That team includes George Allin, landscape division manager. Allin is an "unbelievable guy," Coffey said, "who's probably done more for Scapes than I have."

Allin joined Scapes in its early years, then left the company to enter the ministry. Last year, he returned to Scapes, much to Coffey's delight.

"George has the highest character, the strongest character, of anyone I've ever known," Coffey said.

Another valued member of the Scapes team is Ray "Cool Hand Luke" Wiedman, "an unbelievable guy in his own right," Coffey said. "Nothing upsets the guy. He provides a lot of stability for the company."

As maintenance division manager, Ray is responsible for the on-site supervision and daily scheduling of crews.

On the marketing end, Chris Malham and Mark Stalnaker pursue new accounts for the company. Malham handles public relations and marketing for the Atlanta and Washington D.C., offices. He's an enthusiastic newcomer to Scapes, joining the company in 1989.

Stalnaker sells landscape installation. In his seven years with Scapes, he's been instrumental in successfully bidding important accounts for the company.

Other Scapes' team members include: Barry Schneider, the Washington, D.C., manager, "a strong guy, highly motivated, runs our D.C. branch lock, stock and barrel," Coffey said; and Roger Winans, controller, a "computer whiz."

"You can see what makes Scapes," Coffey said. "These guys make it happen."

TRACKING GROWTH. But quality employees weren't enough to strengthen Scapes completely. Scapes lacked one important element, Coffey said: a system for tracking growth.

He found help from an unlikely source: an executive from Mary Kay Cosmetics. While in Washington, D.C., Coffey heard the man explain how the cosmetics company had lost market share due to shortfalls in its inventory system.

"(That system) was just eating their lunch," Coffey said. "So they came up with a reporting system where by 10 a.m. each day, they know every sale that was made nationwide the day before. They estimate production based

Trees for a rooftop garden project were lifted up via crane.

on what they think sales are going to be. At 10 a.m. today, they adjust production as to actual sales. And by 4 p.m. this afternoon, all of the orders are filled and inventory is down to zero. I turned green with envy when I heard the man talk about that."

Coffey combed the market in search of software that would help him create a similar system. When he failed to find it, he designed his own. The result: a system that allows him to track every expense, every man hour budgeted, daily.

"If I allocate three man hours to plant a particular size or type of tree, that allotment is given to the project manager. He in turn knows what the budget is. That's a communications tool between my estimating department and my production department," he said.

In the evening, project managers fax their production reports to the office. The next morning, the controller takes the reports and inputs all information into the accounting system. He then runs a report showing whether Scapes ran over budget or under budget for labor.

"We know each day if we produced enough volume to break even and if we produced it efficiently enough," Coffey said.

"It sounds simple, but it's very involved when you try to set it up. It took 10 years to get there."

Coffey relates his tracking system to scorekeeping. "If you were to ask a basketball team to play another team and not turn on the scoreboard, they would stop the game pretty soon and ask how they're doing. I can just imagine the referee saying, 'go ahead, play the game, and we'll tell you what the score is six weeks from now when your financial statement comes out.'

"If you're not getting the score as you go, you tend to play wrong. And that's what I call it. I call it a scorecard."

A CHANGING MARKET. Things have changed a lot since Coffey came to Atlanta. The current economy has hit a low point, forcing companies to re-evaluate business strategies. Scapes is no different.

"The Atlanta economy is at its lowest since I've been here," Cof-(continued on page 30)

Use the Turf Care[®] Pros for any number of growing problems. 104 to be exact.

101. Rus

Botrytis Blight

8. Brown Patch

Professionals count on the Turf Care Pros. To treat diseases, Daconil 2787[®] is the cornerstone of your management program. The broadest-spectrum fungicide on the market, it controls 12 major turf and the major ornamental diseases. And there's never been a documented case of disease resistance to Daconil 2787.

84. Goosegrass

37. Brown Sp

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97. Dandelions



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33. Leaf Spot

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count out diseases and weeds — 104 to be exact.

ISK Biotech Corporation, Turf & Specialty Products Division, 5966 Heisley Road, P.O. Box 8000, Mentor, OH 44061-8000.

Ray Blight

42. Rhizoctonia Bligh

No Escaping Success

(continued from page 28)

fey said. "We're hoping it will kick back soon, but realistically, it's as low now as it's ever been."

Maintenance accounts that used to be automatic renewals now come up for bid every year.

And the Washington, D.C., office has become almost strictly maintenance. Scapes rarely bids installation projects there due to a competitive, "cut-throat" climate.

"We were bidding jobs at below cost and still being beat badly, so we backed out. Let others go at it and when they kill each other off, we'll go in and do the landscaping," he said.

Yet despite the tough business climate, Scapes has managed to maintain growth of 15 percent to 20 percent per year. Coffey admits that he doesn't have all the answers to marketplace survival, but he does have some basic strategies.

"We're trying to be more professional than our competitors," he said. "We're trying to keep our noses cleaner than our competitors. In other words, we're not going out and spending extravagant amounts of money or incurring debt. We're trying to stay as liquid as possible. And we're generating more long-term plans than we used to.

"We used to think about next week, next month. Now we're looking five years down the road — where do we want to be and how do we get there?"

Coffey said his employees and the new tracking system have safely steered the company through rough waters.

"You could run a \$50 million or \$100 million company on this system. But that's only one part of it. You still need to train your employees. It doesn't happen in a week or two months. So you have to grow slow, 15 to 20 percent growth per year. After you reach a certain size, that's about all you can sustain and really keep it controlled.

"We're very, very cost conscious. There's not an employee in our company that doesn't know what a budget is on every job, down to every last detail. To say that we got detail would be an understatement, it really would. If someone beats us on price, they don't know what they're bidding."

Finally, vision is integral to the Scapes' success story.

"We're a growing, cutting edge company, and I think that's attractive to a lot of people. We have a vision. We may never achieve all of it, but one thing that can be safely said, we don't lack vision.

"When I was driving in my Spitfire, I dreamed of being a million dollar a year company. That dream came true. Now there are other dreams."

In the following interview, Coffey shares his perspective of the lawn and landscape industry:

Q: Describe your business philosophy.

A: Personalized care. Creating a winning situation or arrangement for the owner and caring about what he is concerned about; taking his concern upon ourselves and managing that concern.

Q: Describe the management style that works best for you.

A: Sharing the vision with managers and then executing it. Manager is such a cold word. I prefer key personnel.

Q:What was the best business decision you ever made?

A: When I stopped the growth process and began to try to get the company under control. I realized that bigger is in no case better. Somebody once said, that when companies move from the idea that more is better to better is more, then they're moving somewhere.

Q: What was your worst business decision?

A: Debt. Incurring too much

debt during the early days of growth when you could see no end (to growth) and you thought it was going to continue forever, so 'buy more and more and somehow you would pay for it.'

Q: What woke you up to the fact that you were incurring too much debt?

A: When my break-even point was \$500,000 per month, and my capital base would allow me to produce \$300,000 per month. That will wake you up in a New York minute.

Q: Does continuing education play a role for you and your employees?

A: Absolutely. The day you stop learning is the day you stop growing. Continued education to me is a way of life.

I had no formal education per se. Although I went to technical school, I really didn't have the kind of thing Ray had where his "education" began and ended. Mine doesn't end. I don't consider myself to be educated so I look for education everywhere.

Q: How about continuing education for your employees?

A: Absolutely, and I plan in the future to move more and more into continuing education as profits allow. I hire people to the tune of \$1,500 a day to come in and (continued on page 96)

REACHING NEW HEIGHTS

IN 1985, SCAPES undertook its most ambitious project to date, a \$2.2 million landscape installation project for Northpark Town Center. Developed by Portman-Barry Investments, the self-contained office community consists of two office towers anchored by above-ground walkways. Scapes was chosen to install rooftop gardens for its two buildings and landscape roadways around the building.

Finding plant materials for the project provided an early challenge. Coffey traveled the country in search of the specified materials, which included: 60 5-inch caliper red sunset maple trees for the rooftop garden; 240 3-inch caliper weeping cherries for balcony planters; 47 6-inch caliper willow oaks for ground level; and 165 5-inch caliper Scarlet Sentinel maple trees to line the center median of the surrounding parkway.

The red sunsets proved extremely hard to find. "We checked everywhere in the Northeast and Midwest and there were no red sunsets of that size," Coffey said. "I finally came up with a lead on some in Oregon."

But the project stalled before it got far off the ground. Pace Construction, the contractor, was running behind schedule and had made some costly construction errors. Meanwhile, Scapes was sitting on top of some expensive plant materials.

"Around April, I notified the owners that it was getting to late to sit on it anymore," Coffey said. "We had to move. We had to either dig the trees, bring them in and hold them; or mothball the job until fall."

The solution: Scapes built a temporary nursery and irrigation system on-site for the more than 750 trees it had by then purchased for the project.

"Then, as they got the job ready over summer, we would go across the street to the nursery, pull the trees out of the sawdust, haul them across the street and crane them onto the roof."

At building #400, the roof garden sits atop two levels of office space. Underneath are five levels of parking deck, ranging anywhere from 75 feet to 100 feet above ground.

Because of the uniqueness of the project, specialized equipment was required. Trees were installed by crane, either directly or through maneuvering.

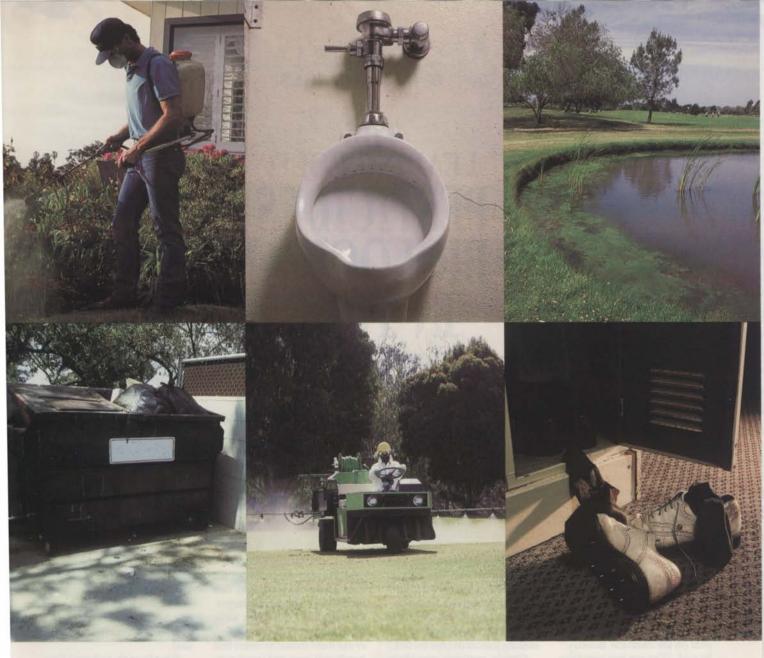
Soil was lifted onto the roof top via crane with a pan that Coffey and his team designed, similar to what is known as a "skip pan" in construction. In total, 3,800 cubic yards of soil went on structure for building #400. Scapes bought the soil in bulk and mixed it, complying with stringent weight constraints of no more than 6.7 million pounds saturated weight.

The rooftop project also includes sunken terraces. All trees, plants, soil and gravel had to be brought into this area by wheelbarrow because no crane would reach it.

Building #400's rooftop garden project lasted nearly a year, including allowances for construction downtime. Compared to that project, building #500 was a "smooth flow of work," Coffey said.

Today, Scapes maintains its landscape installation at Northpark Town Center. Two full-time Scapes employees devote 100 percent of their schedules to maintenance, with workstations at the site.

Future construction plans for Northpark Town Center may include more installation projects for Scapes.



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DESPITE THE environmental craze depicted regularly in newspapers and through TV news reports, synthetically derived pesticides continue to play a key role in the treatment of lawns and ornamentals, according to contractors and researchers.

At the same time, biologicals are gradually becoming a larger part of the maintenance pie. While some say they haven't yet truly arrived, the impetus has long been in place to integrate these products into the service arsenal of lawn maintenance operators.

While many contractors said they are experiencing almost no customer complaints about traditional pesticides, just as many of them are now providing alternative care programs for customers who desire such an option.

Richard Edwards of Gro-Green Lawn Care & Landscape Services has been operating his business in Baton Rouge, La., for four years. The 75 percent residential firm has faced no problems with pesticides. "Our whole economy in this area, from Baton Rouge to New Orleans, is heavily dependent on the chemical industry," he said. "I've run into very little apprehension or concern."

It's common for lawn and landscape professionals to assure customers that blanket applications have given way to targeted appli-

THE LEADING ROLE: **PESTICIDES** & BIOLOGICALS IN TURF

Turf management strategies are continuously changing, and landscape contractors are finding the best approach to be one of open-mindedness.

By Bob Gitlin

cations. But in preemergent situations, blanket treatments and tank mixes cannot be avoided. "With some preemergent materials," Edwards said, "there's no effective way to spot treat them. There's nothing you can do after the fact."

Certain pesticide considerations are strictly the province of the contractors themselves. For instance, Louisiana's warm-season grasses don't respond well to anything with 2,4-D, he said. It's important to tell concerned customers that pesticides may not even need to be used, said Bob Andrews of The Greenskeeper, Carmel, Ind. "But by the same token, customers that want to *never* use them should be aware that weeds will grow and insect control will be impossible."

Organics alone won't reduce weed and insect populations, he added. A lot of products that advertise themselves as organic — therefore "safe" — have greater toxicity levels if misused than do pesticides.

PROFESSIONAL OR DIY? Employing a contractor reduces the likelihood of pesticides being applied — which is the problem with most do-it-yourself alternatives.

"Competent, ethical lawn care companies feed turf and ornamentals quality fertilizations, then selectively go back and remove pests as needed, as opposed to an automatic 100 percent coverage of the entire area to kill something whether it's present or not," Andrews said.

The lawn care customer who stays for two or three years with a program that includes pesticides will see radically reduced need for their use. Crabgrass control is a good example.

"As you build up the thickness, health and vitality of the lawn, you limit the need for blanket applications of pesticides. Crabgrass flourishes in thin, worn-down, weak areas. It can't break through that healthy turf."

Same with broadleaf weeds, he said.

Steve Derrick, technical director at Orkin Lawn Care, Atlanta, has a ready rule of thumb for when one should use pesticides on turf and ornamentals: "When you don't have a good alternative for

ARMING YOURSELF AGAINST ODORS

THE ODORS associated with turf maintenance chemicals can be unpleasant, leading to the uneasy perception that breathing these odors causes the pesticides to become absorbed into the body.

As unfounded as this line of thinking may be, controlling odors has become one of the biggest problems chemical applicators face.

Masking agents are one of the most commonly used defenses against pesticide chemical odors. While these products overpower or cover odor, they do not remove its source. Once the masking agent's perfume wears off, the original odor could linger.

Newer to the industry are odor neutralizing agents which applicators can use in their chemical tank mixes.

Epoleon Corp. was the first to introduce odor neutralizing agents, which decompose or convert a chemical's odor-producing impurities into non-odorous compounds.

Three years ago, in cooperation with DowElanco, Epoleon for-

mulas were tested with Dursban L.O. Studies found that odor-free pesticide applications were possible using an organic, non-toxic, biodegradable component.

Not all neutralizers are equally effective. Some helpful guidelines:

• Ask for a phytotoxicity test showing that the neutralizer is harmless to all surrounding plant life; and that if added to your tank mix will not affect the chemical's active ingredients.

• To determine if a product contains emulsifying agents enabling it to mix well with other chemicals, add plain tap water to the neutralizer and stir. If the solution turns a cloudy white, it probably does not contain a higher grade of ingredients.

• If a neutralizer contains a perfume or some other type of artificial fragrance, make certain your clients will enjoy the fragrance.

• Always check product ingredients and request a Material Safety Data Sheet from the manufacturer. — *Epoleon Corp.*



An intelligent pesticide program builds up the health of landscape plantings, limiting the need for blanket applications and reducing long-term pesticide usage rates.

control, and they do no harm to the environment."

SORTING IT OUT. Interest in biological products is increasing. Almost any lawn maintenance firm can say they've investigated the possibility of offering alternative products to their customers. But contractors remain resolute in offering products with the best control at the lowest price possible to their customers.

