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FACE TO FACE

***Landscape Contractors and Industry Suppliers:
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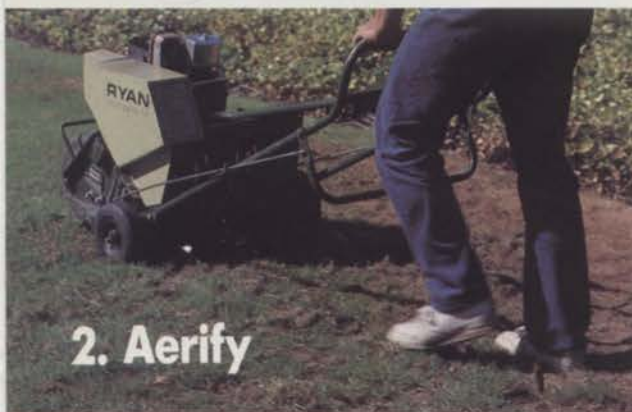
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Lawn & Landscape MAINTENANCE

VOLUME 12, NUMBER 3

MARCH 1991

Cover Illustration:
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Editor's Focus

FOR THE better part of two decades, lawn and landscape maintenance contractors have been diligently working at their craft. Some have tackled landscape design and installation, others maintenance and still others have chosen an area of specialization such as lawn spraying or hydro-seeding.

Through dedication and commitment, many professional contractors have carved a niche, some bigger than others, for themselves in the green industry.

On the other side of the spectrum, a number of industry suppliers have successfully marketed individual or an array of products for all aspects of the landscape market.

More specifically, perhaps, manufacturers have addressed the needs of the fast-growing golf course market — and rightfully so. More than 24 million golfers in the United States play on some 15,000 courses.

Through distribution channels, many manufacturers have also made consumers a key target market.

While there's no question that landscape contractors and industry suppliers have a vested interest in seeing the maintenance/installation end of the green industry grow, day-to-day business concerns often get in the way of cooperative education.

It's for that reason that *Lawn & Landscape Maintenance* magazine decided to host an unprecedented business roundtable, bringing seven leading landscape contractors together with six manufacturers of mowing equipment, among other products.

Since a forum of this magnitude had never been convened, we weren't sure how participants would respond; whether they would willingly take part in frank dialogue or if they would be hesitant to venture into discussion with competitors and buyers, as well as potential buyers, of their products.

But we were confident that the agenda we set for the industry's first such business roundtable was on the right track and we moved forward with our plans.

Those attending: Bruce Wilson, Environmental Care; Arnie Sieg, The Bruce Company of Wisconsin; Gerry Chauvin, Green Thumb Enterprises; Mike Guthrie, Ground Control Landscaping; Tim Narr, Lied's Nursery; Pete Scholz, Reinhold & Vidosh; Ed Babcock, The Brickman Group; Bob Walker, Walker Manufacturing; Wayne Whitehead, Jacobsen; Rick Cuddihe, Scag Power Equipment; George Schaefer, SnapperKees; Bill Lee, John Deere; and Gregg KinKade, Ransomes America Corp.

The result: A timely get together of two



key entities working together to address environmental and other concerns of the lawn and landscape maintenance industry.

Were solutions unearthed? Not necessarily. But what transpired were some eye-opening dialogues on mulching mowers, parts distribution, engine warranties, safety, personalized service, diversification and much more.

One growth area that's just beginning to surface in the landscape industry, echoed by many attending the roundtable, is golf course management and recreation.

Golf course maintenance to athletic fields complexes, even high school fields are ripe for customer acquisition.

On a final note, the industry is dealing with these issues on a daily basis, and at the core of these matters is service. While in general, the industry strives to satisfy the needs of their customers, it's imperative that landscapers and manufacturers alike remember each others' needs in their endeavors.

Whether on the receiving or providing end, good customer service shouldn't be taken for granted.

As Peter Glen said in his book "*It's Not My Department*," good and bad service begin right at the beginning.

•••

Also in this issue, you find a compilation of articles focusing on recycling landscape wastes.

Within the next two years, a majority of the states will have banned the disposal of horticultural wastes in landfills. Becoming more knowledgeable on methods of collecting, disposing and applying composted waste will lead to a multitude of service opportunities for the lawn and landscape maintenance professional. — *Cindy Code* ■

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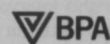
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News in Brief

NEWS DIGEST

Ariens Acquires Brake/Clutch System

Ariens Co. purchased the Polaris Blade-Brake-Clutch System from Polaris Industries of Roseau, Minn.

Ariens has been using the clutch in the BBC walk-behind mowers since 1984. All manufacturing will be moved to Ariens' Brillion, Wis., facility. In doing so, Ariens plans to market the clutch to other OEM manufacturers in the outdoor power equipment industry.

Fuqua Dealing With Sluggish Returns

Fuqua Industries, Snapper Power Equipment's parent company, is grappling with sluggish earnings and a depressed stock price, according to a report in *The Wall Street Journal*.

Results have been disappointing with Fuqua's turf equipment subsidiary turning in a small recovery, according to reports.

Aquatrols Expands Toll-Free Service

To better service its Canadian customers, Aquatrols expanded its toll-free territory. Aquatrols distributors, importers and turf professionals can now reach the firm by calling 800/257-7797.

Technical product information, distributor information, literature requests and general questions can be answered Monday through Friday, 8 a.m. to 5 p.m.

LESCO President Retires; Fitzgibbons Steps In

Ronald Dezember retired as president of LESCO Inc., Rocky River, Ohio, on March 15. James Fitzgibbons, chairman and chief executive officer will assume Dezember's duties.

CORRECTION

Total common and proprietary Kentucky bluegrass consumption in the United States, in past reports, has been estimated at approximately 48 million pounds. The information was incorrectly reported in the January issue of *LLM*.

Californians Entrenched In 5-Year Drought

ENTERING ITS FIFTH year of drought, Californians are being forced to ration their water or suffer the consequences ranging from fines to water shut-offs.

Initial response to the drought gripping California called on all communities to cut their water use by half, created a "water bank" to transfer water to the neediest areas and asked the Legislature to establish a \$100 million drought fund.

Actual water use is to be measured by localities rather than state government.

Precipitation is said to be about ¼ of average, snow-pack is 15 percent to 20 percent of normal and the crucial spring runoff from the Sierra Nevada is expected to run at only 35 percent of normal.

Concern is not rainfall related alone, but in how the water is allocated throughout the state.

The best, and possibly only, short-term solution is conservation. Since 1989 San Francisco homes and businesses have been allotted only 75 percent of their usual consumption; violators are fined. Santa Barbara mandated a 45 percent cut in household and commercial water use last year and prohibits lawn watering with sprinklers.

This month Los Angeles announced the most severe rationing in the city's history. As of March 1, households have to cut their water use 10 percent from 1990 levels.



EXPO Offers Seminars For Professionals

For the first time, the International Lawn, Garden & Power Equipment Expo will offer seminars for lawn maintenance professionals attending the annual summer event.

Sponsored by the Outdoor Power Equipment Institute, pre-EXPO sessions are set for Saturday, July 27 and will feature David Baker, an extension safety and occupational health specialist with the University of Missouri and Charles Vander Kooi, a landscape and irrigation construction consultant.

As the number of lawn maintenance contractors attending the show have steadily increased, EXPO has added first a commercial outdoor demonstration area and now seminars. The specialized commercial landscape seminars are scheduled for Saturday because Expo research shows most contractors arriving in Louisville on Saturday and returning to their businesses early in the week.

Commercial sessions include "Integrating Safety into your Total Lawn Care Management System," and "An Overview

of an Estimating System."

Dealer sessions include "Employees: Hiring, Training and Motivating," "How to Position and Grow the Commercial Side of Your Dealership" and "Pricing for Profit in the '90s."

All seminars are free and are held at the Kentucky Fair and Exposition Center, Louisville. Admission to EXPO 91 is free for those who preregister. On-site registration is \$10.

For registration information, a schedule of events and complete details on hotels call the EXPO management office, toll-free, 800/558-8767. From inside Kentucky or outside the continental United States call 502/473-1992.

OLA Holds Annual Spring Kick-Off

The Ohio Landscapers Association will hold its second annual Spring Kick-off, March 30 at Sea World, Aurora, Ohio.

The meeting is an opportunity for landscape companies to gain an understanding of opportunities available in the landscape

(continued on page 10)

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News

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industry.

Speakers include Ed Bayer, Yardmaster Inc., Painesville, Ohio; Rod Tyler, Kurtz Bros., Valley View, Ohio; and Bob Deyer, regional project manager for Sunrise Land Development Co., a leading real estate development firm in the United States.

Deyer will speak on how landscaping produces pride throughout residential and commercial developments. Jim Paluch, president of J.P. Horizons, Painesville, Ohio, will speak on attitude, goals, leadership and developing a sense of pride in landscaping.

This year's sponsors include Big Trees, Kurtz Bros. and Western Reserve Tractor.

For more information contact the Ohio Landscapers Association, 216/659-9755.

Natural Turf Replaces Artificial at Foxboro

Installation of a new heated, sand-based grass field in Foxboro Stadium, home of the New England Patriots Football team, is under way replacing the SuperTurf ar-

tificial surface which has been in place since 1984.

The new natural grass surface will be designed and installed by Randall & Blake Inc., Environmental Contractors of Littleton, Colo., the same firm which designed and constructed the Denver Bronco's new practice field in 1989 and the Liberty High School Football Field in Colorado Springs in 1990.