Alternatives to synthetic chemical pesticides too often are short-acting and overly picky killers. For instance, pesticidal soaps for ornamentals aren't effective for long, and they only provide control for a few insects, he said. "That target insect has to be there. You couldn't protect your tree with those soaps."

There is also the option of turning lady bugs or praying mantises loose to eat aphids. These strategies, though decades old, appear more and more impractical. You can order these "good" insects, but will your customers go for it? Besides, it's slow control, lacking the efficacy of straight chemical treatment.

Ciba-Geigy's new Exhibit biological, which unleashes live nematodes out of gelatinous suspension, has raised interest among lawn and landscape contractors, but loosened few of their purse strings.

The major application is greenhouses and nursery stock as of now. Nematode spraying, though an exciting development, as yet does not supplant chemical treatments, Derrick said.

"It works but is limited to whatever pests those nematodes attack. I can spray them all over the place, but what do I do about the thrips, mites and aphids?"

The chemical half-life of most laboratory pesticides runs 75 to 120 days on preemergents, four or five weeks on postemergents. The "residual" life of a pesticide is longer than the life span of the beneficial nematode.

Many customers worry need-

lessly about toxicity. For example, such expediencies as crabgrass preventer, used early in the season, are fairly mild.

"Every year we put down a preemergent for crabgrass control. That's how it's been done for 30 years. You *could* wait until crabgrass comes up and try to do it with a postemergent, but that costs more and people don't want dead crabgrass in their yard," Derrick said.

Anxious customers must be dealt with tactfully. "We give them as much information as we can. If someone's concerned about toxicity problems, we provide a label and a safety data sheet."

Agricultural and specialty turf and ornamental products are tested even more strenuously than medicines. A manufacturer may spend 10 years and \$20 million before one pound of product gets sold, he said.

Additionally, most lawn care firms are continuously working to incorporate new procedures and technologies into their service programs.

"We have several meetings a

year about trying to find a better way to control pests," Derrick said. "We look at any of them, including biologicals. We have no paradigms. If we figured out the best way would be to send a guy out with two bricks to smash the bugs together, we'd do it."

Twenty years ago, when Orkin, the pest-control company, diversified into lawn care, it automatically sold insecticidal sprays, even if there weren't any insects in the area and would not be any.

That policy has been eliminated.

"We monitor the areas to see if any insects show up, then spray for them if there are. In Florida, where there are chinch bugs all the time, we're constantly monitoring. We even leave notes with customers: 'Watch for them. If you have them, we'll come back and spray.' "

That extra trip costs Orkin money, but the company said it's trying to be a good environmental citizen.

CLIENT RELATIONS. Interested customers should be told what small quantities of active ingredient are applied in chemical treatments. Dimension preemergent, for instance, is put on at 4 or 5 ounces per acre. "That's going on real light. There just isn't much material out there," Derrick said.

James Mello, owner of Nice & Green, Romeoville, Ill., said the slight upswing in customer inquiries (his is a primarily residential business) about what exactly is being sprayed or rolled on their lawns and ornamentals has been no cause for consternation.

"We tell them we respect pesticide usage first of all. Then we tell them we have an injection system in our vehicles; we use pesticides only as needed. We say that storage, handling and use of pesticides by a professional is safer than by someone doing it himself," Mello said. "If they want, we offer literature. But in most cases, as long as you talk to them and appease them, there isn't a problem."

Injectable liquids let contractors sell themselves as practitioners of the environmentally friendly target-application approach. Dry products, which have pesticides impregnated on them, but are not injectable, are also being favored, Mello said.

"When applying liquid pesticides, you can put it on more evenly, especially in trim or small areas, and the spray pattern provides more even leaf coverage to ornamentals," Mello said. "New spreaders are being developed to allow applicators to inject liquids while spreading granular insecticide (or fertilizer for that matter), but the problem persists of an unwieldy device in tight spaces."

According to Tom Watschke, professor of turfgrass science at Pennsylvania State University, biorational methods are extremely limited for weed control, a little more useful in insect and disease control. Judicious application of chemical pesticides poses no threat to the environment, he added.

A main role of pesticides is to prevent aesthetic downturns. A lawn ravaged by chinch bugs or grubs shows severe deterioration. The pesticide prevents the need of the property owner to start over; controlling the insect is a much less expensive proposition than renovating the lawn.

"People use weed killers for numerous reasons," Watschke said. "A green purist doesn't like dandelions. The normal homeowner likes his kids to be able to run barefoot without stepping on bees in the clover. Some people are allergic to weed pollen. There are actual health concerns."

LOOKING FORWARD. How do biorationals fold into a treatment program that features pesticides? That is the cornerstone of the integrated pest mangement approach, intended to reduce dependency on pesticides. An IPM plan can substitute a biorational method to treat pests at one or more of the application opportunities.

"Biorational insecticides are not as effective as chemicals, but there'll be plenty of emphasis to develop such products," Watschke said. "The agrichemical giants are busily doing it themselves."

David Shetlar, extension en-

tomologist at The Ohio State University (and a research scientist with ChemLawn from 1984 to 1990), echoes this observation.

"I've given 20 talks in 12 months on biological control in turf and ornamentals. There's nothing reliable and consistent to use. There's not much real need for somebody to go purchase biologicals and release them or apply them, because there are a lot already out in the environment. If they'll just target pesticide applications, they can conserve the biological controls that already exist."

Nematodes show great progress — except at killing white grubs — which is what lawn care folks want to nail, he said. Commercially available strains of nematodes are, however, working well on sod webworms, cutworms and billbugs.

Applying living organisms is tricky. Nematodes must be applied before 10 a.m. or after 4 p.m. so the sun doesn't kill them off. You must water them in before the droplets dry on the grass blades; if the droplet containing the



nematode dries, the nematode's dead.

In ornamentals there's a tremendous misconception about what's going on in pest treatment, Shetlar added. BT is not a biological control, but a "microbially derived pesticide." You're not applying a living bacteria, but a toxin produced by bacteria. This toxin, while environmentally friendly to humans, birds and non-target animals, is active on foliage-eating insects.

"When a customer expresses concern about pesticides, preach targeted pest management," Shetlar said. "You only spray the tree or shrub that needs it, only spot the areas of the lawn that need it. That changes your cost structure. You're now paid for expertise rather than coming by with a truck full of chemicals to spray everything in the hopes you hit the pest. A lot of smaller companies are doing very well selling that."

Shetlar said the move away from blanket applications has been in response to environmental concerns. States like New York now require lawn and landscape operators to provide armloads of literature describing pesticide options. They're even talking now about consumer translations of the sheets — what it all means "in English."

But that doesn't allay consumer worries. Mr. and Mrs. Jones regard the reams of literature as another dodge. In certain areas of the country, where there is consumer concern about ecology, it's up to those contractors to take matters into their own hands. Lawn and landscape maintenance people are trying to figure out ways they can reduce pesticide usage.

"Our best defense — and a lot of companies are going back to it — is the old concept of good plant care," Shetlar said. "A lot of people are redefining IPM to

Intelligent lawn management builds up turf thickness and and hampers weed growth.



mean integrated, or intelligent, *plant* management. Particularly with ornamentals; if you have the proper plant, habitat, sunlight, nutrients and water, they will generally defend themselves against any insect or disease that comes along."

Landscapers in particular are beginning to follow that philosophy, he said. The white pines along the roadway get splattered with salty slush, weaken and succumb to bark beetles. The enterprising operator goes to the property owner or manager and suggests replacing other such trees with conifers that can withstand those insects.

The goal is long-term management of a property through curtailed vulnerability to pests. This is accomplished by astute selection. It's like the trend in medical health care, where preventive maintenance allays the need for emergency measures and longrange higher costs.

The author is a free-lance writer based in Cleveland Heights, Ohio.



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USE READER SERVICE #90

COMPOST SOLUTIONS

PRACTICALLY ADDRESSING THE LANDFILL DISDOSAL CRISTS While composting is on the increase, a high-tech solution is not for everybody. Here, two university managers discuss methods for recycling landscape wastes.

By Vince Lunetta

WITHIN THE PAST 10 years all industries, including landscape, have been required to address the solid waste crisis. The same environmental organizations which have scrutinized the landscape industry with pesticide regulations are now asking this group to focus on the solid-waste issue, specifically composting.

Solutions are many and varied to the waste-stream dilemma. Incineration and burial are two answers; however, they are not cost effective in the long run. As a consequence of shrinking landfill space and federal and state legislation, it's clear that traditional waste disposal methods are increasingly impractical.

Composting is a recently accepted solution to the disposal of solid waste. Up to 60 percent of the entire waste stream in the United States is reportedly compostable. Yard waste alone accounts for up to 18 percent.



Congressman George Hochbrueckner, D-N.Y., sponsored H.B. 300 which recognizes composting as a vital part of the solidwaste solution. The bill appears to be a significant step as composting is addressed as a solution to the solid-waste crisis.

This article reviews the basics of composting, and it discusses two approaches taken by industry leaders in Pennsylvania. Faced with the same problem, they developed two different, but environmentally sound, legally mandated solutions.

ELEMENTS OF COMPOSTING.

Composting is a natural process to stabilize mixed, decomposable organic material recovered from: municipal solid waste, yard trimmings, sewage sludge, certain industrial residues and commercial residues.

Composting, as defined by the Solid Waste Composting Council, is the transformation of biologically decomposable material through a controlled process of bioxidation which proceeds through mesophilic and thermophilic phases, and results in the production of carbon dioxide, water, mineral and stabilized organic matter.

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THE COMPOSTING PROCESS.

Composting involves three stages. (continued on page 38)

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USE READER SERVICE #36

Landfill Crisis

(continued from page 36)

In the first stage, material passes through a high rate of decomposition. For example, a pile of grass clippings left over the weekend begins composting rather quickly. Odors may be a problem at this time. One way to control odors in a static pile system is to set up the windrows promptly. Dedication and commitment by the organization involved helps control odors.

The second stage is called stabilization. The material passes through a significant volume reduction. The original material is still discernable, but it now has the appearance of the manufactured final product. The carbon/nitrogen ratio decreases and bacterial populations change in number and character. The temperature of the pile does not fluctuate as much when the material is moved and begins to reheat.

Curing is the third and final stage. The material continues to decrease in volume, bacterial populations change and the product begins its drying phase. Movement of the material produces the familiar "compost cloud." Moisture content on average is 30 percent. Prior to curing, moisture may have been as high as 50 percent.

It is important to understand the stages when selecting the correct composting system for your organization. Your final use determines the appropriate technology required, and also the capital costs of your compost area.

If the material is used solely for bed preparation, then a high quality finished product is not necessary. Stabilized, but not cured material is appropriate for this end use. Topdressing-quality compost requires greater equipment investment to produce the desired end product. More stringent curing requirements are needed for this use.

Various parameters are important to understand during the compost process. Accurate composting results from balancing correct levels of oxygen, moisture, temperature and bacteria. Bacteria generates heat in the microbial "munching" of the organic material.

Temperature levels maintained below 155 degrees Fahrenheit for less than three consecutive days will not ensure pathogen and weed seed destruction. Moisture and oxygen are two key requirements for the bacterial populations to thrive. Moisture contents exceeding 60 percent result in anaerobic conditions.

Also, most odor problems occur from anaerobic conditions. Moisture is 40 percent to 60 percent at the beginning of the process and 30 percent to 35 percent near the end of curing.

Feedstock is potential compost in disguise. Turf clippings, annuals from beds, trees that have been cut down and leaves are examples of feedstock. But bottles, cans and other materials are not, a fact not fully appreciated until you're stuck pulling these materials out of rotting piles.

Bill Gross from the University of Pennsylvania, related this experience, "My men did not care so much about the bottles, cans and other materials we collected the first season we composted. They wanted to get the job done. But faced with separating the foreign material before we set the system up and after the material started to decompose...never again do we have to face tainted feedstock. That was part of the learning curve.

In yard-waste compost systems, whatever inert man-made foreign material accumulates at the front end, it remains at the back end.

Feedstock influences finished product chemistry. Salt content, pH and final C:N ratio are essential chemical parameters to test in the final product. Composted chicken feedstock, for example, produces an entirely different material than yard-waste feedstock.

A landscape firm in the Philadelphia area experienced feedstock problems. After leaves collected from the maintenance jobs finished composting, incorrect feedstock ratios resulted in a fine looking, but phytotoxic compost of pH 11.2. A high concentration of maple leaves contributed to the high pH.

(continued on page 42)



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24 hours a day-give us

the extension numbers

of the products you are

interested in and we'll

instantly fax you complete information on those products.

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USE READER SERVICE #83

If in doubt, don't include it in the compost pile. A wealth of information on feedstock ratios for safe and non-phytotoxic compost is available at state extension offices and private consulting firms.

WHAT SYSTEM IS BEST FOR ME?

Budgets, commitment to the process and the final use of the product determine the system best suited for your institution. Hightechnology systems, usually the most costly, produce a topdressing-grade compost. This method is the most capital intensive, requires equipment purchases and is useful when space is at a premium.

Low technology systems maximize available land and are colloquially known as the "back-40 approach." Odor control and correct siting are keys in this method. The low-tech system requires two years to produce a finished usable product. A good site may be an abandoned parking lot or a hardpan soil area distant from build-



ings and the public. Both systems are appropriate for leaves.

A compost project requires proper planning. Faced with the challenges of new laws enacted in Pennsylvania, Gross, of the University of Pennsylvania, and Kevin O'Donnell, of Villanova University, solved the yard-waste dilemma confronting their respective institutions.

Gross sums up the composting project in one word: commitment. O'Donnell rated site consideration and immediate return from decreasing disposal costs as important criteria for any successful compost plan.

HIGH-TECH SOLUTION. Situated in the heart of downtown Philadelphia, the University of Pennsylvania generates more than 600 cubic yards of yard waste per year. Gross was faced with a dilemma.

Challenged by limited land and situated in a site where odors are of maximum concern, his solution engages high technology. His previous disposal method was to bring it in and haul it out. But now, Gross' system is neat and compact.

Modifying in-vessel technology, he designed a three-sided building. Two sides of the building include air portals for air to be A good composting site is typically distant from the public.

blown into the pile with a modified blower. This solution decreases the likelihood of an anaerobic situation occurring.

Gross's equipment costs included a shredder for incoming material. Gross uses shredded compost as a topdressing for ball fields. He also purchased a BEAR topdresser.

Gross's financial commitment was complete. But forced into composting, Gross had to think the project through and decide what quality end product to manufacture. Problems encountered were not so much from the administration, but rather the workers who gathered feedstock.

He was faced with "I don't wanna" workers who would not separate bottles, cans and various campus materials not suitable for composting. The solution, as he had previously experienced, was for everyone to get into the pile and remove the foreign matter. (continued on page 44)

RIDE A WALKER Discover Gast, Competitive, Profitable Mowing



Most commercial mowing operations are using walk-behind mowers because they have concluded no rider mower is compact or maneuverable enough to mow landscaped areas. Now maintenance operators all across the country are discovering the compact, maneuverable Mid-Size Walker Mower fits their job and saves labor (usually cuts labor 1/2). The labor saving Walker looks good whether your business is trying to produce profit or is operating on a budget. Write or call for a free brochure. Ask for a demonstration.

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USE READER SERVICE #23



Reduce Excessive Thatch Up To 42% In A Single Season

Bio Groundskeeper® Thatch Reducer decomposes thatch naturally...and effectively.

Nature's way of eliminating thatch is to decompose it. Bio Groundskeeper® Thatch Reducer works the same way. It adds a rich supply of natural biological extracts and bio catalysts to the soil, helping the existing microorganisms decompose the dead roots. stolons, and rhizomes which make up thatch. It is amazingly effective. Years of university field test data clearly show regular applications of Bio Groundskeeper® Thatch Reducer significantly decrease thatch.

Bio Groundskeeper® Thatch Reducer can help you cut back on the high cost of mechanical dethatching.

Bio Groundskeeper® is safe to handle and easy to apply. It can be tank mixed and sprayed on with your regular turf amendments. Within six to eight weeks you will start seeing the difference in stronger, healthier turf.

You'll save more than labor costs, too. Reduced thatch has been shown to reduce plant stress, improve uptake of both water and fertilizer, improve root systems, increase drought resistance and eliminate surge growth.

Call **1 (800) 383-4081** For more information, or the name of your local distributor.

Completely natural. Environmentally compatible.