Snapper Consolidates Manufacturing Facilities

Snapper Power Equipment will consolidate manufacturing operations at three sites into its existing facility in McDonough, Ga.

The McDonough plant will be reorganized

SNAPPER

and expanded to accommodate production which is now conducted at a plant in Fort Worth, Texas, and a smaller facility in Beatrice, Neb.

The Beatrice plant will revert to a Kees' operation, and Snapper and F.D. Kees, formerly one company, will return to independent manufacturing. George Schaefer

Jr., product manager at Snapper will head Kees with his brother Mike.

Kees plans to introduce a new mower at the Outdoor Power Equipment Expo in July. Kees will also continue to supply products to Snapper.

Wight Nurseries Buys Weyerhaeuser Nursery

The senior management team at Wight Nurseries' recently completed the purchase of the nursery from the Weyerhaeuser Co.

The group includes Richard VanLandingham, Chip Culbreth, Bob Jones, Leslie Hudson, Gene Dyke, Jim Scoggins, Jerry Lee and Bob Szczepanski. John Wight and Stan Bulger will also contribute their knowledge and experience to the success of the new venture as outside investors.

Although Wight does not plan to take an active management role, he said, he's extremely pleased to see the nursery locally owned again.

Wight Nurseries was founded by members of the Wight family in 1887 and today has more than 650 acres in production in Cairo, Ga. The firm grows a complete line

(continued on page 13)

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News

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EPA Regulations Available in 2 Volumes

The federal government has split an important volume of Environmental Protection Agency regulations into separate parts. The first volume, Parts 190 through 259, contains regulations regarding radiation protection programs, noise abatement programs, ocean dumping and guidelines for land disposal of solid wastes.

The second volume, Parts 260 through 299, includes standards for owners and operators of hazardous waste treatment, storage and disposal facilities. It also covers EPA's Hazardous Waste Permit Program and standards for owners and operators of underground storage tanks.

A separate volume, EPA-90-1, covers the administration of the federal Clean Air Act and Clean Water Act.

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American Cyanamid Awards Supplier Rights to PBI/Gordon

PBI/Gordon Corp., Kansas City, Mo., is the exclusive supplier of EVENT® grass growth regulator.

The exclusivity stems from a recent agreement with American Cyanamid Co., Wayne, N.J., in which supplier rights were given to PBI/Gordon because of its prominence in the grass growth regulator market.

Three years of independent testing at North Carolina State University, Virginia Polytechnic Institute and Rutgers University are said to have proven EVENT effective. The product can be used alone or in combination with other labeled plant growth regulators.

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Customers can now save \$22 when purchasing a 2 1/2-gallon container of Roundup. The new suggested price of \$50 per gallon represents a 15 percent price reduction. Savings are based upon a comparison of 1990 and 1991 prices to distributors; savings may vary.

Toro Offers Design Program

The Toro Co. recently joined with LANDCADD in an agreement to market and distribute Irripro, an irrigation design program developed by LANDCADD. Toro will market and distribute the Irripro package through its distribution network.

Irripro features the capability to automatically handle sprinkler layout and automatic pipe sizing while locating them on the drawing. The program is based in AutoCAD and was designed exclusively for use with Toro equipment. User defined data files allow the user to incorporate all related equipment needed for irrigation systems as well.

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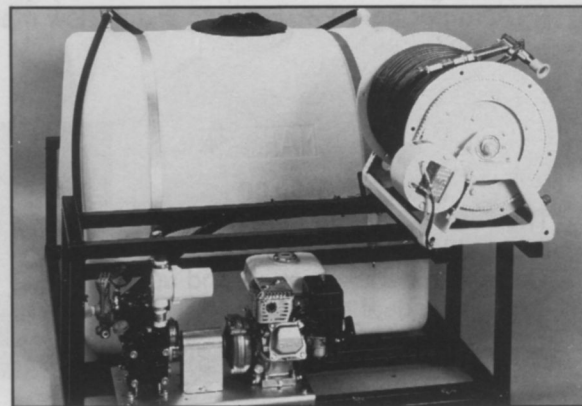
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Association News

The **Associated Landscape Contractors of America** and the **American Association of Nurserymen** have announced an agreement between the two trade groups that will see AAN providing legislative consulting services for ALCA.

Debra Dennis, ALCA's executive director, said the cooperative effort will not only benefit the associations, but the industry as a whole.

"First, it will save ALCA money," she said. "There's no sense in us re-inventing the wheel as far as legislative affairs go when AAN has an established program with many past accomplishments. Second, it will benefit the industry because we'll be presenting a unified front in Washington."

The joint effort couldn't have come at a better time. 1991 will be a busy year on Capitol Hill for issues concerning the green industry, said Ben Bolusky, AAN's government affairs director. Fourteen bills with possible industry ramifications were introduced.

One with the most potential for harming

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the industry is the mandated family medical leave bill passed by the Congress last year. It was later vetoed by President Bush. It would require providing 12 weeks of medical sick leave per employee each year.

On the brighter side, another bill was introduced that would require the EPA to consider the effects of any new regulations on small businesses.

"This is definitely a pro-small business piece of legislation," he said. "It's not saying EPA has to cut back on passing regula-

tions, but at least consider the economic impacts they could have on smaller businesses."

The joint effort will also bring both groups together for participation in AAN's legislative leadership conference scheduled for September.

The **New York State Turfgrass Association** elected officers and directors for 1991 at its annual meeting late last year. Stephen Smith, P.I.E. Supply Co. is serving as

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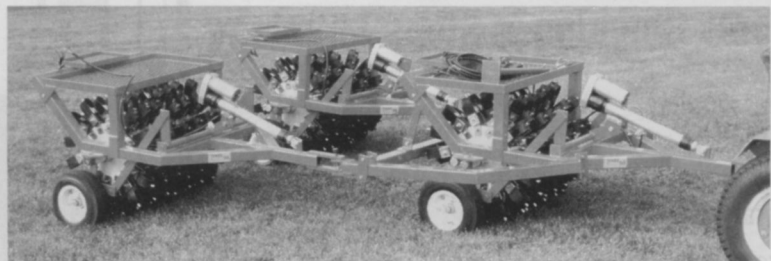
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president while Michael Maffei, Back O'Beyond, Brewster, is vice president and John Liburdi, Heritage Park, Loudonville, is treasurer. The elected directors include: Steve Griffin, Saratoga Sod Farm, Stillwater; Peter Hahn, Penfield Country Club, Penfield; Anthony Peca Jr., Batavia Turf Farms, Batavia; Tom Corell, J & L Adikes, Jamaica; John Fik, Park Ridge Hospital, Rochester; Fran Berdine, O.M. Scott & Sons, Pine Bush; Tom Strain, Vestal Hills Country Club, Binghamton; Karl Olson, National Golf Links, Southampton; and Peter Salinetti, Schuyler Meadows Club, Loudonville.

A newly revised Grounds Management Forms and Job Descriptions Guide is now available from the **Professional Grounds Management Society**. This expanded edition has six additional forms.

In addition to the new manual, PGMS still offers the Grounds Maintenance Estimating Guidelines, last revised in 1990. The Grounds Maintenance Management Guidelines will be available later this year, as will a new manual for entry-level training.

All four booklets are free to PGMS members and can be purchased by non-members for \$12. Send your order to the PGMS office.

The "Think Safety with Power Equipment in Your Hands" program from the **Outdoor Power Equipment Institute** focuses on educating the public about riding mower safety. According to the Consumer Product Safety Commission, more than 19,000 riding mower accidents occurred in 1988, many of which could have been prevented.

Dealers are being asked to join the safety campaign by relating safety steps to equipment buyers.

Operators mowing residential sites, parks or other public areas should pay particular attention to children. They rank as one of the highest safety concerns on residential mowing sites. Young children move quickly and are attracted to the mower.

Also, never assume children will remain where you last saw them. Be alert and turn the mower off if children enter the area. Use extra care when approaching corners, shrubs and trees.

The **Georgia Extension Service** recently completed the second in a series of employee training videos for landscape professionals.

Titled "Planting Procedures for Ornamental Plants," the video illustrates the proper handling techniques when loading or transporting plant materials from the

nursery to the job site. Step-by-step transplanting procedures for trees and shrubs are shown with an emphasis on site analysis before planting, proper soil preparation, plant spacing, plant depth and the importance of water and mulch.

The 16-minute, color VHS video comes with instructor's manual, discussion questions and a multiple choice exam. Cost of the video is \$24.95. The first video, "Grounds Equipment — Use, Safety and Field Maintenance," is also available.

The **Ohio Turfgrass Foundation** elected Joseph Motz as its president for 1991. He has served the organization since 1986 as a board member, vice president and president-elect.

The OTF has donated more than \$1 million to state turfgrass research since 1967.

The Ohio State University Agriculture Economics department recently compiled an in-depth survey of the turfgrass industry in Ohio. It found the industry generates \$1.1 billion annually.

Motz is also serving on the three-member Council of Agriculture on research, education and teaching that represents Ohio on a national level, and is an agricultural advisory council for state and land grant colleges.

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Irrigation News

Southwest Needs Water Management

Dennis Underwood, commissioner of the U.S. Bureau of Reclamation, recently discussed the increasing pressures for water management in the Southwest with attendees of the Desert Turfgrass/Landscape Conference at Bally's Casino Resort.

The U.S. Bureau of Reclamation, which serves as an agent of the Secretary of the Interior, operates the Colorado River from which a significant portion of water is supplied for the metropolitan areas of Las Vegas, Phoenix, Tucson, Los Angeles and San Diego.

Because the federal government doesn't actually own any Colorado River water, it has been apportioned to the seven Colorado River states and Mexico, the bureau serves in more of a managerial role than a regulatory role.

Increasing demand and finite water supplies were noted as the predominant factors leading to the scarcity of water in

these dry regions. The other factor was the realization that in many communities, more than half of the municipal and industrial water consumed is used for outdoor applications.

Underwood said that 60 percent of the Colorado River water transported into the Las Vegas Valley is used for external uses — landscaping, lawns and golf courses.

Statistics from the Las Vegas Valley Water District indicate that as much as one-half of that 60 percent is wasted by over-watering, runoff and system leakage.

Underwood discussed the concept of new project landscaping which produces desirable surroundings in desert areas without intensive water use. Once the projects become operative, careful maintenance can reduce waste.

"Both the water resource and the water user communities are going to need to become more creative in water management practices of the future," Underwood said. "As demand increases pressures will place an even higher value on innovation."

Liability Coverage Now Available for Designers

Design liability is now a part of the Irrigation Association's Business Insurance program, underwritten by the Fireman's Fund/FAMEX.

FAMEX design liability offers protection in an area where most insurance excludes coverage. This optional new coverage includes bodily injury and property damage coverage resulting from errors in the design of an irrigation system.

Eligibility for coverage requires evidence of passing the IA certification program for irrigation designers. Since 1977, the IA has endorsed this insurance program which includes commercial property, liability, auto, crime, business interruption, umbrella and worker's compensation.

For more information about the IA insurance program, and the new design liability coverage, contact the FAMEX Connection at 800/227-1700; in California 800/772-3381. ■

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Weed Control in the Environmental Age:

As turf management has become more sophisticated and environmentally significant, it has become absolutely essential for turf professionals to select a post-emergent herbicide that: • Has a broad enough spectrum to control virtually *all* problem weeds • Releases a minimum of active ingredients into the environment • Provides maximum safety to turf and adjacent trees and ornamentals • Reduces overall expenses (chemical *and* labor) to an absolute minimum. Read why only Trimec® Turf Herbicides can help you solve all of these problems.

Of course you know that herbicidal activity is influenced by temperature, weed species, state of growth, and type of turfgrass. So a herbicide that would be effective in taking hardened-off spurge out of bluegrass would be totally out of place for treating dollarweed in bermudagrass.

Indeed, in light of today's complex weed control problems, the one-size-

fits-all approach to herbicide selection has become totally obsolete.

As a matter of fact, in order to maximize the efficiency of weed control throughout the U.S.A., we have developed seven different Trimec Turf Herbicide formulations.

But even more important, we have developed a unique manufacturing process for each of these seven

formulations so that the acid components are reacted together to form a *Complex* of unified salt, thus assuring you that every Trimec Complex will always be dependable, time after time.

For a comprehensive explanation of how a Complex differs from a formulator tank mix — and why this difference is vital to you in coping with weed control problems today — we invite you to take a close look at the schematic diagrams on the opposite page, which were drawn up for us by one of the most prestigious university professors ever involved in ornamental turf.

Start the year right and early — with Trimec

Start early in the season with a broadcast treatment of Super Trimec any time when the temperature is above 40 degrees . . . even in weather with intermittent rain or snow.

This not only enables you to get those over-wintering annuals at a time when you might otherwise have a void in your work schedule, but it also enables you to get them before their roots have a chance to compete with the turfgrass you are trying to thicken up . . . and you get *all* the broadleaves because Super Trimec has the broadest spectrum of any post-emergent broadleaf herbicide.

Immaculate turf is more than cosmetic

. . . it is also friendly to the environment. It aids in the prevention of runoff, thus improving soil moisture retention; it helps to offset urban heat generated by pavement and buildings; it helps recycle auto emis-

sions into oxygen; it makes everybody feel better. I'm proud of the role Trimec plays in promoting weed-free turf.

Everett Mealman, President
PBI/Gordon Corporation



Increase your efficiency by selecting the right Trimec Complex for your specific weed control problems.

- Super Trimec:** Unparalleled broadleaf control for cool-weather broadcasting and spot treatment of hardened-off summer annuals such as spurge, oxalis and ground ivy. One gallon covers 4 acres.
- Trimec Classic:** Unmatched efficiency for controlling broadleaves when they are actively growing. One gallon covers 2½ acres.
- Trimec Plus:** The ultimate post-emergent herbicide. Outstanding control of crabgrass and nutsedge, plus all the broadleaves controlled by Classic Trimec.
- Trimec Southern:** Especially designed to control broadleaves in 2,4-D-sensitive southern grasses.
- Trimec 992:** The applicator's formula. Especially designed for tank mixing with liquid fertilizer and other multiple tank-mix combinations.
- Trimec Encore:** A Trimec Complex that contains no 2,4-D.
- Trimec Bentgrass Formula:** Especially designed for use on bentgrass.



No matter how tough your weed problems, you can depend on a Trimec Complex for a specific solution.

Furthermore, Super Trimec is not only extremely economical in terms of cost per acre, but it is also very friendly to the environment in that one gallon covers four acres.

If, however, you are unable to apply your first broadcast until later in the season — when the temperature is up around 75° and the weeds are actively growing — don't fret about the lost time. Simply apply the one-and-only original Classic Trimec. You'll get the same excellent weed control, and your cost per acre will be slightly less (which will help you justify not getting out earlier with Super Trimec).

Depending on the season and the

condition of your turf, you may or may not need another application of Classic to treat summer annuals.

If crabgrass, goosegrass or dallisgrass become a problem, even in spite of your pre-emerge precaution, don't worry. Trimec Plus will take them out — usually with one application — without discoloring your Kentucky bluegrass or bermuda grass. And, of course, Trimec Plus will also control any broadleaves that are present.

Certainly Trimec Plus is the ultimate post-emergent herbicide... we have never introduced a new product that has met with such universal approval.

Why only a Complex is right for weed control in ornamental turf:

Historically, the chemicals used to control weeds in ornamental turf were developed for use in agriculture, where 80% weed control is considered acceptable.

And while Trimec was specifically developed for ornamental turf, it was originally formulated by tank-mixing ag-grade 2,4-D; ag-grade MCP; and ag-grade Banvel® (dicamba).

Although the original Trimec immediately and dramatically improved weed control over that of any other herbicide, the tank-mixing procedure of ag-grade chemicals resulted in minute inconsistencies in the chemical composition of individual droplets, with consequent inconsistencies in weed control.

To eliminate these inconsistencies, we developed a technique of reacting the acid components of Trimec together to form a unified salt Complex in which every droplet of every production run would always be an exact mirror image of the total.

The manufacturing process involved in making a Trimec Complex is a trade secret, but the basic building block is known to all chemists. It is technical

dicamba (the active ingredient of Banvel) that triggers the synergistic activity and makes it chemically possible to react the acids into a Complex.

Of course, it is this same Banvel synergism that enables Trimec Complexes to be so effective with such a small amount of active ingredients... which in turn contributes to Trimec's unparalleled safety record, as demonstrated by the fact that more than 30 million acres of turfgrass have been treated with Trimec, and there has never been an instance in which damage to trees and ornamentals was proven to be the result of root absorption traced to Trimec when applied according to label directions.

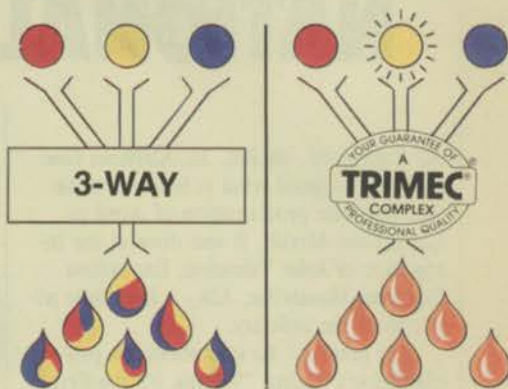
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Ag-grade 2,4-D	Ag-grade Banvel	Ag-grade MCP	Tech. 2,4-D acid	Tech. Banvel acid	Tech. MCP acid
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Color code: Red, 2,4-D; Yellow, Banvel; Blue, MCP; Amber, Complex acid. Note: Colors are for code only and do not in any way indicate the color of the product they are intended to identify.

Schematic drawings show the differences between a tank-mix and a Complex

These drawings indicate that, in a formulator's tank-mix (left), the molecules of 2,4-D, MCP, and dicamba do not combine to form a new molecule. Accordingly, each droplet will contain its own unique amount of one or more of the ag chemicals, and control may vary from droplet to droplet.

In a Complex (right), the three acids are reacted together to form a salt Complex. When this is formulated with the other important ingredients, wetting agents, dispersants and sequestrants, as well as with continuous analytical monitoring that includes the use of a high-pressure liquid chromatograph, the unique product that is Trimec becomes a reality. Every droplet is an exact mirror image of the total, and thus precisely optimizes the intended synergistic activity.

The differences between a tank-mix and a Complex become major when the goal is cosmetic excellence.