No matter which Bio Groundskeeper® product you choose, you can be sure that it is all natural. Environmentally compatible. Easy to handle. Economical. And effective.

Of course the best way to see just how much Bio Groundskeeper® Thatch Reducer can simplify your life — and improve your turf — is to try it yourself. We would be happy to help you set up a test program at your site.



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Landfill Crisis

(continued from page 42)

"One run through like this and now the contract employees deliver a clean product to the compost area," Gross said.

He added that all head landscapers or ground superintendents should assume the role of head composter.

Reuse is a key. Faced with what he calls "city soil," he amends and uses the compost "whenever and wherever" at the university — not only in the flower beds, but also in the turf areas the topdresser reaches.

Proper use on turf is aggressive aeration followed by compost application. This gets more compost into the root zone quicker than if left to naturally penetrate the soil.

Odor, not space, is the main concern to O'Donnell. While he's able to use vacant land in the back part of the campus as a storage and mixing area for all bulk materials, O'Donnell has to stay on top of the odor problem.

Although successful in this

arena, he's acutely aware of the "Not in My Backyard" syndrome. He spent years as a township manager.

O'Donnell has an innovative approach to saving labor time with collections. This method is performed by blowing leaves into "naturalized beds." He has also significantly reduced the volume of organics on campus by pruning hedges of privet a minimum of six times a year.

"We let the clippings lay in the bed. Rather than pay the labor costs to collect a lot of clippings once, we save budgetary dollars by clipping often and letting nature do the work in the beds," O'Donnell said. At the campus edge, leaves are blown into the woods where nature does its own thing (this is not done in highly visible areas). O'Donnell believes composting is recycling.

"Recycling does not cost — it pays dividends," by avoiding current and future uncontrolled disposal costs. Budgets show net gains for the next five years by showing no projected increases in disposal costs. With available land, the back-40 approach is the most costeffective solution on this campus. The institution has the equipment necessary for a low-technology compost operation (trucks and loaders are the most basic).

Future equipment expenditures include a large tub grinder. This piece not only serves to grind potential compost, but also operates as a mulch grinder for all the large material that the campus generates.

Vacuum trucks collect material and windrows are then formed. Windrows are turned every quarter. Since most of the product goes into new and renovated beds, its texture does not have to be of topdressing quality. Therefore, the final product does not have to be screened. The process takes about two years and is then ready to move out onto the campus grounds.

O'Donnell plans to manufacture a high organic matter topsoil with any excess compost. He will accomplish this by rototilling the compost into a five-acre site on the campus. **CONCLUSION.** Composting is a process, not an event; and it includes all of us.

Universities teach and extension agents recommend products to amend soils.

Garden centers cross-sell peat moss or pine bark as amendments and hardwood mulch is the accepted standard for moisture retention. But why not use compost in place of these expensive materials?

America is facing an exponential problem to reduce the organic waste stream entering landfills. The great "Not In My Backyard" syndrome coupled with an alarming ignorance of what and how to use compost are the biggest obstacles to overcome.

"Just Say No" to peat moss and other non-renewable soil amendments if your institution is faced with an on-site compost facility.

The green industry is capable of controlling its environmental fate by leading the compost use parade.

The author is product manager for PRSM Inc., West Chester, Pa.

MARCH 1992 • LAWN & LANDSCAPE MAINTENANCE



USE READER SERVICE #52

MANAGING COSTS

MAKING A PROFIT AT MOWING Parhans more than over

Perhaps more than ever before, a contractor's ability to determine and work within his costs and expected profit margins, will make or break his business.

By Steve & Suz Trusty

CALCULATING MOWING COSTS:

Figuring Your Equipment Costs Per Hour

EQUIPMENT

 Initial cost of unit Finance charges (total) Total unit cost (#1+#2) Projected total use-hours Projected use-hours per year Total projected years of use (#4÷#5) Projected value at end of use Depreciable cost (#3-#7) Depreicable cost per year (#8÷#6) Unit cost per use-hour (#9÷#5) 	
OPERATION COSTS	
 Fuel used per hour (gal. per hour) Cost of fuel per hour (gal. cost of fuel x #11) Annual cost of other fluids: oil, grease, antifreeze, etc. Cost of other fluids per hour (#13÷#5) 	300
MAINTENANCE AND REPAIR COSTS	
 Parts Labor Percent of in-house maintenance & repair costs allocated to unit Costs of maintenance & repairs per hour (#15+#16+#17) ÷#5 	What holds and
OTHER	np-dajili A
 Insurance Taxes Parking/storage Licenses Costs of other expenses per use-hour (#19+#20+#21+#22) ÷#5 Total unit costs per hour (#10+#12+#14+#18+#23) 	e to other tool The other tool The other tool The other tool The other tool The other tool The other tool

PEOPLE GAZING FROM office windows at crews riding their mowers across the lawn have no idea that commercial/institutional lawn mowing is a complex business. They see only the beauty of the day — the shining sun, the expanse of manicured turf.

You — the mowing crew manager — see the business side of mowing — the schedules, the bills, the profit-and-loss statement. You face hundreds of decisions each day. Commercial, residential or a mix of accounts? Front mowers, tractors or walk-behinds? One-, two- or three-person crews? Seasonal fees, charge per cut or hourly service rates?

More than ever before, your ability to determine your costs and accurately figure your charges, will make you money — or lose it.

Many organizations provided input for this article. They shared facts, and often figures, on how they track their costs, organize their businesses and establish their charges. Some requested that certain data be "off the record," others preferred that certain information not be tied to their company.

In order to be fair to all concerned and provide the most usable information, data from all sources have been compiled to create a broad base that can be adapted to your own specific needs.

EQUIPMENT ASSESSMENT. The

criteria for choosing mowing equipment varies with the mix of accounts you serve. A tractor with gang mowers may be excellent for large stretches of open turf; a 60-inch front mower may be a better choice for highly landscaped business complexes; a 36-inch walk-behind may be more appropriate for small residential lawns.

You know that the larger the mower deck size, the wider the area cut with each pass. But you have to test units to determine the exact difference under your typical mowing conditions. Compare the time it takes your crews to cut a specific area with several different deck sizes and use a stopwatch to be exact. Compare these figures by thousand square feet, or by acre, whichever unit you use in figuring your costs.

Mowing time per deck size is only one aspect of this decision. Consider the cost of a larger unit compared to the cost of a smaller unit. Break down these costs to hours of use over the life of the machine. Calculate the difference in fuel quantities and costs needed to power a larger engine. Consider the difference in labor costs over the projected hours of use.

Along with machine and labor costs per hour, other factors should be considered as well. With wider decks you lose a certain degree of maneuverability. Smaller decks may give a more pristine cut. A larger unit is more difficult to transport between mowing sites. A more complex machine will require a more experienced operator. Will the savings in labor hours compensate for these factors?

The better your mowing equipment matches your needs, the more productive your crews will be.

When selecting equipment you'll want to consider the overall size of the property and these additional factors: flat, sloping or steep terrain; number of landscape and hardscape features; visibility of each section of turf; types of grasses; and most important of all — the client's expectations for the site.

Operator fatigue is another consideration. Crews need to be productive throughout an eight- to 10-hour day. Seemingly little things, like a comfortable operator station with a control layout designed for ease and efficiency, make a big difference to the person working with that unit hour after hour, day after day.

Whatever mowing equipment you choose, it must be rugged enough to handle the job. Depending on your geographical location, that unit will be running non-stop from seven to 12 months each year.

(continued on page 48)

A breakthrough in fertilizer



Turf researchers have long known the benefits of polymer coatings on fertilizers. But, until now, that performance came at a premium price. With its unprecedented Poly-S_{1*} technology.

Scorts*can now offer you the performance of advanced polymer coating technology at a price comparable to traditional sulfur-coated urea (SCU) products.

Scorts Poly-S technology encompasses a family of controlledrelease fertilizers that offer a superior alternative to SCU fertilizers, with extended release, excellent flexibility in release rates, and more predictable response. Each Poly-S fertilizer consists of a dry, dense, free-flowing, physically homogeneous product specially designed for use with a broadcast spreader.

The Poly-S difference: a unique multiple coating system. What makes Poly-S technology revolutionary is a unique multiple coating system that determines the rate of nutrient release while improving handling and application of the fertilizer.

A high-quality nutrient substrate core is covered first with a layer of sulfur and then with a proprietary polymer that protects the nutrients and, in combination with the sulfur layer, determines the rate of release.

By varying the levels of each of the coating components, Poly-S technology offers unprecedented flexibility in 'dialing' the release rate appropriate to different applications. No other fertilizer

performance and value.

offers you so much residual flexibility with the economy of Poly-S technology.

The durability of the Poly-S coating protects the nutrients without the need for the waxes and conditioners often used to mask coating imperfections in traditional sulfur coated products. So there's no dust problem and no wax residue on spreaders increasing the convenience and accuracy of application.

Poly-S technology also makes the fertilizer granules more abrasion-resistant than SCU, so that they are applied to the turf with the coatings *intact*, virtually eliminating the chance of premature release of nitrogen leading to surge growth and turf damage. The Poly-S process actually requires less total coating than with SCU products, providing higher nitrogen analysis. And it's less sensitive to temperature than fertilizers coated with polymer only.

The result: more value from the fertilizer you apply, with an overall improvement in turf quality.

And all Poly-S fertilizers come with a Scott Tech Rep, an agronomically trained professional ready to help you develop a total turfgrass program that assures proper application and maintenance scheduling.

For more information about Poly-S fertilizers and their performance advantages, contact your Scott Tech Rep. Or call 1-800-543-0006.



USE READER SERVICE #84

Growing better through technology.

Making a Profit

(continued from page 45)

Bob Beede, A-1 Landscaping and Lawn Mowing Service, Londonerry, N.H., said, "To those starting out, I'd caution them to always pay the extra price for quality commercial equipment." Mark Engstrom, Wells Lawn and Snow Removal, East Lansing, Mich., agreed, "The commercial unit puts in well over five summers of mowing in one season. Quality equipment is essential."

Selecting a mower of the required type and size is only part of the picture. No matter how well-made the machine, Murphy's Law generally applies: At some point, whatever can break down, will break down.

Downtime is a major factor. Mowers don't make money while they're in the shop. Working closely with a dealer who understands your business and provides fast turnaround on parts and service can alleviate this worry.

"There's one image that sticks in my mind from a conversation with a mowing contractor in Tennessee," said Bill Lee, division manager of marketing, John Deere Horicon Works. "This fellow said, 'Never forget this. With that piece of equipment I'm using, I'm making my house payments, I'm putting clothes on my kids' backs, I'm feeding my family and I'm paying for my car. That machine has got to run all the time and it's got to keep running every day through the mowing season.'

"That concept holds true from the contractor with one crew to the organization with multiple crews. When the machines don't work, the people can't work."

SERVICING NEEDS. Consider the warranty and service package when selecting new equipment. Is the entire machine covered by the dealer, or will you need to contact one source for the engine, another for the cutting unit? Will the dealer's service staff work late or come in early when necessary to give a quick turnaround? Does the dealer maintain mobile units, stocked with parts, to provide onsite service? Can the dealer obtain special parts within 24 hours to keep your units up and running? Will the dealer supply a loaner to keep your crew on the job?

Many organizations running multiple crews have opted to hire their own part- or full-time mechanics. Their mechanics ensure that preventive maintenance is performed on a regular cycle. They handle most minor repairs and coordinate major repair work with a dealer. Staff mechanics do some of the tasks you, or members of your crews, have been doing or that you have been paying outside personnel to perform.

There are pros and cons to inhouse service. Carefully consider all of the aspects involved when making this decision. Your equipment always has priority with your own mechanics; that's why they were hired. But, the number of mechanics you have on staff is the total of your repair team. They may have too much work at some times; not enough at others. As with all personnel, the extent of the work they can handle is dependent on their expertise.

You'll need to allocate sufficient upfront funds to support in-house

repair work. You'll need work space, proper equipment and a supply of parts. You'll need to cover the salary and related direct costs of the new employees.

A portion of the expenses related to in-house mechanics will need to be allocated when figuring your mowing costs. This expense can be included in the general overhead figure, or a portion of the cost can be allocated to each piece of machinery. It's easiest to follow the same procedure you use in allocating outside repairs. If parts and labor for off-site repairs are charged to each piece of equipment in figuring its hourly use-rate, add a percentage of in-house service. If parts and labor are included in general overhead figures, add in-house service costs to general overhead.

Consider the useful life of each machine. At what point does it become logical to replace a unit? Will you run mowers until they are no longer efficient or replace them on a regular, preplanned cycle? Will you recoup any of the purchase price?

Again, these questions can on-





MARCH 1992 • LAWN & LANDSCAPE MAINTENANCE

FIGURING LABOR COSTS COST TO PAID TO EMPLOYER PAID TO EMPLOYER DIRECT COSTS

DIRECT COSTS	
 Total Regular Wages (Hrs./wk x wage/hour x weeks worked) Total Overtime Wages (OT. Hrs./wk x OT. wage/hour x weeks OT. worked) Cash Bonuses or Commissions Total Cash Wages (#1 + #2 + #3) MANDATED COSTS 	
 Employer's Share of Social Security and Medicare Federal Unemployment Insurance State Unemployment Insurance Workman's Compensation Other Total Mandated Costs (#5+#6+#7+#8+#9) FRINGE BENEFIT COSTS 	
 Health Insurance Life Insurance Retirement Benefits Profit Sharing Uniform or Clothing Allowance Education Expense Vehicle Expense Transportation 	
 (miles/day x No. days x rate) 19. Other Hours paid but not worked 20. Vacation (No. hours x wage/hour x No. days) 21. Holidays (No. hours x wage/hour x No. days) 22. Sick Leave (No. hours x wage/hour x No. days) 	
 23. Total Fringe Benefit Costs (add totals of #11 through #22) 24. Total Hours Worked 25. Total Costs Per Hour on the Job (add all costs to employer) (#4+#10+#23) ÷#24 	

ly be answered in the context of your own operation. Older mowers, kept in top shape through preventive maintenance, can be highly productive. Some mowing contractors report that they have walk-behind units which are still effective on the job after six to eight years of heavy use. Other contractors prefer to replace units on a regular cycle, after a set number of use-hours, to avoid extensive upkeep and to take advantage of the newest technology.

The key here is to know what your costs are in operating each machine. Recalculate these costs at least twice a year. (More frequent calculations will be even more accurate. Some companies run computer checks of crew time and equipment-use reports to track costs daily; some do this weekly; some monthly.) Whether your organization is or isn't computerized, it's beneficial to use the stopwatch occasionally for exact results. Have an experienced operator work with a newer, yet similarly typed unit. Compare the results. When you note a significant drop in efficiency, it's time to replace the unit.

FORGOTTEN COSTS. Another element of mowing costs that can make a major difference in profit or loss is often called non-productive time. A better term would be non-billed time. The tasks performed are productive because they lead to completing the job, but the time taken might not be billed directly to mowing clients.

This includes travel time from job site to job site, fuel stops for travel vehicles, loading and un-(continued on page 52) Keep Fertilizer Dry and Prevent Costly Spills with the "SHOWER CAP"



The thing we're trying to help you avoid is overkill. Because if

you can control weeds, isn't that enough? So here's

a less

EPA), and you'll get very good results. It sounds simple, but it's one of the most effective ways to use less herbicide.

Also, calibrate your equipment frequently, and use the correct Gallon for gallon, Confront goes twice as far as standard threeway herbicides.

At last. A herbicide a like eradicate, eliminate

DowElanco

aggressive approach to managing weeds. A few things you can do to use less postemergence herbi-

cide to get the weed control you need.

First, look for weedy areas

> <u>A Young</u> <u>Weed Is</u> <u>A Vulnerable</u> <u>Weed.</u>

The best time to apply your postemergence herbicide is early --when you first see weeds emerge. This is when weeds are the most vulnerable to herbicides. You'll get better results from your application, and you'll reduce the need for treating hardened weeds later.

Confront

before applying herbicide. That way, you can use spot treatments instead of broadcast applications (a practice recommended by the

rate of herbicide for the weed you want to control. You'll get better results from your application, and reduce the chances you'll have to re-apply.

And it's important to select a

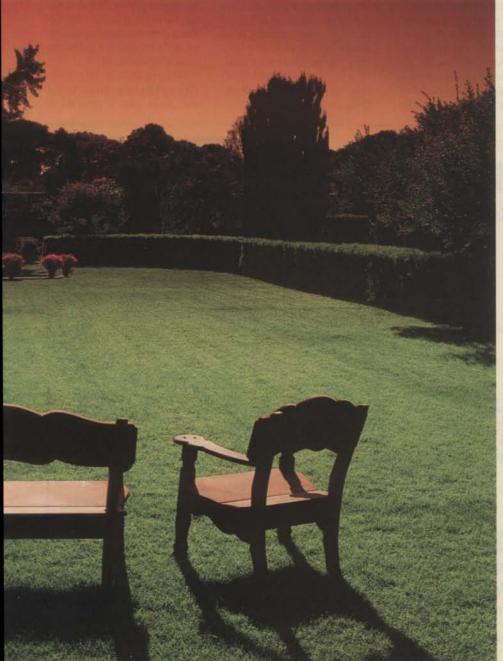
postemergence herbicide that does the job the first time you apply it. For stubborn broadleaf weeds,

Careful scouting helps you get effective weed control using less herbicide.



herbicides often miss, giving you excellent results from your application. Confront* herbicide is also a good choice. Confront gets to the roots to keep weeds from coming back. It's very effective on

d that doesn't use word or destroy. clover. And perfect for Turflon* herbicide is turfgrass where you a good choice. It controls weeds other prefer a herbi-



cide without dicamba, 2.4-D or MCPP

Of course, there isn't room here to outline an entire weed control program. That's why we created The Turf Manager's Guide To Responsible Pest Management. It's 44 pages on the latest techniques for controlling weeds, insects and turf diseases.

For a free copy return the coupon, or call our toll-free number. After all, why use any more herbicide than it takes to do the job?

Send me the following Management Guide(s): Cool Season, Warm Season Nursery and Landscape. Mail To: DowElanco, P.O. Box 3064, Cedar Rapids, IA 52406, Or call: 1-800-729-3693 ext. 2592. Title Company_ Address City. State Zip___ ____ Phone(____ The chemistry is right.

*Trademark of DowElanco. © 1992 DowElanco USE READER SERVICE #95

03

Making a Profit

(continued from page 49)

loading of equipment and time spent transporting clippings and depositing them at landfill sites.

Collecting clippings is a timeconsuming, and therefore costly, factor. Many operations report that their clients are becoming more receptive to grasscycling, a Professional Lawn Care Association of America program that encourages people to let short clippings decompose on the lawn.

Other operations have made arrangements to scatter clippings in little-seen spots or wooded areas on the client's property. Some operations have their own facilities for composting clippings and can make use of the resulting material themselves.

You can keep track of this nonbilled time in relation to each account by having crews note it on work sheets. Have them record what time they leave one site. Then note the arrival time at the next site. Next write down the time when equipment is unloaded and work begins. For further accuracy, have them note the starting and ending use time for each piece of equipment. Then record when work was completed at that site and when they actually left the site. This will give a total breakdown of time spent and equipment usage.

If this record keeping is more than you want to face on a regular basis, keep track of these items for a week, or one day a week for several weeks. Use these records to compile an average of the nonbilled time for each crew member. Include this information when calculating your costs.

Labor costs include much more than the direct wages of each employee. Calculate labor costs by starting with the hourly pay rate. Figure the overtime pay rate. Then add mandated costs, such as state and federal unemployment insurance, workman's compensation and the employer's share of social security and Medicare.

Add fringe benefit costs, such as health and life insurance, retirement programs and/or profit sharing. Include the costs of any other items covered for personnel, such as special training or education, uniforms or a clothing allowance. Be sure to include hours of paid, non-working time: sick leave, vacation and holidays. All these figures are needed to give an accurate picture of actual labor costs.

With so much of your operation's resources spent on labor, it's vital to maximize productivity. Again, the way you structure your crews will depend on the job sites, the work to be completed at each site and the equipment needed to complete the job.

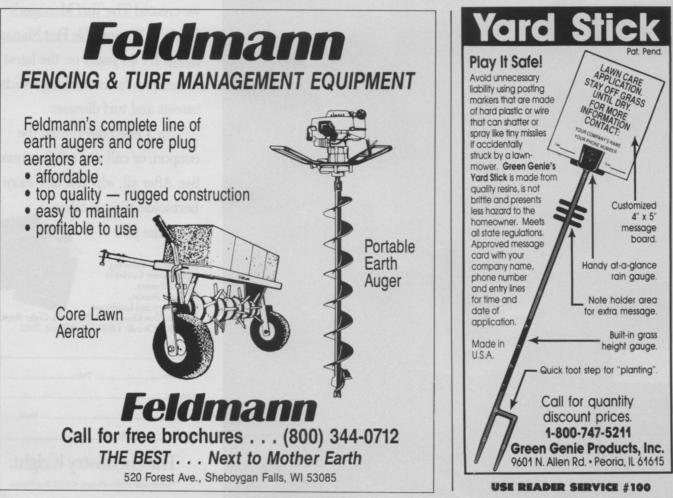
EXPECTANCIES. Your personal management style must also be considered. Some contractors, especially those serving mainly residential accounts, find one person crews most productive. Mowing units fit on a truck, or truck and trailer and are small enough for an individual to handle. Some people work best on their own. Only one person is responsible for doing a good job, and there's only one person to blame if anything goes wrong.

Other contractors prefer a twoor three-person crew. Help is available for loading and unloading equipment. An experienced crew leader can assign tasks according to skills at each job site. One person can trim, while the others mow.

When mowing large sites, it may be necessary to assign many employees to complete the job in a day. In these situations, a larger, master crew may be formed, or several smaller crews may work together on designated days.

When crews function well together, and tasks are coordinated, these teams can be highly productive. An individual having a bad day may push a little harder to keep up with the others. There can be drawbacks, too, such as too much talking, or the tendency to blame an uncompleted task on another person. Not all crews need to be the same size. Try different combinations of employees on different job sites to find the most efficient teams.

Whatever the size of the crews, they will be more productive if they know what is expected of



USE READER SERVICE #99

them. Not only should the work order or job sheet list the work to be completed, but it should also show the projected time allowed for the work.

There will be outside circumstances affecting job performance. A unit may break down. Excessively wet weather may make grass more difficult and time-consuming to mow. But, on the average, the time it takes to complete a job should closely match the estimate. This is how profits are made. If there are frequent deviations, or if deviations run 10 percent or more above or below the estimate, it's time to take a close look at operations.

Crews may be spending too much time at certain procedures because of lack of training, or a poor match of equipment to complete the job. Conditions at the job site may have changed, causing more work for the crews. Someone may have devised a better or more efficient technique that can be passed along to other employees. Or, there may be a problem with the original estimate.

FIGURING COSTS. Estimating costs and charges is a highly subjective task. One person must be involved. Each job site is different. The estimate must take these differences into account. Accurate measurements of the area are needed, with special care sections noted. Start with a base figure per thousand square feet or by acre. Allow additional charges for hard to mow areas.

Some operations classify open, easily mowed turf as "1" and add a 10 percent factor as the degree of mowing difficulty escalates. For example, to estimate the extra time needed to handle a slope the base figure would be multiplied by 1.1.

A lightly landscaped portion of a yard might earn the same rating. A highly landscaped yard, with multiple plantings and hardscape features might earn a 1.2 multiplier. A hillside might need to be figured at 1.3 times the base cost.

When estimating charges, an adequate figure must be included to cover overhead costs and profit.

Some estimators rely on past experience to figure the number of hours they anticipate the crews will need. They then use an hourly rate, calculated from their total costs and including a profit, to arrive at the estimated charge.

Some operations use a computer program to process all the data compiled by the estimator, multiply it by predetermined percentages to allow for the degrees of difficulty and add in set amounts to cover costs and profits.

Normally, the one making the estimates is a highly skilled person, seasoned by the experience of performing and scheduling these kinds of work; a person who understands the functions of the crews and the functions of record keeping. Obviously, this must be a person who is committed to the performance of the operation and is looking out for its interests.

Despite all these attributes, the estimator is still a person and people do make mistakes. When a mistake has been made, all efforts should be made to correct it. If adjustments can't be made in charges, productivity may sometimes be increased. At the very least, the same mistakes shouldn't be made again.

Let the crews know that there is a tight estimate on a certain site. Their input may increase productivity or trim costs enough to make the estimate more realistic. Everyone in the operation is working on the same team.

No matter how well you figure your costs, and how accurately you gauge your charges, the elusive element in all calculations is a satisfied customer. The operation will only succeed if the client is satisfied with the work performance.

Beede of A-1 Landscaping and Lawn Mowing Service said, "Employees have to be dedicated to doing a good job and take pride in their work. With that attitude, the whole operation is on the right track."

Wells Lawn and Snow Removal's Engstrom summed it up, "We've been in business for 14 years, and intend to be around 10 years from now. Customer satisfaction is the key to doing so."

The authors are partners in Trusty & Associates, Council Bluffs, Iowa, and are consultants to the horticulture trade.



USE READER SERVICE #101



RESEARCH REVOLUTION

New pesticides and biological products are streaming into the marketplace, but will the customer pay? By William Troy

SOMETHING AKIN TO a revolution may be going on in the research labs of major product manufacturers.

Once the big question was: how effective is this new insecticide or herbicide? How rapidly, simply and economically can it be applied?

Those characteristics are still deep concerns. But in an era when virtually every product sold to the American public may be vulnerable to regulation and/or legal attack, manufacturers are now equally concerned with making product offerings that exhibit user and environmental friendliness.

In talking with manufacturers, researchers, distributors and contractors around the country, there seems to be some disparity between what the manufacturers feel compelled to do and what the buying public is ready to accept.

NEW PRODUCT DIRECTIONS. Dr.

Frank Rossi of Michigan State University's Crop Sciences Department, defines the general trend of current research this way: "For the most part, manufacturers are looking for new, highly specific, less persistent materials which show greater activity in much lesser per acre amounts."

He expects considerably more activity in exploration of naturally produced toxins and in the use of biological larvicides in ornamentals — entomophagus nematodes — which are predaceous on certain types of insects. He also believes that new packaging tech-



niques may be of great help in creating user-friendly handling and application techniques.

Regulatory concerns may be accelerating those research efforts. Dr. L. Douglas Houseworth, manager of technical support for Ciba-Geigy in Greensboro, N.C., said that within two months his company fully expects new labeling regulations on organophosphate granules relative to their use in bird roosting areas. Birds often mistake granules for seeds and New technology could bring more "environmentally friendly" pesticides and biological products to the lawn care market.

will sometimes swallow them whole, he said.

As a result, Ciba-Geigy is now looking at granules that will dissolve more rapidly on contact with ground moisture, or a reduction of the active ingredient to the point where it will be non-toxic to birds. He believes the Department of Agriculture is also working on a granule anti-feedant, the taste of which will be repellant to birds.

Older materials, however, may continue to be useful in new forms, he said. "Five years ago we were pretty sure that wettable powders were on their way out. But with our water soluble bag technology, they should continue as a useful material." His company has developed a water soluble bag that will dissolve within two minutes in 40 degrees water. Emulsifiable concentrates, Houseworth believes, will be phased out of his company's product repertoire by 1995, or as soon as plausible alternatives are found.

Cost will be an important factor in contractor and public acceptance of newer materials, Houseworth said. Today, biologicals represent only about 2 percent of the company's product mix. But the corporate mission statement calls for that figure to reach between 20 percent and 25 percent by the year 2000.

The company's Basel Switzerland research unit, as well as its North American facility, is now devoting much of its effort to this subject. "But you have to understand that biologicals have a relatively short shelf life," he said. Ciba-Geigy has had a biological product on the market since last July which has only a 90-day shelf life.

Ciba-Geigy, in its effort to broaden its research and product horizons, is actively searching out other companies with expertise (continued on page 56)

"Where else could you find a truck that saves enough to make its own payments?"

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USE READER SERVICE #65

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RULY

ISUZU

Research Revolution (continued from page 54)

in the field, to work with them either by acquisition or through working agreements.

New granule substrates have received much attention from researchers at Rhone-Poulenc, Research Triangle Park, N.C., over the past two years, according to Scott Johnson, business manager of the company's turf management group. Their work has resulted in a new granular pesticide and new herbicide introduced last spring and December, respectively.

Both products, Johnson said, replace the old clay-based granule with a base formulated from recycled paper, which is then impregnated with active ingredient. Paper-based granules, he said, have virtually eliminated dust and drift, important to those who handle and apply such materials.

Another focus of Rhone-Poulenc's research effort is container disposal. "It's only a matter of time until regulations will be imposed on disposal of containers for liquid pesticides," he said. "So we've come up with a refillable container which is now out in the test market." From a company point of view, the results have been somewhat ambivalent, he said. The containers do what they're supposed to, but the required equipment adds a cost factor of about 10 percent. And the product is meeting some market resistance because of that.

Rhone-Poulenc isn't as optimistic about the growth of biologicals in the present decade as Ciba-Geigy. Johnson said demand will certainly accelerate, but will represent only 5 percent of Rhone-Poulenc's total products to the market by the year 2000.

DowElanco of Indianapolis is pursuing what spokesperson Mike Shaw describes as a biorational approach to user and environmentally friendly control techniques.

"If contractors have a better understanding of test biology," he said, "conventional materials can be used with much greater precision."

He cites three examples:

Mole crickets, he said, are a common pest on southern turfgrasses. They can be controlled by regularly scheduled applications. But with the use of soap flushes, and proper mapping and scouting, a contractor can know exactly when young nymphs will appear, the insects' most vulnerable stage. Minimized applications can then do the work of a whole planned program.

The Ohio State University has worked up degree-day models for the control of bluegrass billbug, a common lawn pest in the upper Midwest, Shaw said.

The Ohio State program calls for controlled applications for this pest only when the degree-day model says bluegrass billbug kill can be maximized.

Controlling tree boring clear wing moths is another example Shaw makes of understanding insect susceptibility. Hormone treated sex attractant traps set out in the spring can often end an infestation of these pests before it really begins.

Shaw said that like virtually every manufacturer, DowElanco is deeply involved in research on environmentally friendly chemicals and biologicals, as well as alternative delivery systems.

"But while there's been a lot of talk," he cautions, "we have to be sure the end user will be willing to pay for these new substances."

THE COST CONSIDERATION. Greg

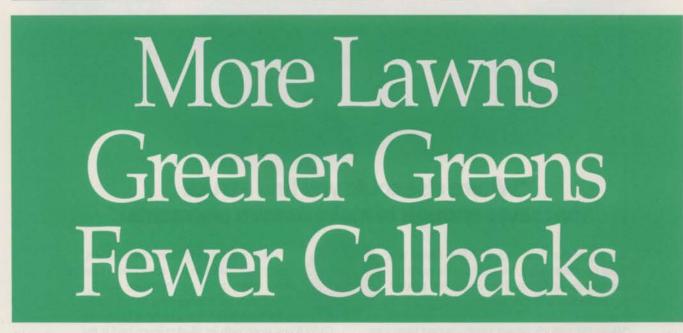
Schaan, manager, specialty products for Terra International, Sioux City, Iowa, said that the so-called environmentally friendly products are accounting for only about 10 percent of his sales volume.

"I'm not a technical man, and I can't speak to their performance advantages. But I do know that in the main they cost more, and that's why there is no real economic drive to buy them. One trend I can see is that there is a distinct movement in our business away from liquids to dry forms."

Outside the laboratory atmosphere the attitudes become more pragmatic.

Dale Dunn, of Executive Lawn Care in Columbus, Ohio, said his company has done a fair amount of work with biologicals and recently modified dry chemicals.

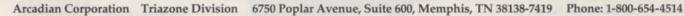
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years we've told people that lawn care is a low cost product, and they've come to rely on that. Now we're looking at materials that in some cases may cost three to five times as much. We have no way to pass along the cost."

There are exceptions, he said, when individual customers are opposed to the use of certain types of pesticides. Then they'll pay whatever they have to.

"If these new materials are used in great quantities, we're going to have to go through a long reeducation of the buying public. I think they'll do fine if the manufacturer can come up with materials that do a better job at the same price."

This opinion is shared by many around the country.