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Focus on Lawn Care

CROSS-COUNTRY EFFORT BOOSTS NATIONAL LAWN CARE MONTH

AT 8:45 A.M. on Jan. 31, Alabama Gov. Guy Hunt signed what is believed to be the first state proclamation of April as Lawn Care Month. It was done at the invitation of John Valentine, Exposition Gardens, Huntsville, Ala., a long-time advocate of the industry.

"I'm precise," he said about the proclamation's timing. "I think it's the first state proclamation that came into PLCAA this year."

But this was not his only brush with government in soliciting support for Lawn Care Month. He also visited Huntsville Mayor Steve Hettinger to have him proclaim April as Lawn Care month in the city. "We got good response from him — he's an environmental mayor," said Valentine.

He should know. He's on the city's Clean Community Committee, and Hettinger chose him as one of the town's "1,000 points of light" as an enhancer of civic beauty, "the only landscaper chosen," said Valentine. This honor was largely awarded to him for his role as a founder of the city/county Botanical Gardens.

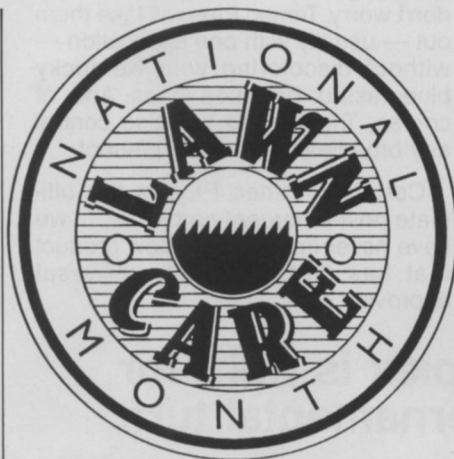
The 10-year-old gardens, built on donated land, encompasses both natural trails and formal gardens, while it boosts native flora and serves as a test area for local acceptability of such plants as fescue grasses. It recently added a welcome center.

Valentine has gone all out to promote Lawn Care Month in the state, contacting everyone from the extension service to 150 colleagues in the lawn maintenance industry to get behind the event.

And he's gotten the schools involved as well, every one from Bessemer State Technical College, which grants certification for lawn maintenance, to the elementary schools and junior highs, where volunteers will tell students about the ecological role of grasses.

So far, he's gotten three major public media to cover the event: A radio talk show will concentrate on grass recycling and invite listener questions. A television presentation, along similar lines, was put together with help from the state's Forestry Department.

But Valentine's clients were not forgot-



ten, either; Valentine found the PLCAA's logos and programs invaluable in direct mail communication with them.

"I'm impressed by how well PLCAA's has it together," said Valentine. "When I got all of their information, I wasn't sure how it would go over, but it has."

Another such lawn maintenance professional is John White, Ultra Lawn, Buffalo, N.Y. He's participating in Lawn Care Month, with articles in the paper and community activities that will help educate people about cultural practices that lead to a healthier lawn.

The articles, drawn up with help from a Rochester public relations firm, will include advice "from the pros to the homeowners, our competition," about efficient watering and mowing, grasscycling and composting, chemical use and storage. "We want them to look to the pros for help and advice," White said.

The Lawn Care Month media will also, of course, let people know which lawn care firms in the area are members of the New York State Lawn Care Association and whose professionalism can be trusted.

But this kind of educational activity derives from a long tradition of serving the community with his expertise. White has actually met with "the enemy," a group called Help Eliminate Lawn Pesticides. "I don't call them environmentalists, because we're environmentalists, too," White said.

The meetings were called so the two groups could learn to understand and

respect each other and contribute their own viewpoints in an attempt to learn to work together.

"We laughed and talked," he said. "We told them what we as professionals knew. And along with other members of the NYSLCA and the state Attorney General's office, we came up with professionally workable strategies to develop a natural method for treating lawns."

Other community activities that White and the local pros have been involved with: Establishing a phone number for the chemically sensitive (it took more than a year to get any response), develop a listing of these individuals for local lawn care companies to use, promoting PLCAA's "Don't Bag It" Campaign and teaching night school courses on how homeowners should handle, use and store lawn chemicals.

Meanwhile, up in rural Maine, the lawn maintenance industry is getting a boost from Michael Mills, Mills Landscape Nursery, Rumford.

He's setting up classroom visitations and field trips to his nursery to get the message to the younger crowd, running ads in the newspaper and placing radio spots. His biggest message: grasscycling.

But once again, this is only part of his service to the industry and his community. An ongoing project, deriving from his emphasis on grasscycling, is his sponsorship of a township composting and mulching area. He's providing the expertise, the city the property and liability.

West of Mills' Down East location, in Rooster Cogburn country, Dan Hill is also gearing up for a National Lawn Care Month. His company, Tri-Hill Lawn Care, based in Fort Smith, Ark., and Muskogee, Okla., caused "quite a stir" last year, the inaugural year of Lawn Care Month, by being the first operation to have its state governor, Arkansas' Bill Clinton, proclaim National Lawn Care Month.

This year, the firm's basic catchphrase is "Take care of the plants that take care of you," with further explanations that turf, with its cleansing activity, oxygen production and erosion control, is good for the environment. ■



January 4, 1991

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**COVER
STORY**

FACE TO FACE

For years, manufacturers and landscape contractors alike have been wondering where one another stood on a variety of issues. The waiting is over. A group of suppliers and end-users recently came together in Atlanta to discuss mutual territory in the evolving maintenance industry.

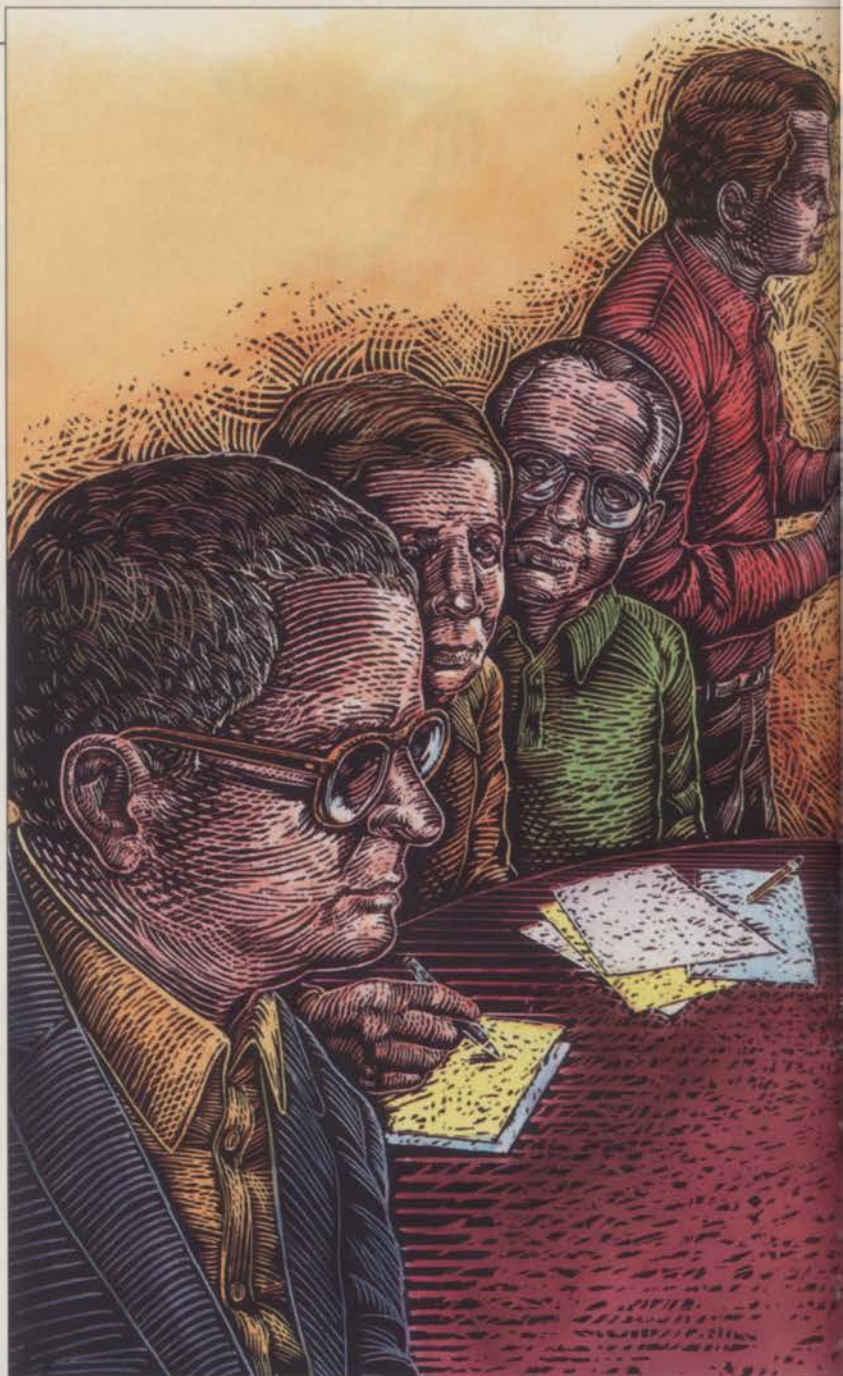
By Cindy Code

IT FELT LIKE the start of a new season on a crisp spring day. Thirteen green industry representatives — seven landscape contractors and six suppliers — assembled in the meeting room of an Atlanta hotel. All came prepared and eager to learn from one another.