"Cost is a big factor," said Tom Hofer of Spring Green Lawn Care in Plainfield, Ill. "Our business is largely residential. And despite all the publicity about environmental protection, the number of our customers who question the chemicals being used is not large."

James Busbee, head of Service Master/Lancaster, Lancaster, Ca-



lif., said his company has been "taking a look" at organics, but as of now is not using them. He concedes that natural products are probably the wave of the future, but that costs could be a limiting factor in their use.

An entirely different viewpoint comes from Phil Catron, president of Naturalawn, a service franchisor headquartered in Damascus, Md.

Catron began his operation based on the use of alternative control systems in 1987. Early in 1990 he sold his first franchise and his company now has 18 franchises from Portland, Maine, to Wilmington, N.C. Five of those franchises were added in February of this year.

"We all grew up in the atmosphere of spraying companies," Catron said, "and it takes time to come around to using controls more judiciously."

Catron acknowledged that the costs of some of the new materials are higher — "sometimes three to five times greater." But that doesn't mean that your service price has to be higher, too, he said.

First of all, with many of the new materials it takes less active ingredient to achieve the same control, he said. "For example,

Traditional pesticide products typically remain the more costeffective approach.

we've been able to actually reduce our weed control costs by 85 percent, and insecticide costs by 90 percent."

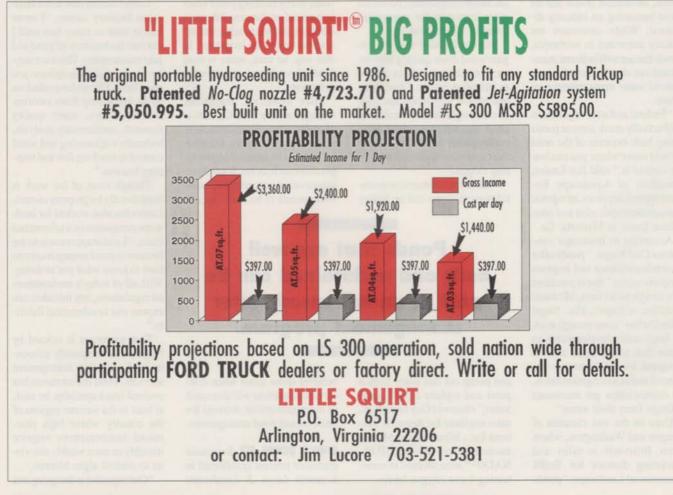
The whole problem of costs, he said, doesn't lie in the realm of materials, but in a lack of good business practices. "A lot of us are simply too fat," he said. "Over-bought, over-structured, over-staffed."

He cited large gallon spray trucks — mostly obsolete now and large storage buildings as examples of over-invested capital.

Catron believes that manufacturers' estimates of the growth of the biologicals market by the end of the decade are conservative.

"We recently ran an ad for two months that pulled 500 inquiries," he said. "That was more inquiries in two months than we pulled from 12 months of advertising last year."

The author is a free-lance writer based in Cleveland, Ohio.



LAWN & LANDSCAPE MAINTENANCE • MARCH 1992

ADD-ON SERVICES

LEARNING THE AESTHETICS, POND BENEFITS OF POND MANAGEMENT

If you're installing, maintaining or subcontracting pond work — or just thinking about it considerations from the beauty to the necessity must be investigated.

By Mark Ward

THOUGH WATER conservation and drought are national concerns, decorative ponds are far from becoming an industry dinosaur. While customers are mainly interested in aesthetics, ponds that are well built and maintained can also be part of an enhanced water management program.

"Federal and state regulations will actually result in more ponds being built because of the need to hold water where you can better control it," said Jim Lanier, president of Aquascape Environmental Services, an aquatic management specialist and consultant based in Marietta, Ga.

According to landscape contractor Carl Nagel, "ponds offer a certain ambience and improve property values." But as president of a design/build firm, Michael/ Todd Inc. of Naples, Fla., Nagel added he has "done enough work at large-scale developments to know that ponds must also be designed for use in stormwater control and as an irrigation basin, so communities get maximum mileage from their water."

Even in the wet climates of Oregon and Washington, where Peter Brummel is sales and marketing director for Teufel Commercial Landscape, "ponds can't just be for aesthetics. In our region, because of the high rainfall and sloping terrain, ponds are more important for stormwater control," Teufel said.

Brummel added that the region's soil dries quickly in summer, requiring ponds to double as irrigation basins. "And that's one reason why landscape contractors might be concerned about pond maintenance, since good water quality is needed to keep their sprinkler systems from getting clogged."

With today's conservation consciousness, "you can no longer Hamilton has seen many hotels and institutions improve their water use by flushing waste water into a pond, reclaiming it through aeration and then using the reclaimed water for irrigation. In that way, he said, water is used "twice" resulting in greater conservation.

Mike Moncrief, marketing manager at The Toro Co., Minneapolis, whose products include a line of pond aerators, acknowledged that in areas of high evaporation such as the Southwest, conservation concerns may cause fewer ponds to be built. Yet, he

Ponds that are well built and maintained can be part of an enhanced water management program.

just pump out bad water from a pond and replace it with good water," observed Guy Hamilton, sales engineer for Aeromix Systems Inc., Minneapolis, Minn., manufacturers of AquaTOR-NADOTM aerators used in maintaining water oxygen levels. believes those same water conservation concerns will also result in more nationwide demand for professional pond management.

WHO'S DOING IT? Increased customer interest is reflected in a recent Lawn & Landscape

Maintenance poll, where more than 18 percent of the respondents said they were involved in pond management. But observers differ about how the discipline will evolve — whether aquatics will be added to a contractors' overall service mix, or become the domain of specialty companies.

Current trends suggest pond management may be moving in two directions. Many contractors are turning to aeration as a simple mechanical solution in maintaining water quality for customers who value aesthetics. But others point out that ponds are complex ecological systems, and good management requires substantial expertise.

Lanier claims that in his landscape industry career, "I never had to wear so many hats until I got into the business of pond and lake maintenance. There are maybe six or eight disciplines you must know. Clients have asked me to do everything from environmental studies, water quality research, sedimentary analysis, hydraulic engineering and weed control to stocking fish and trapping beavers."

Though most of his work is done directly for property owners, Lanier has also worked for landscape companies on a subcontract basis. "Landscapers come to me because in pond management you have to know what you're doing. With all of today's environmental regulations, any mistakes can expose you to substantial liability."

That sentiment is echoed by Nagel, who frequently subcontracts for aquatic management services. Pond maintenance has evolved into a specialty, he said, at least in the warmer regions of the country where high yearround temperatures require monthly or even weekly site visits to control algae blooms.

"Our expertise is designing and

building pond systems, and we do that in ways that minimize maintenance problems," he said, "but doing the actual maintenance work wouldn't be cost-effective for us. Instead we focus on design/build services and hire subcontractors who specialize in aquatics. They're the ones who have the equipment and trained personnel to do the job."

Brummel likewise admitted "we only maintain ponds under certain circumstances." His firm currently manages one pond at a corporate park, but only as part of a much larger overall contract. "Teufel Commercial Landscape is big enough, and has enough equipment already on hand to absorb pond management into a total project. But otherwise, most landscape contractors would have a hard time diversifying into that service."

Though Moncrief sells Toro aerators to landscape firms, he also concedes that aquatics are not for every company. "It can be profitable, but you've got to have the expertise. If you get into pond management, bring in someone who knows the field."

More evidence that specialty companies are emerging includes estimates that some 700 lake and pond management firms are now active in North America, he said.

Beyond communities and institutions that need complex water management systems, however, there are individual customers who desire ponds simply for their aesthetic value. To serve that market, "you don't need any special training," said Ralph Gelormine, co-owner of PIE Supply Co., Milford, Conn., a distributor of Rain Jet aerating fountains from Hardie Irrigation.

"You should hire an electrician to do the hookups," said Gelormine, "but after that you just go out and install the aerators. The system is designed as an alternative to chemicals, so all you have to do is visit the site maybe twice a year — in the winter to either shut down or remove the equipment, and in the spring to get it started again. It's just something you add to your basic services."

At this level, agreed Hamilton, pond management falls closer to the "basic knowledge" category. He said many contractors start maintaining ponds to ensure clear water for irrigation. Whatever landscape firms don't know, he added, they can usually learn.

For example, Hamilton said, Aeromix equipment requires users to relate pond size to the horsepower needed for the aerator motor. But he claimed the calculations could be quickly made using a conversion chart his firm supplies. A second chart also allows contractors to gauge sitespecific variations in water oxygen needs and adjust aerator power accordingly.

"If you want to get deeply involved in things like lake restoration, where you need ozone injections, then of course you've got to know what you're doing," Hamilton said. "But 95 percent of the time managing a pond isn't that complex. When you buy pond maintenance equipment and supplies, the manufacturers can provide the training and technical support you need."

DIFFERENT METHODS. Contractors who decide to offer pond management must recognize that one maintenance program does not fit all sites, advised Lanier. ton said, "each one has its own niche and none will totally replace the others for all situations." Experts suggested six basic types of equipment or supplies related to pond maintenance.

 Aerators are intended to introduce oxygen needed for a healthy aquatic environment. The

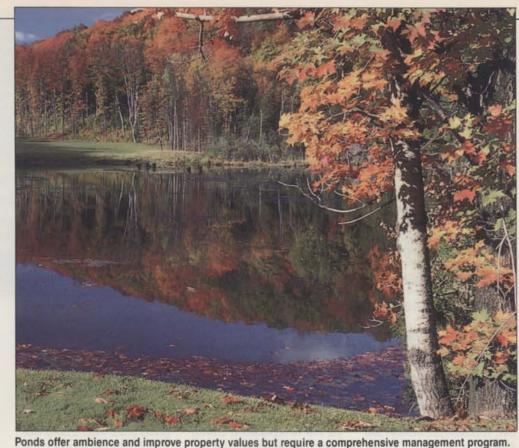
Aquatics are not for every company: It can be profitable but you've got to have the expertise.

Not only do conditions vary, but customer priorities also govern maintenance decisions.

Lanier recalled a recent pond project where the property owner encouraged recreational use, but favored swimming and boating over fishing. "I had to design a maintenance program that emphasized water clarity and weed control," he explained, "whereas for better fishing you would want more weeds and richer water."

Many products have been developed to meet different needs in pond management and, Hamilphotosynthesis of algae is the natural means of releasing oxygen, but under several conditions the process can be knocked out of balance.

Algae reproduction may be increased by longer daylight hours, warmer weather, calm water conditions, excess nutrients from waste waters or water stratification that concentrates nutrients in the upper layers. Water also stratifies naturally in winter, so that the spring mixing cycle may release the sedimentary phosphorus upon which algae thrives.



can be pro- the "basic knowledge" category.

When an algae bloom occurs on the water surface, lower-level algae dies off for lack of sunlight. Available nutrients decrease even as demand rises, and the pond can no longer support the bloom. As the surface algae mass dies and falls to the bottom, more oxygen is needed to degrade the dead algae. Yet because most algae populations are dead, little oxygen is produced.

At this point, water becomes "anaerobic" or deprived of oxygen. Aquatic fish and plant life are threatened. Anaerobic bacteria begin to thrive, so that waste materials entering the pond are digested anaerobically rather than by normal means - and noxious odors are released as a byproduct.

Aerators are designed to introduce oxygen and also circulate water to prevent stratification and disperse algae build-up in calm areas. The three categories of aerators on the market today include horizontally mixing aerators, fountain-type aerators and diffused-air bubblers. Each has its advantages, but the ideal system



is often a combination of products. Hamilton said.

· While aeration reduces the need for chemicals in ponds, chemical controls for aquatic weeds may be needed in some situations. Chemical pond treatments require periodic monitoring and re-application, costing contractors increased time and labor.

Additionally, care must be used if the chemically treated water is later used to irrigate turf or if strong winds blow treated water from a fountain onto surrounding grass and trees.

One treatment favored by some contractors is a chemical dye that colors pond water a deep blue. By reducing the intensity of incoming sunlight, the dye slows Customers of pond management tend to be upscale and will pay more for the service.

down or eliminates the growth of undesirable plants. Contractors are advised to discuss the treatment with customers, however, since some people regard dyed water as artificial looking.

(continued on page 62)



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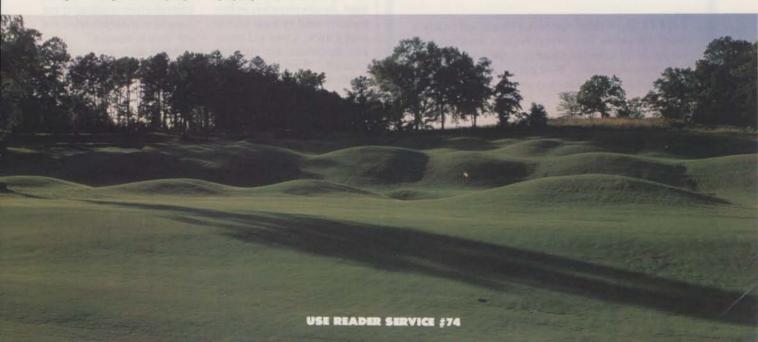
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Pond Management

(continued from page 60)

• Biological weed controls have been used successfully in some lakes and ponds, according to Lanier. Specifically he cited the Chinese white amur, or grass carp, as effective in eliminating weeds.

• Mechanical harvesting of weeds is another option. But the method is chiefly employed by firms that specialize in aquatic management, since harvesting equipment is both expensive to buy and time-consuming to use. A harvester and boat, Moncrief regimen. "First you should have a consultant visit the site to see if there are any problems related to the pond," Moncrief said, "such as side slopes going down into the water."

Care must be taken in applying chemicals around a pond perimeter. For example, fertilizers should be chosen whose NPK numbers indicate a lower amount of nitrogen. "Phosphorous stays bound to the soil so that runoff isn't as big an issue," he explained, "whereas nitrogen leaches quickly out of the soil. When it runs into the pond, the nitrogen could cause an algae bloom."

Pond management should be treated as a separate business — not just as an add-on service.

estimated, can cost between \$20,000 and \$50,000.

• Pond liners and chemical sealants are used in construction to prevent seepage into or leakage from a pond system. With today's emphasis on water management and conservation, a controlled environment is desired by most property owners. Because water is reclaimed and recirculated, water loss must be kept at a minimum.

• Pumping equipment is needed when a pond is also used by the contractor as a source of irrigation water.

"To get started in pond management, the subcontractors we hire typically need to begin with at least a truck, a boat and trailer and equipment for applying chemicals," Nagel said, "but after that the supplies you need depend upon the pond in question."

Nagel and others found it hard to make a general statement about the amount of investment needed to enter the pond management business. "It's the same way I would buy tools for my home workshop," he suggested. "You buy what you need when you need it."

OTHER CONSIDERATIONS. Whether involved in aquatics or not, having a pond onsite often means landscape contractors must make changes in their turf management Nagel warned contractors to be careful with debris, since grass clippings can enter a pond and consume oxygen as they degrade. He also noted that some chemicals used on land have a residual effect in water, and could build up over time until the pond is threatened.

The combination of chemicals and water is one reason Lanier suggested landscape firms consider subcontracting out pond management services. "Any time you're around water, that increases your workers' compensation insurance exposure. Most states also have certification and licensing requirements before you can work in aquatics."

Unless landscape companies are doing a steady volume of pond maintenance work, Lanier said, "it doesn't pay to do the work yourself when only a couple of these jobs come your way." Often he has seen landscapers waste substantial sums of money in chemical supplies, because they lacked the knowledge to know what works.

"If you're looking to hire a subcontractor then obtain references," concluded Lanier. Candidates may be found, he said, among the members of the North American Lake Management Society in Alachua, Fla.

For his part, Nagel seeks out





subcontractors with a proven track record of performance. As an example, he cited the introduction and care of desirable plants into a pond system. "You can't just drop in a water lily and expect it to survive. The plants have to be installed properly and nurtured carefully."

Contractors who perform pond management must treat it as a separate business, "and not just an add-on," Moncrief said. Aquatics is technically complex, and the right credentials and certifications are essential. He also cited regulatory compliance and liability exposures as barriers to entering the field.

But for contractors who take the plunge, Hamilton argues that pond management can be a profitable business. Mark ups are usually higher for aquatic maintenance than for other landscaping services, because the market tends to be upscale customers looking for expert help.

"Pond management is a service you can make money on," Hamilton said, "and not just an extra you have to throw in for the sake Environmental trends have benefited the market for pond management services.

of getting the overall job. And the best way to sell your services is to simply keep your eyes open especially on hot sunny days when algae is most likely to be on customers' minds."

Hamilton described the market as wide open and growing fast. Only a few years ago, he recalled, Aeromix was one of the few makers of pond aerators to appear at a green industry trade show, but now the firm has more than 10 competitors.

"Right now there aren't a lot of landscape companies that have entered pond management," concluded Hamilton, "because it's only been in recent years that we've started hearing so much about water conservation and environmentalism. But today those concerns are making pond management one of the fastest growing aspects of our industry."

The author is a free-lance writer based in Schroon Lake, N.Y.

TURFGRASS MANAGEMENT

WEED CONTROL PERCEPTION VS. REALITY

WEED CONTROL IS one of those things that lawn maintenance operators seem to do automatically. Put down the same preemergent herbicide at the same time every spring. Spray the same postemergent every spring and fall. As long as the weeds go away, we don't give much thought to weed control.

Unfortunately, the customer can easily see when a weed control program isn't working effectively. Even worse, they can easily develop the *perception* that your weed control efforts are not effective.

Customer dissatisfaction with weed control is one of the leading reasons for both callbacks and lost accounts. If you seem to suffer from weeds more than your competitors, perhaps you should re-evaluate your weed control program. Maybe all it needs is a little fine tuning, or perhaps major renovation is called for.

Be open to suggestions or innovations, and be willing to experiment with new techniques or herbicides as they become available.

MAKE THE CUSTOMER HELP YOU.

We are all aware of the fact that weeds present little or no problem in the healthy, vigorous lawn. Quite often, customers control irrigation, mowing or some other maintenance aspect of their lawn, but seldom do they possess the know-how to do it properly.

Use educational materials to promote healthy mowing practices, including proper height and frequency. Encourage the return of clippings. This process recycles the fertilizer that has been applied to the lawn and may reduce the



Poor weed control can signal the end of an account — sometimes without any knowledge that something had gone wrong. To get by this enigma, it's important to work with your customers to develop reasonable expectations for weed-free lawns.

By Dr. Tony Koski

incidence of certain diseases that might weaken the turf and allow weed invasion.

A few ill-timed "scalpings" during the spring can weaken a turf enough so that no preemergent herbicide will satisfactorily control the crabgrass or foxtail germinating at that time.

The inability to water properly also may doom the best weed control program. For example, reluctance to irrigate during a dry spring may cause preemergent programs to fail because the herbicide was never washed off of foliage or granules into the soil. There may have been enough moisture in the soil, however, to allow crabgrass to germinate.

The result: Weeds appear even though the product was applied at the proper rate and on the correct date.

On the other hand, constant, excessive moisture during the spring and early summer can reduce the effectiveness of the best preemergent herbicides. The moisture enhances microbial degradation of the herbicide, while providing optimal germination conditions for annual weeds.

By allowing some drying between irrigation events, the residual activity of the preemergent Oxalis can be controlled with both pre- and postemergent herbicides.

is lengthened and stress is imposed on the seedling weeds. At the other extreme, excessivedrought during early summer may thin the turf, making it vulnerable to invasion by spurge or goosegrass.

In another scenario, postemergent applications for existing weeds are wasted if the client irrigates the lawn a couple of hours after you have made the application. A few well-timed bits of instruction on proper irrigation management throughout the growing season can be a cost-effective method of improving weed control.

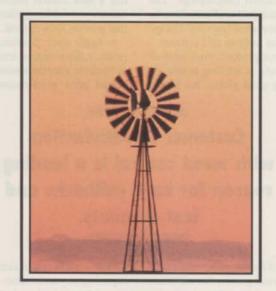
By teaching the customer the basics of turfgrass management you obtain the most out of your lawn management program, and the client gets a better looking lawn. And you might even save some money doing it via fewer callbacks and lost accounts.

TRY NEW IDEAS/PRODUCTS.

Many operators are locked into the thought of using a single preemergent herbicide application during the spring, with the *hope* of getting season-long crabgrass control.

This idea may work effectively with *some* products in the more northern regions of the country on crabgrass, but it will not work as you move further south and have to deal with foxtail, goosegrass or spurge.

Controlling most weeds (especially annual grassy weeds) via the use of preemergent herbicides is (continued on page 66)



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Weed Control (continued from page 64)

probably easiest, safest and most effective of the chemical methods, but you must be willing to adapt your program to allow for changes in weeds species, available products and perhaps even the development of resistance to certain

herbicides. Additionally, it may be necessary to complement preemergent applications with spot treatments of postemergent herbicides. Where your old weed control program doesn't appear to work as well as it used to, consider the following strategies to get you on track again:

 Make split applications of preemergent products in spring and early summer, six to 10 weeks apart. This is important when using short-lived preemergent products or when dealing with late germinating annuals like goosegrass or spurge.

Follow label instructions regarding maximum rates to be applied over a season. Over application of some preemergent herbicides (especially those in the dinitroaniline family, like pendimethalin or benefin/trifluralin) can cause injury to cool-season turf species.

Use a single application of

preemergent herbicide in the spring, and follow up with postemergent products such as organic arsenicals (MSMA, DSMA) or Acclaim (fenoxaprop). The postemergent application can be used to control "escapes" that appear in early to mid summer.

These products work most effectively on seedling or non-tillering grass plants, but higher maintenance professional who, pressed for time in the spring, may otherwise make preemergent applications so early in the spring that a split control becomes a necessity, or risk late applications that provide little control.

 Apply only postemergent products, like an organic arsenical or Acclaim, after the window for annual grass germination has

Customer dissatisfaction with weed control is a leading reason for both callbacks and lost accounts.

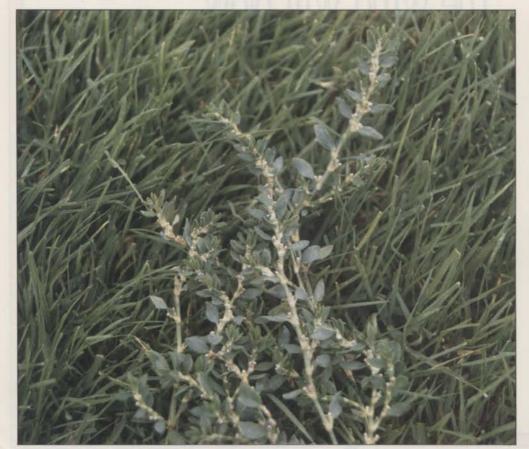
rates of Acclaim work effectively on annual grasses that are tillering. Acclaim will control only grasses.

 Use a herbicide which possesses both pre- and postemergent effects on annual grassy weeds.
 Application timing is not as critical with these herbicides because they don't have to be "in place" before weed seed germination like all other preemergent products.

This offers flexibility to the

passed — early to mid summer, depending on your location — and the weeds are visible in the lawn. This technique allows spot treatment and essentially involves some of the principles of integrated pest management.

CONSIDER IPM. Some operators shudder when they hear the acronym IPM. Most, however, incorporate some aspects of IPM into their program; perhaps without even realizing it.



IPM does not mean elimination of herbicides from the weed control program. It is simply a program that involves scouting for pests, use of experience and past information regarding pest activity, implementation of cultural *and* chemical controls, and an evaluation of the success (or failure) of the control measures that were used.

IPM also allows the maintenance operator to spot treat problem areas, instead of using blanket, preventive applications. Chemical use is not eliminated from the program, but each herbicide is simply viewed as another "tool in the toolbox".

Time that might be otherwise spent making blanket, preventive preemergent applications in the spring, for example, could be used for checking thatch accumulation or looking for insects like sod webworms or billbugs that could potentially thin out the turf, making it more prone to later weed invasion.

An insecticide application made at this point could result in a higher quality lawn, with fewer weeds later in the year. Or the time could be used to communicate more effective mowing and irrigation techniques to the homeowner. On lawns of long-time customers, spot applications of preemergent herbicides along the sidewalk, driveway or street curb (where you have always seen weeds in the past) may be all that is needed to provide season-long control for an otherwise healthy lawn.

The money saved in reduced pesticide costs can sometimes offset the extra labor required to offer an IPM lawn care program. Don't be afraid to put a premium price on such a program, however, because customers today seem quite receptive to the idea of paying more for reduced chemical use — if turf quality does not suffer.

TARGET PROBLEM WEEDS. Some weed species appear to be especially problematic across the country. For these species, it is important to use proper cultural and chemical techniques for control without compromising the success of the remainder of the weed control program.

(continued on page 68)

Knotwood germinates in late winter and early spring; it is difficult to control when mature.

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Weed Control

(continued from page 66)

Some of the tough-to-control weeds with control strategies are as follows:

• Goosegrass Use preemergent herbicides recommended for goosegrass, and consider split applications where pressure is severe. This weed germinates late in the spring and during the summer. Reduce compaction via core cultivation on severely affected sites to enhance turfgrass vigor.

• Spurge A summer annual, spurge germinates in late spring and during the summer. It can be controlled with spring preemergent applications of pendimethalin, DCPA, dithiopyr and isoxaben.

Postemergent applications become much less effective as the plants become larger. Successful control of younger plants can be achieved with products containing triclopyr, 2,4-DP, clopyralid and Trimec-type herbicides.

• Oxalis can be controlled with spring preemergent applications of dithiopyr, pendimethalin, oxadiazon and isoxaben. Postemergent products containing triclopyr, clopyralid and 2,4-DP are most effective.

 Knotweed germinates very early in the spring, well before most maintenance operators have made their preemergent applications. Pendimethalin, isoxaben and DCPA will work effectively if applied following snow melt in the spring. A late fall application of pendimethalin or isoxaben will also provide excellent knotweed suppression the following spring.

Knotweed is very difficult to control once it becomes a large plant. Postemergent applications in early to mid spring, using 2,4-DP or triclopyr-containing herbicides can effectively control young knotweed plants. Core cultivation of severely infested areas is useful because knotweed is generally a problem on compacted soils.

• Speedwell There are many species of speedwell that are becoming regional problems in home lawns across the country.

Some species, including creeping speedwell, can be effectively controlled with DCPA applied in a postemergent fashion (wettable powder or flowable formulations only; the granular formulations are ineffective against speedwell).

Some species of speedwell are unaffected by DCPA. Thyme-leaf speedwell, and possibly others, can be prevented from seed by using isoxaben. Postemergent control of seedling and mature speedwell is most effective when herbicide formulations containing triclopyr, clopyralid or 2,4-DP are used.

· Violets Probably the most difficult weed to control nationwide, violets always require follow-up applications within two to four weeks of the first postemergent application. Herbicides containing triclopyr, clopyralid and 2,4-DP can be effective with repeat applications. Preemergent control doesn't appear effective with any products now available.

In summary, the most successful weed control programs use a combination of cultural and chemical control measures. Included here is education of the customer with respect to proper turf management principles.

It also is important that you provide the customer with realistic information regarding expectations that you have for your weed control program. When expectations of the customer are unrealistically high - don't promise a 100 percent weed-free lawn and weeds appear in the lawn despite your best efforts, callbacks and customer loss become more of a problem. This is especially important when dealing with lawns that contain some of the more difficult-to-control problem weeds.

In addition, it's important that the maintenance professional keep an open mind regarding new herbicides and innovative or unusual weed control strategies. Willingness to adapt and change is what keeps effective weed control programs successful.

The author is extension turfgrass specialist in the department of horticulture at Colorado State University, Fort Collins, Colo.

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Focus on Equipment

SELECTING TRIMMERS AND BRUSHCUTTERS TO MEET YOUR NEEDS

SELECTING A trimmer or brushcutter? Confused? It's no wonder. The lawn and landscape maintenance market has been overrun with models in the last few years.

So where to begin when selecting trimmers or brushcutters for a professional landscape business?

First and foremost, select quality products able to withstand the kind of rugged use they'll be expected to deliver working in the field. Choose easy-to-service equipment offering readily available quality replacement parts.

Visit your local servicing dealer for a selection of such merchandise. In addition to offering top quality equipment, a servicing dealer offers a knowledgeable staff qualified to assist landscapers

in the selection of appropriate equipment for the job. Servicing dealers also offer service after the sale - a necessity for busy commercial operations that demand equipment that can earn - not cost - money.

Some dealerships even boast field sales representatives who act as liaisons with the dealership's commercial customers, servicing their equipment needs on a regular, continued basis.

Assessing your trimming and brushcutter needs is of paramount importance when working with a servicing dealer. Will the equipment be used primarily to clear grass around buildings, flowerbeds or trees - work appropriate for a trimmer? Or will it be used to mow thick weeds or brush or to fell small trees jobs more suited to brushcutters or clearing saws?

How often and how long will the unit be used? Given such information, a dealer can ensure selection of the appropriate unit, the right size blade and proper accessories for the job.

THE OPTION GAME. Depending on business needs, a contractor can select trimmers and brushcutters with curved or straight shafts. Curved shafts, typically reserved for homeowner units, are preferred by some because the unit's string head is positioned closer to the operator's body, making the equipment especially easy to



Proper equipment selection assures operator comfort and product longevity.

maneuver when trimming around shrubs, flower beds, walls and corners.

Most commercial operators, however, opt for straight shaft units. Trimmers and brushcutters equipped with straight shafts allow a longer reach, so the operator can mow a larger area with fewer steps being taken.

Straight shaft units can offer low vibration and durability - making them appropriate for heavier jobs and even more appealing to commercial users whose units are subjected to particularly demanding conditions.

Trimmers and brushcutters also come equipped with various handles. Bicycle handles are most appropriate for heavy mowing and clearing applications where few obstacles are present. Looped handles offer more maneuverability and lighter weight than bicycle-styled handles, although units equipped with them should not be used with a brushcutter blade. Yet another option is the J-handled unit, which offers the maneuverability of looped handles and will accept a brushcutter blade.

The units offer different types of blades and heads, as well. For heavy jobs requiring a brushcutter, make sure to select a quality blade able to withstand the unit's power. However, when choosing between string trimmer heads that are automatic, "tap and go" or fixed line, operator preference varies widely.

Automatic heads are the most convenient,

but tend to use the most line. Fixed line heads are more conservative with string and have the fewest maintenance problems, but are slightly less convenient to use.

EQUIPMENT ERGONOMICS.

When selecting trimmers and brushcutters, be sure to look for products that are ergonomically well designed in order to ensure operator comfort and ease of operation. Low weight, minimal vibration and low noise levels - the result of high quality mufflers - are particularly important to commercial operators handling equipment for much of the day.

Some units make starting simple by offering a unique one button injection starting

system: the operator simply presses a quick start button and pulls the starter cord. No choking or half throttle is necessary and the blade never rotates during starting.

Look for a unit featuring a smooth, slim engine housing design, allowing the operator to carry it close to the body, reducing strain on shoulders and back. The sleekness results in a tool more comfortable to handle and easier to maneuver.

Also check for a brushcutter harness featuring well-padded shoulder straps, which distribute the weight of the load over a large surface; this, too, will reduce pressure on the operator's shoulders. A harness should be easy to adjust for different body sizes. Some harnesses will offer shock-absorbing hip protection.

For added operator comfort, look for handles that are fully adjustable for individual use.

Make sure your dealer sets up the unit and briefs you thoroughly on the proper operation; failing to do so can mean incorrectly operated equipment running to less than its peak performance. This pushes the unit harder, ultimately shortening the unit's life - and costing you undue dollars. When buying new equipment, have the dealer explain how to adjust ergonomic features such as hand grips, handle bars and the harness so you and

(continued on page 83)

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Lawn & Landscape

Focus on Trees & Ornamentals

CREATING THE IDEAL TREE ENVIRONMENT

WELL-CHOSEN TREES set the tone of the landscape: airy and open, dense and protective, elegant and decorative or sturdy and stable.

Trees can become the kaleidoscope of the seasons, greeting spring with blossoms or bursting buds, echoing the green of the lawn in summer, signaling autumn with vibrant colors and outlining the starkness of a winter day.

Trees absorb carbon dioxide and give off oxygen. Their shade can cool hot summer days and cut air conditioning costs. Trees can form a barrier against chilling winter winds.

Because trees are so important to the landscape, steer your customers to the tree or trees most compatible with the growing conditions. A tree will do better, and be easier to care for, the more closely its needs match the conditions under which it will grow.