After receiving their invitation from *Lawn & Landscape Maintenance* magazine to attend the industry's first such business roundtable, attendees arrived with well thought out ideas and questions, some of which had been brewing for more than a decade.

Which is precisely why the staff

“This is very timely getting the two most important elements in environmental management together.”



of LLM decided to bring together the suppliers and end-users in this evolving maintenance industry.

Since the golf market bounced back with a vengeance in the mid-1980s, manufacturers have focused a tremendous amount of their time on golf course equipment ingenuity. And they can't be faulted for that; it's a dynamic industry.

But for an industry whose equipment roots can be traced back to agriculture, the maintenance market is coming on strong and needs to be recognized as a legitimate concern.

Diligent in meeting the needs

of the golf and consumer markets, suppliers are now — and have been for several years — beginning to focus more internal development attention to the design of products specifically for the lawn maintenance market.

While not everyone at the roundtable was initially convinced of the strength of the commercial maintenance market, both suppliers and end-users agreed upfront that they didn't fully understand one another.

Moderated by industry consultant Phil Christian, the group followed its instincts — wherever they led. Among the issues: Why

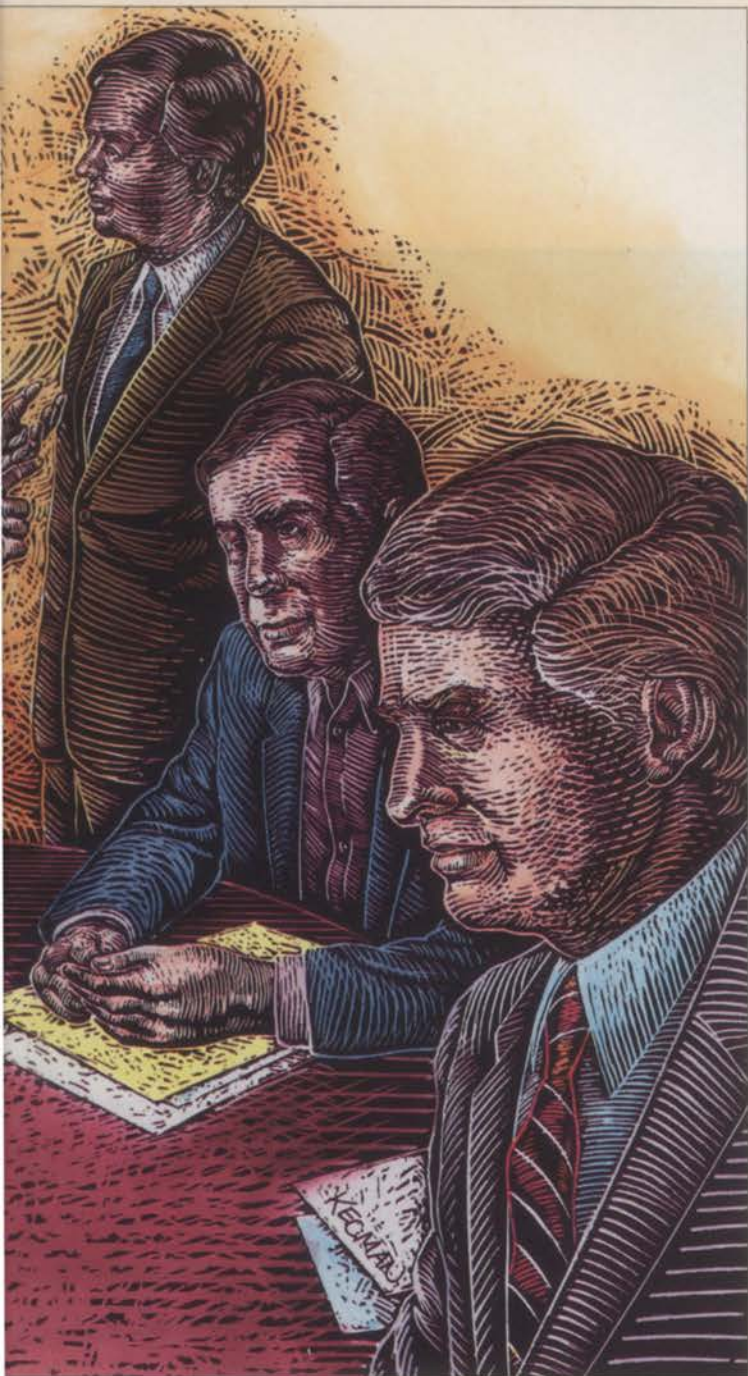


Illustration: Milan Kecman

can't manufacturers ensure similar pricing from dealer to dealer? Why don't suppliers warranty engines like they do their equipment? How could suppliers invest financial resources in a market which couldn't be defined? Who ultimately makes equipment buying decisions?

Not that such discussion always dominated. There were some lighthearted barbs about contractors as the demolition derby bunch, and quirks of equipment.

What it all boiled down to was that landscape contractors, some of whom said they feel like their market segment has been neg-

lected, are looking for more education on what equipment can or can't do, and dealers and/or distributors who offer more value added services.

Suppliers are still grappling with the size and logistics of the maintenance market, but seemed to leave the business roundtable with a keener sense of what maintenance contractors need to perform their jobs.

Those attending: Bruce Wilson, Environmental Care, Calabasas, Calif.; Arnie Sieg, The Bruce Company of Wisconsin, Racine, Wis.; Gerry Chauvin,

(continued on page 26)

WORKING INSIDE THE REALM OF DEALER/DISTRIBUTOR NETWORKS

AS MAINTENANCE contractors strive to improve training, employees' capabilities, production and equipment sophistication, as well as to increase income and growth, sooner or later the operator interfaces with the dealer or distributor who supplies the materials.

The end-user wants the dealer/distributor to provide a value added service, through either parts or equipment expertise, but he must first understand how the network works.

On the other hand, end-users must realize that, in many cases, dealers and distributors are independent businessmen.

"To be brutally honest, oftentimes they will be selling their customer what they have in inventory; what they have to sell," said Gregg KinKade, Ransomes America Corp.

Because of varying levels of customers in the commercial industry, a dealer/distributor might also be trying to sell an end-user something they might not need. For example, a dealer/distributor might be better off trying to supply an end-user with parts and product knowledge, rather than mechanical instruction, depending on the level of mechanical sophistication within the maintenance firm.

Many operators buy equipment because of the dealer/distributor they're dealing with as much as the product itself. That should convince manufacturers of the importance of carefully choosing who distributes their products and who represents them.

"You really have to look at what type of equipment you're talking about," said Wayne Whitehead, Jacobsen. "I think you can get into the bigger types of equipment and find a dealer who is going to give you the service stability you demand.

"When you get into the walk-behind market, it's highly competitive. The margins aren't there for the dealer to be competitive in certain situations and to offer you the services you need."

In certain areas, price is what drives the market. The commercial contractor is asking the dealer to perform a lot of service for a minimal amount of profit.

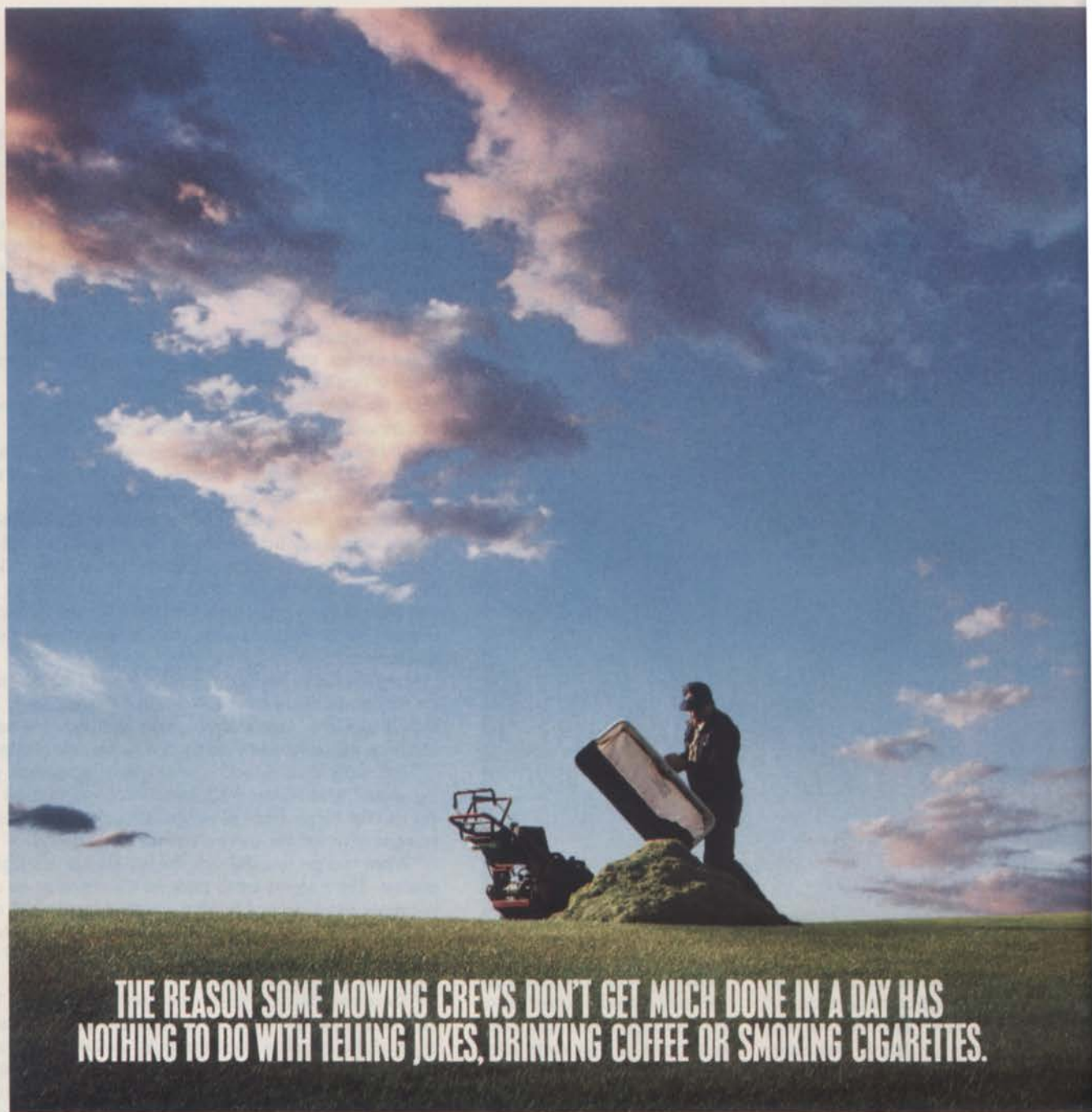
"There are some extremely good dealers out there. Their service reputations are fantastic and they are the ones who are going to get all the business when the kicks are down," he said. "But there are a lot of guys who drive around in a pickup truck and a trailer, and the majority of what's being sold in some of these markets is so price driven that it's below the cost to keep the doors open."