Local nurseries and area extension agents are excellent sources of information on tree selection. They can also alert you to specific drawbacks of certain varieties. Knowing what to expect will make your job easier.

Some clients will insist on varieties that are borderline for survival in your region.

If this is the case, explain the disadvantages up front so they understand there may be problems. Then do everything you can to help the tree survive.

Regional conditions are only part of selecting the right tree. The texture of the soil, along with its moisture holding and drainage capacities, will help determine which tree to plant. Some trees thrive in sandy loam; others prefer a heavy mix of loam and clay. Some trees develop root problems in moist soils; others like "wet feet." In many places, only drought-tolerant trees can survive.

EXTERNAL FACTORS. Each landscape is filled with microclimates of varying conditions that will affect the tree's growth. A windy hillside that is perfect for some trees will stunt the development of others. Shielded areas, protected from winds, will produce thriving growth on some varieties and encourage fungus problems on others. Low spots may become cold pockets, exposing tender flowering and fruiting trees to early season frosts that might be avoided in other locations of the yard.

The impact of existing plants must be considered also. Look at the aesthetics of the tree - its shape, form, color, the density of its foliage - for what it can add to the landscape design, both now and as the tree matures.

Beware of interactive problems between plants. Nearby cedar trees may contribute to cedar-apple rust infestations of certain crabapple varieties. Large mature trees may have such extensive root systems that newly planted trees are starved for water and nutrients.

Integrating trees into the landscape can be quite involved. Consider the height and spread of the mature tree in relation to overhead wires. Judge the effect of mature roots on hardscape features such as walls, patios, driveways and sidewalks. Sewer and septic systems and underground cables and power lines must be located before planting, and allowances made to avoid future root interference.

Take into account the natural cycle of tree growth. Poorly placed trees can add greatly to your work load. Falling leaves litter pools, dropped fruit makes walkways unsightly and slippery and low branches hamper mowing.

Advances in the nursery industry have greatly extended the tree planting season.

Bareroot trees are best planted during the spring, ideally from the time when the

> ground becomes warm enough to dig until the plant comes into full leaf. Balled and burlapped and container grown trees have a much longer working interval. Depending on regional weather conditions, they can be planted as long as the ground is workable. In southern states, trees are planted yearround.

Follow local recommendations on tree planting procedures. The size, shape and preparation of the planting hole must be adapted to the soil and conditions of the region. Roughing up the soil surface of the planting hole helps to encourage rooting beyond the soil ball into the native soil.

Where drainage is adequate, form a birm of soil around the outer edge of the planting hole to catch water. Where soils are heavy and (continued on page 76)



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USE READER SERVICE #43

Trees & Ornamentals (continued from page 74)

drainage is poor, mound the soil slightly, sloping away from the tree, to avoid excess water.

Newly planted trees of any type need adequate water, especially during the transition period right after planting when some roots have been damaged and new roots are forming. Most of your customers will feel sorry for the thirsty tree and decide to water it every day unless you tell them otherwise.

You may need to show them how to position a trickling hose around the drip line and give them the approximate time to keep the water going. Remind them that most trees will do well with a thorough soaking once a week, unless unusually hot and dry weather mandates otherwise.

Even established trees will benefit from a thorough watering when nature fails to provide needed rains. Water lances and root feeders can be used on established trees to avoid wasting water, but don't use these aids on trees the first year after planting.

If customers will be doing the watering, show them how to insert the point more easily with the water running. Caution them about using a slow stream of water to avoid washing soil away from the roots. Show them how to space the lances at regular intervals within the root zone. Most active tree roots will be within the top 8 to 12 inches of the soil surface, and radiate



Even small trees add grace to the landscape, breaking up open expanses of grass and creating interesting focal points.

from a bit inside the drip line to far beyond it.

Drip irrigation is an excellent method of watering trees. Water is applied slowly just where it's needed. Additional emitters, or those allowing more water per hour, can be added as the tree grows. Sprinkler systems designed for turf will not provide adequate water for trees. Consider extending the system with bubblers or drip emitters designed for trees if water shortages are persistent.

CREATING AN ENVIRONMENT. Mulch is an excellent soil insulator for both new and established trees. Spread a 2- to 4-inch layer of mulch within the dripline of the tree. Keep a small space, approximately an inch or two, between the mulch and the trunk of the tree. The mulch keeps the soil temperature more even, helps to retain moisture, discourages weed growth and makes mowing easier.

A layer of landscape fabric can be placed beneath the mulch for additional weed control. The mulch keeps mowers away from the tree trunks and reduces the need for trimming which also cuts down on the possibility of damage from blades and weed whip cord.

Be cautious when fertilizing trees at planting. Rapid release or excessively strong fertilizers can do more harm than good. Bareroot trees may be watered in with root stimulator products designed for this purpose. Long-term, slow-release fertilizer pellets or packets may be placed just beyond the root ball when planting balled and burlapped or container grown trees.

For established trees, granular fertilizer and fertilizer spikes are best applied prior to a period of rapid growth. Even in warm climates where plants grow year-round, longer days will trigger more rapid growth. In regions where sap flow stops during cold weather, the best timing is from the late fall until sap (continued on page 78)

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Trees & Ornamentals

(continued from page 76)

begins to flow in the spring. This way, nutrients are carried to all sections of the plant with the rising sap.

Good results are obtained when applications are made anytime during the active growing seasons of spring and summer. Avoid fertilization approximately eight weeks prior to the onset of cold weather.

Liquid fertilizers, added to the water given to the trees, can only be used when the plant is actively growing. Applying them too early or too late is a waste of nutrients.

Have soil tests run to determine the exact nutrient requirements of struggling trees. Remember that pH can be a contributing factor. An acid or alkaline soil may tie up nutrients that would otherwise be available to the tree. Adjust the pH as needed. Micronutrients can be applied to correct growth inhibiting deficiencies.

TIMING CONTROL. Control insects and diseases on smaller trees using an integrated pest management approach. The



best defense against problems is a healthy tree. Trees are most susceptible when they are stressed and weakened.

Observation is the key to IPM. Check trees on a regular basis. Look for unusual color, wilting, lack of vigor, discoloration, wounds or holes on the trunk or branches.

When diseases have been a problem, clean up fallen leaves and other debris from beneath the tree. Prune off any damaged tissue, dipping pruners or saws in a sterilizing solution between each cut. Apply a horticultural oil spray according to label directions to smother disease organisms. When chemical treatments are required, apply them as a preventive or as soon as possible after the disease activity is noted.

Learn the timing of major insect pest infestations. Many are triggered by a combination of day length, temperature and moisture.

Knowing what to look for and when to look for it keeps serious problems from developing.

Time preventive controls for the greatest impact. A horticultural oil spray may help to control certain recurring problems, such as scale. Always follow label directions precisely. Most products only eliminate those insects at a certain stage of development.

Repeat applications within the time span designated on the label. With many insects, if timing is delayed, a batch of pests will have already passed the desired stage and laid eggs for another hatching.

Wrap the trunks of young deciduous trees to protect them from sun scald. Tree wrap also discourages nibbling rodents and helps ward off borers. Remove the wrap at the end of each season. Examine the bark carefully for damage, then rewrap the trunk if necessary.

Prepare trees in northern climates for winter with adequate water. To cut down on the effects of drying winds, an antitranspirant may be applied. If rain and snow have failed to supply enough moisture, water trees during the winter on days when the soil will absorb the water. New plantings, evergreens and stressed trees are most likely to need this extra care.

All trees have their own cycle, even evergreens and those in year-round warmth. Observe and note the condition of the trees under your care during all their seasonal cycles. When you're familiar with their regular growth patterns, you'll notice deviations more quickly and find problems easier to keep under control. — *Steve and Suz Trusty*

The authors are partners in Trusty & Associates, Council Bluffs, Iowa, and are consultants to the horticulture trade.

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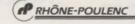


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MAINTENANCE

Focus on Seed

LOOKING FOR LOW MAINTENANCE TURF? TRY FESCUES

WITH SPRING ON the horizon, it is time to consider which types of turfgrasses are best for the season. Fescues are cool-season grasses that, by definition, do well during the cooler periods of the growing season — spring and fall in the North; fall, winter and spring in the Southern regions.

GROUPINGS. Fescues cover a wide range of species. In fact, Festuca means "weedy grasses" in Latin, but the turf species of fescue can be divided into *tall fescues* and *fine fescues*.

Tall fescues are coarse, with a leaf width of approximately 1/4-inch. With its

deep root system, tall fescue can reach lower in the soil structure to tap water sources. This feature, along with a rapid growth rate, makes it a tough turfgrass. Thus, it performs well under heat and drought conditions and performs well in the shade. In addition, tall fescues are often green year-round in the South.

Tall varieties are the preferred choice for general turf in the transition zone — Kentucky to Atlanta. This area is too hot in the summer for most other cool-season grasses and too cold in the winter for warm-season grasses.

In the past couple of years, a great deal of information has been released about dwarf tall fescues. These new varieties are generally much darker green and more dense, with finer leaf blades or texture. In the seed fields of the Pacific Northwest, where the majority of the dwarf seed is grown, the varieties are distinctly shorter than those available 10 years ago.

However, whenever these dwarf varieties are maintained at normal mowing heights of 2 to 4 inches, many of the differences become less noticeable. The dwarf varieties will grow slightly slower than older varieties, which could result in slightly less mowing over the entire year.

One word of caution: Many dwarf varieties tend to be more susceptible to diseases such as brown patch, especially in the hot and humid Southeast. For the dry climate of Southern California, brown patch is not usually a problem for the dwarfs.

Another misconception about tall fescue:



Tall fescue varieties are the preferred choice for general turf in the transition zone.

In the hot, dry Southern California climate where irrigation is required for survival of turf, the cool-season grasses (including tall fescues) are not as water efficient as the warm-season turfgrasses such as bermudagrass and St. Augustinegrass. However, the tall fescues do have the advantage over bermudagrass during the winter. Tall fescue will be green and growing, whereas the bermuda will be dormant and brown.

Fine fescues have a leaf width of approximately 1/16 inch. Although there are three types within the "fine family" chewings, red and hard — they are almost impossible to distinguish from each other without special tests. Of the three, however, the hard fescue is most durable.

Not an aggressive grass, fines do best under low maintenance and wear. In fact, it is the least wear tolerant of all coolseason grasses. However, the grass does perform particularly well in the shade and competes well with tree roots. Fine fescues are definitely Northern grasses and are most prosperous north of Kentucky. In fact, the fines display more winter tolerance than the tall fescues, especially at the critical seedling stage.

APPLICATIONS. Because they perform well with little maintenance, tall fescue varieties do well on sports fields, at industrial parks and in large lawn areas that only require mowing and some fertilization. It should not be used for greens, tees and, usually, fairways as golfers dislike the coarse blades.

If a maintenance program consists of only mowing, such as on roadsides, the tall fescue is an excellent choice.

Fine fescues, with their low fertilization and water needs, produce an attractive turf. Because of their sensitivity to traffic, they should be used on golf course roughs and for large office or industrial parks that receive little traffic.

More tolerant grasses such as bluegrass or perennial ryegrass should be sown in high traffic areas such as around sidewalks. Also, if higher maintenance is performed (more water and fertilizer), bluegrass or perennial ryegrass may be a better choice.

In combination with colonial bentgrass, the fine varieties are adequate for home lawns and at industrial parks in the Pacific Northwest that are under low maintenance. They also perform better than other grasses in the acidic, sandy and stony soils of the Northeast.

PESTS. As a hardy turfgrass, tall fescue out-competes most weeds, especially better than fine fescues and bluegrasses. In addition, it works best alone. However, it can be combined with 10 percent Kentucky bluegrass. A greater amount, though, and the bluegrass may dominate, causing a patchy appearance.

When combined with ryegrass, tall fescue may be out-competed in the early seedling stages. And, under periods of stress when the ryegrass dies, the tall doesn't spread to fill the empty areas, leaving unsightly patches. Since tall fescue germinates almost as quickly as ryegrass, there is generally no advantage to combining them.

Tall fescue is tolerant of most diseases except for brown patch and some leafspot. It is also generally tolerant of most insects. However, those tall fescue varieties containing endophytes are resistant to all surface feeding insects.

Fine fescues are not as competitive with weeds as the tall fescues and are usually less dominant. Fine varieties can be combined with Kentucky bluegrass and ryegrass. However, when combined with tall fescue, the fine fescues are quickly dominated. As a result, there is little advantage from this type of mixture.

These grasses are susceptible to dollarspot, leafspots and occasionally red thread. Again, non-aggressiveness often puts the grass at the mercy of the insect. Fine fescues containing endophyte will have protection against surface feeding insects.

When establishing any fescue variety, it is best to seed, as fescue sod does not hold together well without netting. Talls germinate quicker than fine. However, with a little more patience, the fine fescues can be cultivated into an excellent turfgrass.

TWO FOR ONE!

And, in many of today's turf and landscaping businesses, the bottom line *is* the bottom line. Fescues are generally costeffective grasses that require little maintenance and care except mowing and some water. Thus, a savings in terms of labor and dollars is realized by the professional turf manager. — *Virgil Meier*

The author is technical associate, turfgrass research, for the O.M. Scott & Sons Co.

Trimmers

(continued from page 70)

your crews can use them to full advantage. Properly prepared, the unit should be comfortable and efficient to use.

MAXIMUM MAINTENANCE. After selecting a unit, how should it be maintained to ensure maximum performance and a full life?

Trimmers and brushcutters require minimal maintenance. At the end of each day it's used, clean the exterior of the unit, as well as the air filter. Tighten any loose nuts and bolts, and check the carburetor and idle speed for needed adjustments. Check the brushcutter blade — does it need to be sharpened or replaced? Maintaining standard brushcutter blades for cutting grass, weeds or light brush is fairly simple, but critical; nothing shortens the life of a brushcutter faster than a dull blade. Servicing dealers and user manuals are helpful in determining when and how to mount a new blade safely and correctly.

While there are numerous brushcutter blade types, use only blades recommended by the manufacturer.

At the end of the week, inspect the starter, starter cord and return spring. Also check that the air intake on the starter is not obstructed, and that the angular gear box is three-fourths full of grease. Lubricate the linkages and bearing points of the throttle control with thin lubricating oil, and clean the cooling fins on the cylinder.

Clean the fuel tank, the carburetor's outside region, and the fan and its surrounding area on a monthly basis. Only use recommended gas and oil. Quality twocycle gas and oil will keep your equipment running better, longer.

And isn't that what it's all about? — *Mark Michaels*

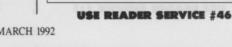
The author is forestry product merchandising manager for Husqvarna Forest & Garden Co., Charlotte, N.C.



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Lawn & Landscape MAINTENANCE

People





Nash

Van Vleet

KENNETH HOLBROOK JR. was appointed president of Grace-Sierra Horticultural Products Co. Previously, Holbrook was president of Koch Materials Co., a division of Koch Industries.

Jacklin Seed Co. announced the promotions of **Susan Samudio** and **Mark Sellmann** to associate plant breeders.

Samudio conducts research and development in Post Falls, Idaho, and at Jacklin facilities in Yuma, Ariz.

Sellmann's primary focus is fine fescue evaluation work and the tall fescue breeding program.

ICI Professional Products Co. named **Charles Nash** business director. Nash oversees the division's overall business growth and direction. Previously, he was business manager for the division.

Joe Williams was appointed district manager for Hunter Industries. In his new position, Williams coordinates sales and marketing in Colorado, Iowa, Kansas, western Missouri, Nebraska, South Dakota and Wyoming.

Also at Hunter, **Troy Leezy** was appointed district manager for nine midwestern states, including Illinois, Indiana, Kentucky, Michigan, Minnesota, eastern Missouri, North Dakota, Ohio and Wisconsin.

Williams and Leezy work with irrigation contractors, landscape architects, municipalities, irrigation specifiers and equipment specifiers.

Larry Van Vleet has been appointed area specifications manager for the commercial division of Rain Bird Sales. His territory covers the northern portion of Southern California, as well as Clark County, Nev.

In his new position, Van Vleet serves as liaison between Rain Bird management and landscape architects, irrigation consultants and city and county officials on equipment specifications.

Rain Bird Sales also announced the appointment of **John Terry** to technical services manager for the commercial division.