So while the end-user is looking for the best product at the best price, the dealer/distributor is trying to maintain a profitable business.

Walker Manufacturing gives their distributors exclusive marketing control. If there is a problem of any kind, Walker expects them to fix that problem.

"This may limit the sale of your equipment," Bob Walker said. "But we think in an incentive system, that is a sole distributor charged with a certain responsibility, they have a tremendous in-

(continued on page 33)



THE REASON SOME MOWING CREWS DON'T GET MUCH DONE IN A DAY HAS NOTHING TO DO WITH TELLING JOKES, DRINKING COFFEE OR SMOKING CIGARETTES.

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The way we see it, that's just time going to waste.

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The new 48" Toro Recycler deck.

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Face to Face

(continued from page 23)

Green Thumb Enterprises, Sterling, Va.; Mike Guthrie, Ground Control Landscaping, Orlando, Fla.; Tim Narr, Lied's Nursery, Sussex, Wis.; Pete Scholz, Reinhold & Vidosh, Pontiac, Mich.; Ed Babcock, The Brickman Group, Laurel, Md.; Bob Walker, Walker Manufacturing, Fort Collins, Colo.; Wayne Whitehead, Jacobsen, Racine, Wis.; Rick Cuddihe, Scag Power Equipment, Mayville, Wis.; George Schaefer Jr., Snapper-Kees, Beatrice, Neb.; Bill Lee, John Deere, Horicon, Wis.; and Gregg KinKade, Ransomes America Corp, Lincoln, Neb.

"This is very timely, getting the two most important elements in environmental management together when we're on the brink of changing the industry from a construction orientation to a service orientation and to have the important players on both sides willing to sit down and discuss the mutual territory," Christian said. "To me it's a very pleasing thought, and I appreciate the magazine being a catalyst for this event."

Good distributors and dealers who are geared to serve the commercial market understand what maintenance contractors do and take the time to understand equip-

ment for their geographical area.

"Just a few years ago we tested and found that only 20 percent of the commercial mowers were capable of climbing a six-inch curb without damaging the mower, the operator or the turf. Based on that research, we decided that only 20 percent of the mowers manufactured could be used in our industry," Christian said.

The landscape maintenance industry, however, is now a much more defined market than it used to be; a much better target for manufacturers.

FULL CIRCLE. First and foremost on the minds of the attendees was what most in the maintenance industry consider the leading issue: grass clipping disposal.

Nearly 20 years ago contractors were leaving clippings on the ground, but then a trend developed toward the collection of clippings, derived from aesthetics or a lack of consumer knowledge of what clippings can add to the soil profile. Now the trend is shifting back again.

"Being in Florida, I think we have an environment that is conducive to leaving the clippings,"

(continued on page 28)

Led by moderator Phil Christian, industry professionals held a frank discussion on volatile issues in the maintenance industry.



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Wayne Whitehead



Bob Walker



Mike Guthrie

Face to Face

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Guthrie said. "When we first started out, we were picking up all the clippings, but then a trend was started, believe it or not by the landscape architects in their specifications for maintenance, that promoted leaving the clippings due to what it put back into the soil profile."

At the same time, specifications were changed as to the frequency of cut, height of cut and what an acceptable amount of clippings was, he added.

Green Thumb, Sterling, Va., historically has collected its clippings, mainly because of the type of properties it maintains: high end residential condominium and townhouse complexes.

"These landscapes were designed with grass areas as well as high profile mulch beds. It was an aesthetic issue and to avoid the subsequent cleanup of mulch beds, we started collecting clippings," Chauvin said. "We compost the clippings we generate as well as edging from mulch beds and leaves in the fall. But it's becoming a nightmare because there is so much debris being generated."

In nearby Laurel, Md., Babcock said, his firm doesn't collect clippings as a rule. Clippings are collected only in high mulch areas and areas with lots of sidewalks, for instance.

"Because we don't collect, we do have to remove the excess clippings. So if we cut when the grass is too long or it's wet, then we have cleanup," Babcock said. "I think if there were any improvements to be made, it would be in the way the grass is discharged from the mower. It's easy to clean the grass off the sidewalks, but try to take it out of the mulch beds."

Bagging takes considerably more time than the alternative. A seven- or eight-day mowing cycle with bagging could be cut down to a five- or six-day mow-

ing schedule without bagging and still be ahead productionwise, according to Sieg.

But bagging clippings became a market area situation, somewhat hindered by available mowing equipment.

"In California, 20 years ago we didn't catch clippings, but it became important as perceived by the client to catch clippings and it just got to be a standard," Wilson said. "And then, in my mind, the mower manufacturing changed somewhat. The smaller ones did a better job of catching clippings than spreading them, and it just fostered that whole scenario."

Leaving clippings behind certainly eliminates a lot of problems for the maintenance contractor, but convincing the property owner or manager to let the clip-

Turf growth regulators may provide an option for reducing clippings.

pings remain is easier said than done.

"It's going to take more than just us doing it ourselves to get the message across," Scholz said. "I think it needs to come from universities, colleges, master gardeners on TV and everybody else. We need to really push it and try to educate people that it's good to leave the clippings on the ground."

But there are those who disagree.

"I really think the education approach is being overplayed," Walker said. "The economics of the situation is where it's at. When

(continued on page 30)

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Face to Face

(continued from page 28)

people's pocketbooks are affected, our customers are affected. When you get right down to it, what's really going to cause people to change is when they have to pay more or less for the service that's being provided."

"Let's face it, we're all ultimately consumers and we're influenced a lot by what that market has to offer," Whitehead said. "In the Milwaukee market this year, I saw some consumer advertising with no ad for vacuum mowers. There weren't any bags either. So that's the start of doing away with grass pickup."

Collecting clippings and getting rid of them amounts to 20 percent or 30 percent of production budgets. And if the industry is to increase productivity in 1991, alternative solutions have to be found.

"We are evaluating using more reel mowers," Wilson said. "In terms of getting a good finished look without collecting clippings, we find that clients are much

more pleased with the look of the reel mower than they are with the big rotary mowers. They like the patterns that you can get with it."

"We're looking at increasing our mowing height, but we're

also going to do some experimenting with turf growth regulators to see if we can reduce some of our clippings," Narr said.

Others see the growth regulator as at least a part of the solution to the management of horticultural clippings or wastes.

Experiences the industry has had with growth regulators has been off and on. Many have used them in areas where color was not particularly important, but have found that growth regulators can't be used back to back, day in and day out without some cycling of the application.

"I think we'd like to think it would be a long-term solution and hope that chemical manufacturers think that way too and are working on it. I have to assume they



Gregg KinKade



George Schaefer

are," Sieg said. "I think it would be Utopia if something like that would come out, something that would retain good color and vigor in the grass and it wouldn't grow quite so fast. I don't think we've seen it yet."

Reinhold & Vidosh has used plant growth regulators in quite a few areas, but mostly on slopes and in ditches — labor intensive mowing areas, according to Scholz.

"It's going to take care of the grasses, but the weeds and everything else are unsightly," he said.

Last year, the firm sprayed growth regulators on 90 acres at the General Motors Proving Grounds in Milford, Mich.

"We introduced it to them and sold them on it as a cost savings

factor and it worked well. We put two applications down and practically eliminated all the mowing in that area," he said.

To the firm's benefit, that was an area that GM had their own people mowing. They were subsequently able to take that money and put it into Reinhold & Vidosh's budget, Scholz said.

MOWER TECHNOLOGY. Over and above the clipping issue, manufacturers are making some sophisticated equipment available to commercial mowing contractors. Yet, it's still a walk-behind industry for the most part.

"The reason we use walk-behinds is because they're easy to operate, they're inexpensive and we know how to repair them and can repair them on a timely basis," Babcock said. "The parts are available and we have always felt that the more complicated the piece of machinery, the more potential problems."

Sieg, on the other hand, said his firm uses a lot of riding mowers.

(continued on page 32)

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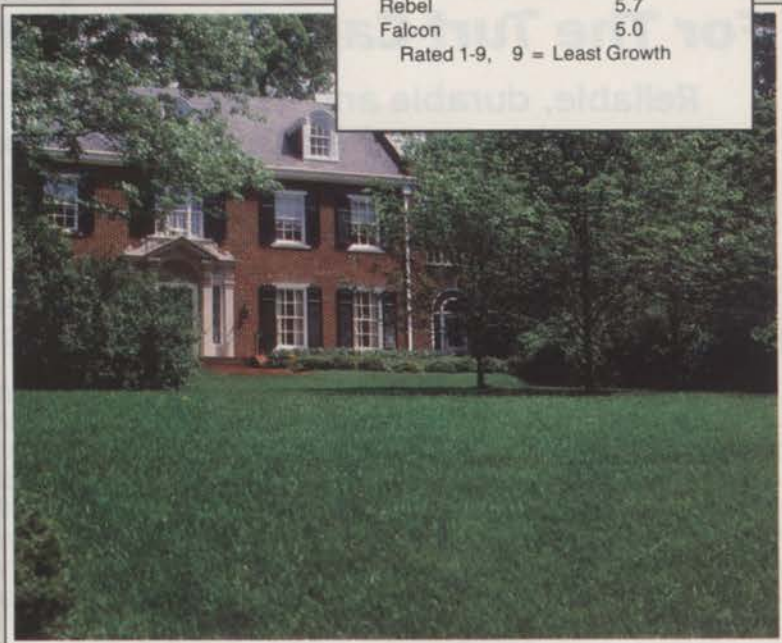
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"Our attitude has been that we will go on the property with the biggest mower we possibly can that will result in a nice looking cut," he said. "We want to cover more ground everyday without adding more people."

Still others are unsure what they'll save if they switch from walk-behinds to riders.

"I think our industry is yearning for factual information on what it really costs to operate those particular pieces of equipment," Wilson said. "We've done some studies recently and found in our hourly costs — the cost of hours we operate the bigger equipment vs. the hours we operate the walk-behinds — we spent less per hour of operation in maintenance of the bigger equipment; the hours of shop time and hours of cost of parts."

That really shocked us, because we thought it was the other way around. I think the reason it appears that way is because the repairs you make to the bigger

mowers are usually more expensive each time you do it. Accumulatively there aren't as many units to repair."

The walk-behind is said to be limited from a production point of view and contractors can only walk so fast all day long. But newer technology is showing that blade tip speed can be increased and weight variable speed drives are beginning to go faster than 2.3 miles per hour. But will it seriously increase productivity?

"I really think there is a top ground speed that you can reach and you shouldn't go any faster than that for safety reasons," Babcock said. "It would scare the hell out of people, especially in homeowners' associations. They are scared to death of big, fast mowers."

And productivity is, after all, relative.

"It depends on what you think," Whitehead said. "These guys (here) are more concerned with the quality of cut, but we have people out there who are more concerned with how many jobs they can get done in a day. Those are



Ed Babcock



Rick Cuddihe



Tim Narr

the ones who tend to go a little faster than they should."

But perception is reality.

"Sometimes they don't even want to see riding mowers in front of their townhouse. Sometimes, they don't even want to see walk-behinds, they want 21-inch push mowers," Chauvin said.

Controlling speeds might not be a bad idea. It was suggested that some of the less durably built midsize riding equipment be furnished with governors to hold mower speed down, and keep operators from going too fast and tearing up the machines.

"They hold that speed at a manageable level. You don't lose that much production, but it really extends the life of the equipment," Wilson said. "I think that

the manufacturers really need to start to work more with the contractors in helping them understand the limitations and the ideal conditions which their equipment is designed to operate under."

But it's hard to promise a variable range in which the mower can only run so fast. What might work in Florida won't work at all in Wisconsin.

Nevertheless, manufacturers are continually being asked to put more power in equipment.

Everyone is horsepower conscious. You're in competition to give more power and speed, whether you want to or not," Cuddihe said. "The quality of the end product is going to help regulate that. We continually hear, 'How

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Arnie Sieg



Bruce Wilson



Pete Scholz

fast will you cut? and we try to describe how fast, and then we're susceptible to one of our competitors putting something out that cuts a little bit faster."

EDUCATION VEHICLES. If contractors are looking for more equipment information and suppliers have the knowledge to pass along, what's the best method for bringing these two entities together?

"We've done a very good job once a year putting on product updates and sales seminars for superintendents. We've carried that one step further this year and are educating the distributors of the commercial product line as well," Whitehead said.

"For a long time you weren't

an important part of the consumer based industry which is where most of this product is sold. Now, more and more you're becoming more of a factor in their grosses for the year, so the quest for knowledge on their part has become greater and we as manufacturers are answering that need," Whitehead said.

The industry's changing so fast, contractors need to be more technically oriented as the equipment becomes more sophisticated. "I think you'll find most of your better distributors are bringing their customers in at least once a year for these seminars," he added.

Videos were suggested as a new way of presenting the information to the contractor at a faster, less expensive pace.

"Part of it is historical response," KinKade said. "There's a new emphasis here because you really are becoming a primary target, a primary prospect where five, six years ago we didn't even

know who you really were. It's an evolutionary type of thing." —

The author is Editor of Lawn & Landscape Maintenance magazine.

Networks

(continued from page 23)

centive to make it work. They are a co-worker, so to speak, in getting that product out to market."

The supplier needs to keep in touch with the end-user, because that person, rather than the dealer/distributor, is the one who's going to define how commercial equipment should be made, said Rick Cuddihe, Scag Power Equipment.

"We as manufacturers want to increase the level of knowledge and understanding of the commercial user," Cuddihe said. "We think that up until very recently, only about 10 percent of the dealers in the country were heavily into commercial equipment, but now this is rapidly changing. There's a lot of work to do, but

there's a lot of potential.

It all goes back to the understanding of the commercial market. If the business is more consumer oriented, the dealer/distributor doesn't want to fool around with a lower volume business. Some sell one product line by contract.

And it's really not just a price issue. The driving force for commercial contractors is getting a piece of equipment when he wants it. How a dealer/distributor distributes it and stocks parts goes a long way in selling to the end-user.

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MULCHING MOWER PERFORMANCE: HOW DO THEY RATE?

Lawn maintenance professionals may not be in agreement over the performance of mulching mowers, but most are aware of the potential benefits of such products.

By Sandy Moretz

DECREASING LANDFILL space combined with a national emphasis on recycling has helped push mulching mowers into the industry limelight. The result: Lawn and landscape maintenance professionals are finding themselves faced with an increasing number of mulching and shredding products.

James Heinz, landscape maintenance supervisor of the University of Minnesota's Minneapolis campus, said the purchase of a mulching mower last summer has

to a truck and hauling them away.

"It's much more feasible to leave it on the ground," he said. "I would say we save probably one-third to one-half of the cost by leaving it, than it would be to collect it."

The savings, he explained, is especially noticeable in the fall when his Midwest campus is littered with leaves. "It's absolutely great to mulch them," he said. "To collect them...the volume alone would kill you."

According to Heinz, the mulcher has enabled his department to "work smarter, not harder." He also is aware of a mulcher's environmental benefits: Returning nutrients to the lawn as well as keeping horticultural wastes out of stressed landfills.

"The environmental issues are definitely important, as well as the cost savings," Heinz said. "I think they both go hand in hand."

The concept of mulching mowers is sound, but not all lawn and landscape maintenance professionals agree on their performance. Some, such as Tom DeSantis, office manager of DeSantis Landscapes Inc., Salem, Ore., argue that their use is not feasible during the heavy growth seasons; additional mowings would have to be added.

"It would increase the cost to the customer by a great deal, and be a scheduling nightmare," DeSantis said.

The increased costs associated with mulching rather than collecting clippings is also a concern to Bob Walker, president, Walker Manufacturing, Fort Collins, Colo.

"There are limits to how much customers will want to pay all in the name of recycling, especially when, from an economic point of view, there are other alternatives," he said.

One of those alternatives: Composting. "We're not dealing with just grass clippings," Walker pointed out. "You have brush, woody products and leaves. In many areas, these are as much of a problem as grass clippings. "We think the industry will move in the direction of off-site composting operations. It's environmentally sound and economically feasible," Walker added.

Others say the machines do not work well in wet grass; the clippings and increased moisture are captured under the mowers' decks and are dispersed in clumps.

"We're not about to try anything like that unless we have to," DeSantis said. "We like to keep our customers' yards looking sharp."

DeSantis' sentiments on mulching mowers are echoed by Ronnie Oliver, president of Environmental Landscaping Inc., Greenwood, S.C.

"I've never seen one that was any good, or that did a good job under normal circumstances," Oliver said. All mowers perform well if the grass is cut "two or three times a week," he added.

Lawn maintenance professionals may not be in agreement over the performance of mulching mowers, but most are aware of the potential benefits of such products. Even Oliver is keeping a close watch on the market.

"I'd rather not have to vacuum (clippings)," he acknowledged. "If there was a good one, I'd be willing to try it."