He is responsible for the Rain Bird Authorized Service Center program, training and testing all ASC technicians and qualifying distributors.

FMC Corp. has formed a turf and ornamentals unit within its Agricultural Chemical Specialty Products Group. William Fetterolf, turf and ornamentals marketing manager, named the following regional representatives for the new group: Arden Bull, northern region; Duane Melton, southeast region; Mark Kelling, southcentral region; and Cynthia Johnson, western region.



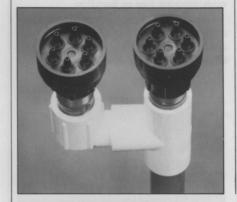
MARCH 1992 • LAWN & LANDSCAPE MAINTENANCE



Products

SALCO PRODUCTS added a 12-outlet emitter to its line of pressure compensating, selfflushing drip emitters. Model PCI2T can be used for tightly spaced plant material or when future plant growth requires multi-outlet emitters.

The 12-outlet emitters are available in flow rates of 1/2, 1 and 2 gallons per hour, and are designed to fit into the Salco DAS — 8 access sleeve. They are



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FRESH WATER TANK *Bolts directly to your equipment. *2.5 gallon fresh water tank with 5" fill and valve. *Universal pump soap dispenser. *Rugged powder-coated frame. *Universal mounting bracket.

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Product Spotlight

TWO INSECTICIDES from **DowElanco** are now available for mole cricket control. PageantTM DF insecticide received federal EPA registration and DursbanTM 50WSP insecticide received a label amendment, allowing both to be used as mole cricket controls in turfgrasses. Dursban 50WSP is already used to control a range of pests on turf, ornamentals and trees.

Dursban also is available as an emulsifiable concentrate for mole cricket control in Alabama, Florida, Georgia, North Carolina and South Carolina as permitted under the provisions of FIFRA Section 2.

Circle 125 on reader service card

made of high-impact-resistant polypropylene containing UV inhibitors and are color coded to distinguish flow rates. **Circle 126 on reader service card**

The unitized fueler from **Areo-Power** is an above-ground storage tank that provides storage and secondary containment for gasoline and chemicals.

The UL-listed tanks range in capacity

from 300 gallons to 20,000 gallons and provide overfill protection. A rainshield system minimizes water accumulation in the containment dike and keeps leaves and other debris out.

Standard features include an emergency vent and overflow diverter, a dispenser drip pan, an overflow pipe and locking lid and a 24-inch access manhole.

Circle 127 on reader service card





TT1050E2* Twin Tank 2 12v Motors 2 Piston Pumps 50 & 100 Gal. PCO Tanks **TS200* Tree Sprayer** 8 H.P. Gas Engine 14GPM Diaphragm Pump 6:1 Gear Reduction

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USE READER SERVICE #13

A complete selection of American and European water gardening products is available from **MacKenzie Nursery Supply.** Products include pools, pool liners, water displays and accessories.

Circle 128 on reader service card

Exmark Manufacturing offers a bolt-on, bolt-off mulching accessory that retrofits all Exmark side-discharge mowers.

Bolt-on baffles turn each cutting-blade area into an individual mulching chamber. By restricting the transfer of grass from one blade to another, the mulching accessory prevents windrowing and bunching of mulched materials. It also provides for the

BAKER QUALITY

uniform distribution of mulched materials over the full cutting width of the deck. **Circle 129 on reader service card**

The model 725 two-wheel tractor from **BCS** accommodates 10 rear- and frontmounted attachments, including rear tine tiller, cutter bar mower, power sweeper, snow thrower, sprayer, 36-inch dozer/ scraper blade, chipper/shredder and adjustable or combined ridger.



The tractor is powered by an 8-h.p. Kohler engine. A low center of gravity design provides stability on uneven terrain. All controls are handle-bar mounted for convenient operation.

Optional features include electric start and a spring-loaded quick coupler to ease the use of attachments.

Circle 130 on reader service card

The Toro Co. introduced the Yard CyclerTM compost bin and compost accelerators. The 12.5-bushel bin and accelerators process up to 75 bags of grass clippings in a single season.

Patented mixing slots allow for easy stirring with a garden fork. No heavy lifting or pushing is required, and there is no contact with the bin contents.

Circle 131 on reader service card

Oly-Ola Recreational Edgings offers polyethylene/vinyl edging products, including Safety-EdgTM curbing and Safety-LineTM marker.

Safety-Edg is a flexible, low maintenance landscape curb for areas where safety is especially important. Safety-Line marker is designed to replace chalk lines on outdoor athletic fields.

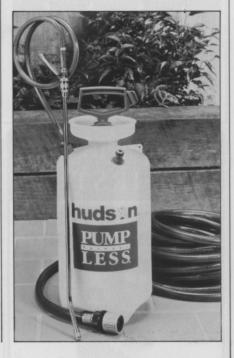
Circle 132 on reader service card

H.D. Hudson Manufacturing Co. offers the PumplessTM sprayer. Water pressure from a garden hose both fills and pressurizes the 2-gallon sprayer. A one-way valve prevents pressure loss or backflow.

Included is a regular pump to pump the conventional way when a pressurized water source is unavailable.

Circle 133 on reader service card

(continued on page 90)





<image><caption>

AND TURN GIANT LEAF PILES INTO MULCH IN MINUTES WITH THE UNIQUE VACUUM KIT. CALL TODAY AND ASK ABOUT OUR IN-HOME VIDEO DEMONSTRATION. **1-414-251-4600** M-F, 8AM-5FM, CST **1-414-251-4600** M-F, 8AM-5FM, CST **I-414-251-4600** M-F, 8AM-5FM, CST

USE READER SERVICE #14

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DISSOLVE is available in 40 oz. and 10 oz. sizes. For more information contact your Riverdale Distributor.



Riverdale Chemical Company 425 West 194th Street, Glenwood, Illinois 60425-1584

Products

(continued from page 86)

Aerospace Lubricants offers a synthetic, high-performance oil, developed for use in 2-cycle engines. Alisyn ProPower 21 features a special additive package formulation that helps an engine produce more



power with less combustion chamber deposits, ring sticking and spark plug fouling. Combustion is clean and controlled with less exhaust smoke.

Its formulation also allows it to work either as a pre-mixed oil or with an automatic oil injection system. **Circle 134 on reader service card**

Nelson introduced its PRO 8430 series 4,6,8 zone controller. It offers a compact, weather-resistant enclosure and internal transformer.

Other features include independent dual programming and large LCD display, three start times, 1- to 999-minute run times and a variety of watering schedules. **Circle 135 on reader service card**



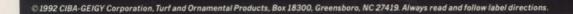
The SP1 series of knapsack and backpack sprayers from **SP Systems** offers safety and convenience features. The 4-gallon knapsack sprayer incorporates a patented design diaphragm pump that reduces leakage and is tamper-proof. The pump is constructed of non-corrosive materials. A check valve in the large-diameter cap prevents potential leaks of spraying fluid when the SP1 is accidentally tipped. **Circle 136 on reader service card**

An accounting software package is available from **Armor Systems.** Armor Premier Accounting Software is designed to increase productivity, reduce costs and control business activities for nurseries, garden centers and agriculture-related businesses.

The package offers inventory control, purchase orders, customer information, order entry, billing and accounts receivable. **Circle 137 on reader service card**

Doane Agricultural Services Co. offers Doane System software, a comprehensive, fully integrated accounting and management system for the lawn and landscape maintenance industry.

The system helps ease the bidding pro-





cess, job costing, purchase orders, inventory and more. Modules are fully integrated or can stand alone. Other modules include: billing/accounts receivable, payroll, general ledger, equipment manager, MIQS (report writer) and chemical applications manager.

Circle 138 on reader service card

Rebel II turf-type tall fescue from **Lofts Seed** features a dark green appearance and lower maintenance. As the second generation of Rebel grasses, it grows

FYI...

1992 Jacobsen catalog is now available. The 63-page brochure provides complete descriptions and specifications on the full line of professional turf equipment, including new equipment offerings.

Circle 142 on reader service card

If you hurry... The enrollment period is past for Ciba-Geigy's Triumph[®] Performance Program, but there's still time to reap some of its benefits. The promotional package provides advertising and marketing support to the lawn maintenance professional using Triumph.

Circle 143 on reader service card

Hot off the press. The Cushman Turf-Care catalog features a lineup of Turf-Truckster vehicles and attachments.

Circle 144 on reader service card

Program teaches mowing safety. Briggs & Stratton and the American Red Cross have joined forces to teach mowing safety. Offered at Red Cross chapters nation-wide, the 90-minute course includes mowing safety, basic first aid, general maintenance and yard waste recycling. A video overview is also available.

Circle 145 on reader service card

denser and darker green than the original, with improved drought and heat tolerance and greater resistance to traffic.

Rebel II adapts to sun or shade and to a variety of soils and climates.

Circle 139 on reader service card

Advent perennial ryegrass from **Jacklin** Seed exhibits heat and drought tolerance and improved brown patch resistance. It offers high density and low growth habit for home lawns and golf course use. Circle 140 on reader service card



THE WORST PART ISN'T THAT SHE'S CALLED BACK THREE TIMES, OR THAT SHE PROBABLY WON'T RENEW. THE WORST PART IS THAT SHE'S GOT NEIGHBORS.

If she's calling you about grubs, fire ants, or mole crickets, you can bet her neighbors are hearing about you, too.

Makes you wish you'd used Triumph^{*}, doesn't it? You could have delivered up to 90% control in just 2 to 3 days. Too bad. Bet you'll use Triumph first, next time.





Calendar

MARCH 26

Conifer Identification Course, Graham Visitors Center, Washington Park Arboretum, Seattle, Wash. Contact: Center for Urban Horticulture, University of Washington, GF-15, Seattle, WA 98195; 206/685-8033.

MARCH 26-27

Understanding the Urban Tree, sponsored by Rainbow Treecare, Pheasant Run Resort, St. Charles, III. Contact: Rainbow Treecare, 4601 Excelsior Blvd., St. Louis Park, MN 55416; 612/922-3810 or 800/369-3810.

MARCH 27-29

Associated Landscape Contractors of America, Student Field Days, California State Polytechnic University, Pomona. Contact: ALCA, 405 N. Washington St., Suite 104, Falls Church, VA 22046; 703/241-4004.

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APRIL 4

Xeriscaping: How to Create a Drought-Resistant Landscape, University Extension at the University of California, Davis. Contact: UC Extension, 916/757-8777.

APRIL 6

Agriculture and Green Industry Computer Expo '92, Doubletree Hotel, Ventura, Calif. Contact: University of California Cooperative Extension, 702 County Square Drive, Ventura, CA 93003-5404; 805/645-1451.

APRIL 6-7

Turfgrass Management for Professionals, University of California, Riverside. Contact: UC Extension, 714/787-5804.

APRIL 9

Water Conservation and Quality, Short Course, sponsored by the Univ. of Florida Cooperative Extension Service, Agriculture Center Auditorium, Sanford, Fla. Contact: Uday K. Yadav, 250 W. County Home Road, Sanford, FL 32773; 407/323-2500, ext. 5559.

APRIL 20-OCT. 12

AmeriFlora '92, Franklin Park, Columbus, Ohio. Contact: AmeriFlora '92, 1995 East Broad Street, Columbus, OH 43209-1679; 800/BUCKEYE.

APRIL 28-30

1992 Florida Agri-Business Computer Conference, sponsored by the University of Florida Cooperative Extension Service — IFAS, Seminole Community College, Sanford, Fla. Contact: Uday K. Yadav, 250 W. County Home Road, Sanford, FL 32773; 407/323-2500, ext. 5559.

APRIL 29-30

GreenTech '92, sponsored by the California Landscape Contractors of America, Long Beach Convention Center, Calif. Contact: CLCA, 2021 N St., Suite 300, Sacramento, CA 95814; 916/448-2522.

MAY 27-JUNE 12

Site Grading Workshop, Cornell University. Contact: Landscape Architecture Program, Cornell University, 440 Kennedy, Ithaca, NY 14853; 607/255-1801.

JULY 23-27

American Association of Nurserymen Annual Convention and Nursery Industry Trade Show, Grand Hyatt Hotel, Columbus, Ohio. Contact: Lisa Harmon, AAN, 1250 I St. NW, Suite 500, Washington, DC 20005; 202/789-2900.

JULY 26-28

International Lawn, Garden and Power Equipment Expo, Kentucky Fair and Exposition Center, Louisville, Ky. Contact: Expo '92, 6100 Dutchmans Lane, Sixth Floor, Louisville, KY 40205; 800/558-8767 or 502/473-1992.

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No Escaping Success

(continued from page 28)

consult with us, so obviously I believe in continued education. But life is education. You learn something all the time, particularly in this industry. The things you learn today aren't necessarily true tomorrow. Plants that thrived here yesterday don't thrive here today.

Q: Would you like to tap into any other market segments?

A: In time. There are certainly so many facets to our business.

Q: Such as...

A: A color company moved into our town three years ago and has done quite well. That is obviously a market that wasn't tapped. We thought that everybody had all the seasonal flowers they wanted. But this company was able to tap that market and sell just seasonal flowers.

But seasonal flowers is only one of the things. There are now several companies that just sell mulching.

Q: Are you a believer in the importance of marketing?

A: I'm becoming a believer. We're investing at least four times as much money in marketing as we did two years ago, so yes. Q: Is there a reason for your 'conversion'? A: When customers don't just walk in the door, you have to tell them why you're better than your competitors.

It's market driven. Four years ago, we were turning down \$1/4 million landscape jobs because we physically could not buy the plants for them. Why spend the money on marketing when people are beating your door down. But today, the market has changed.

Q: What qualifications do you seek in a salesperson?

A: Natural gift, number one. If he can sell me, he's past first base. If he can't sell me, he can't sell my clients because they're a lot more shrewd than I am. Q: What motivates you?

A: Sharing the vision with others and executing it. There's no greater enjoyment I have than that. And there's no greater frustration than trying to get that vision across to someone and they fumble the ball or don't want to carry it out.

Q: How do you motivate employees? **A:** Hopefully, the ideas and vision I have motivate them. They capture the concept that I'm trying to achieve and get excited about it and carry it out. If they don't, then they're not motivated and I'm not either. **Q:** What role do computers play in your operations?

A: We do all of our tracking, estimating and budgeting on the computer. So it plays a pretty strong role, but keep in mind, it's only a big calculator, a big word processor. It's a tool, but it does play a big role.

Q: How important is association involvement?

A: It's very important. I've always gone to trade shows, but until recently I didn't understand the value of talking with my competitor or understanding his problems.

Who was it that said, 'nothing good happens until people begin to talk?' I was eating lunch with a competitor and he was explaining how he wasn't big enough anymore to buy his own plant material from wholesale growers. He had to buy through brokers. I explained to him how we could help him buy wholesale, and it would save us some on freight.

Then he talked about how he does landscaping but no longer does maintenance; and how he could give us his maintenance accounts. We began to help each other in our own trade. We're competitors, but we're beneficial to one another. The trade associations help bring that out.

Q: Where is Scapes going to be in the year 2000?

A: No one knows what tomorrow brings, but based on past performance, hopefully we'll be three times where we are now.

Hopefully, we'll be a premier company. That's our dream, but we don't know it and it would be very presumptuous for us to say. That's the best answer I have.

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

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Award winning landscape company is seeking a highly motivated person to direct and oversee all aspects of its perennial and annual color programs. Responsibilities include: plant selection, design, sales, procurement, installation and maintenance. Must have extensive floraculture background. Please fax resume with work and salary history to: SCAPES INC., 404/956-0140.

...

APPLICATOR/TECHNICIAN

Thirty-three-year-old private company is seeking highly skilled and experienced certified applicator and licensed technician. Pest, weed, termite, lawn and ornamentals - all phases. Must have professional attitude, experience and be committed to growth of company. DRUG TEST-ING REOUIRED. Send resume to: Rt. 3, Box 140G, Brownwood, TX 76801.

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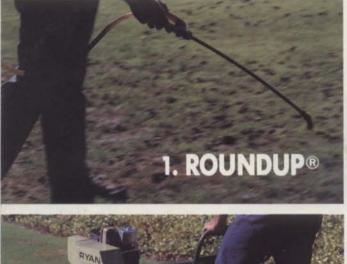
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