Ironically, it has been the relatively recent national concern about depleting landfills—a portion of which has been attributed to lawn and landscape debris—that has turned the term "mulch-

Clipping return vs. bagging clippings is a personal preference.

saved his department time and money.

Mulching creates less work, Heinz said. It has cut down on raking and/or bagging grass clippings and leaves, loading them on-



ing mowers" into an industry buzzword, even though it has been common knowledge that clippings can actually be good for a lawn.

"I've told people for years that clipping return vs. bagging clippings is a personal preference of aesthetics," said John Street, associate professor of agronomy at The Ohio State University, Columbus.

"The agronomic benefits of returning the clippings to the lawn is that you're returning a significant amount of nutrients to the soil," Street explained.

He also said that the belief that clippings contribute to thatch build-up is a misconception.

In general, clipping return in all situations, even in warm-season grasses, would not be a significant contributor to thatch accumulation," he said.

NOT A NEW INVENTION. Mulching mowers are not new to the

marketplace. Bolens, Port Washington, Wis., has manufactured mulching mowers for homeowner use since the 1960s, said Chuck Hoffman, vice president of manufacturing. There's no denying, however, that interest in the mowers has soared recently.

"This past year, the market share for mulching mowers has dramatically increased," Hoffman said. "We think the ecology/environmental issue is strong and will continue. This is not a short-term issue."

In the commercial lawn and landscape maintenance arena, Excel Industries Inc., introduced its mulching mower, the Turbo Shredder, two years ago. Ken Raney, advertising manager for the Hesston, Kan., manufacturer, said the company had been working on the mower for three to four years, "before the environmental issue came up and before the landfill problem" was so recognized.

"It's forcing us to realize we can't continue to be a throwaway society."

The company's initial concern: "Anyone who handles clippings adds 50 percent to the time it takes to do the job," Raney explained. "Plus, we knew from studies that clippings were better for grass than hauling them off."

According to Raney, the Turbo Shredder works through the use of eight additional blades, shaped like ripple potato chips, which recut the grass three or four times.

"Theoretically, nothing larger than one-half-inch long should come out," he said. "The tiny clippings then fall down to the soil surface where they break down."

Mulching mowers have their limits, however. Because of the sheer volume of the grass during heavy growth periods, "there's probably nothing in the world that's going to keep you from having to haul something off," Raney admitted. Bagging may also be necessary in the spring, when the grass is sticky, and in the fall when the ground is covered heavily in leaves.

INDUSTRY OPTIONS. Deere & Co.'s commercial mulching mowers are marketed under the Tricycler name. Bob Tracinski, division manager, media relations for the Moline, Ill., manufacturer, explained that the Tricycler was designed to adapt to seasonal lawn needs.

When grass grows quickly, the Tricycler can be equipped with a plug, which closes off the mower chamber, and a mulching blade. The plug forces the grass clippings to remain inside the mower

deck long enough to be chopped into tiny pieces.

The mulching blade, designed with reverse baffles, then blows the grass into the lawn.

In the summer, the plug can be removed to allow for the attaching of a side-discharge chute. The chute works with the mulching blade, forcing clippings out the side. In the fall, a rear-mounted collection system can be added to gather chopped leaves into a bag.

This year The Toro Co., Minneapolis, Minn., introduced its Recycler mower. According to Jim Wallace, marketing manager for professional products, the Recycler system consists of a special blade, kickers that are installed under the deck and the deck design itself.

"The blade is designed to stand the grass up, cut it off smoothly and then it cuts and recuts the clippings as they bounce up and down from the blade to the kickers and down to the blade."

After being cut three to four times, the clippings are forced by the kickers' air flow down beneath the surface of the grass. Toro's Recycler models can be converted to a bagging mower: Remove the plug in the mowing chute and add the bag.

Other mulching products on the market:

Lawn-Boy Inc., Plymouth, Wis., lists a mulching plate as one of its accessories for all four of its commercial walk-behinds; the plates fit 1991 and previous years' models. The company's mowers also offer side discharging or bagging options.

Lawn-Boy mulching products differ from others on the market in that it's an option. "It provides greater flexibility," said Chris Beckord, commercial products sales manager.

Jacobsen, Racine, Wis., manufacturers Fine-Cut Flail mowers, a type of mulching product, which clips grass several times and disperses it evenly over the width of the mower. It differs from other manufacturers' products in that it is not a rotary mower.

Scag Power Equipment is test-

Some contractors say they save one-third to one-half the cost of mowing by leaving the clippings on the ground.



ing products for release into the mulching mower and shredding market, said Rick Cuddihe, national sales manager of the Mayville, Wis., manufacturer, but details are not yet available.

WAIT AND SEE. Not all manufacturers have jumped on the mulching mower bandwagon. "We're not convinced that a mulching mower is a practical answer to (the landfill/recycling) issue, that it will perform in a practical way," Walker said. "We're going to take more of a wait-and-see attitude as to whether mulching mowers will really fit into this commercial mowing industry."

Walker's concerns:

- Customers' expectations of quality. "We think as people pay to have a job done, they don't care whether a mulching mower is used or not, but they do care what the end result of what a job looks like," Walker said.

- The limited use of mulching mowers because of varying grass conditions across the country. "In many places in the country when you have the spring growth there



is a lot of juice in the grass and it's tender," Walker said. Such conditions, he added, make it difficult for a mulching mower to perform.

"There's no doubt that mulching mowers will work," Walker

said. "The question is, how often and how much of the time will they work in a particular area?"

Mulching mowers may not have wide acceptance in the lawn and landscape maintenance field, but there is little disagreement that

Professionals are being forced to turn their attention to the recycling of grass clippings.

the landfill issue is not going away and has to be addressed.

"The old days of throwing clippings into bags and throwing them into a pile just doesn't cut it anymore," said Bruce Greer, grounds manager for the Landscape Maintenance Div. of Hillenmeyer Nurseries, Lexington, Ky.

As a result, professionals in the field will be forced to give more attention to the concept of mulching, recycling and composting, along with other potential answers.

"It's like a lot of things in this society, we're forced to do it for our own good," said Richard Helwink, shop superintendent for the San Jose branch of Environmental Care Inc. "It's finally forcing us to realize that we can't continue to be a throwaway society.

"We have to do it," Helwink added. "We don't have a choice."

The author is a free-lance writer based in Mt. Pleasant, S.C.

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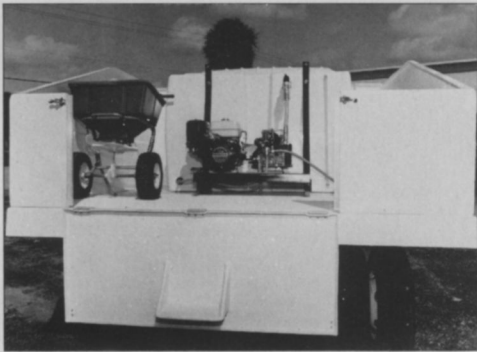
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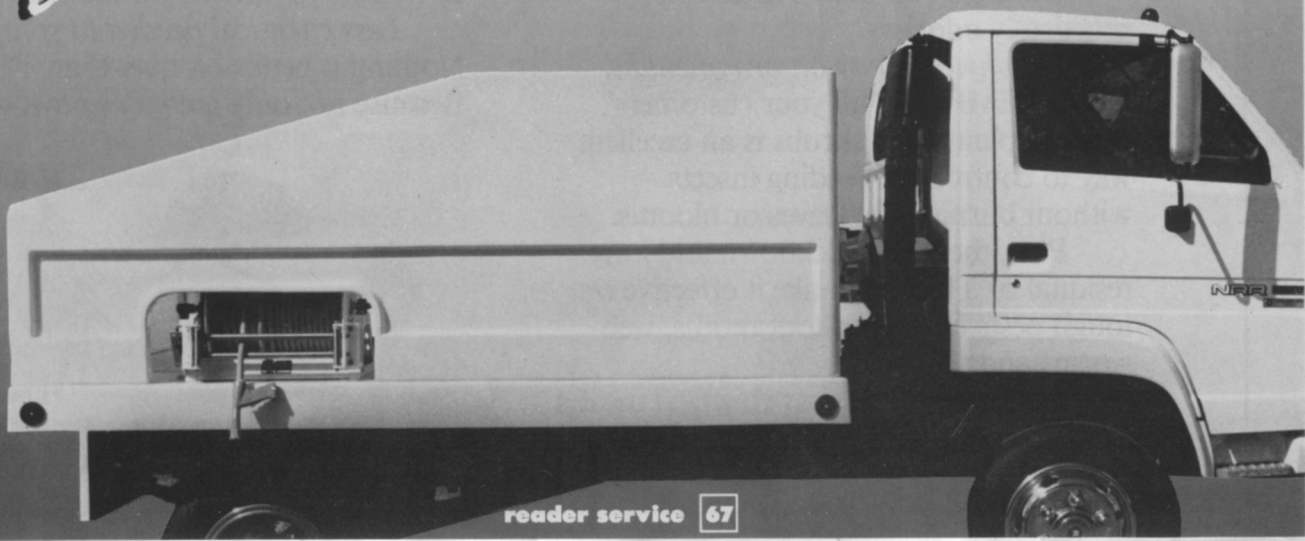
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CASHING IN ON COMPOST

As horticultural wastes come under increased scrutiny, clients and municipalities will be looking to knowledgeable, progressive landscapers to help them with disposal. By providing either a home composting service or a disposal service, professional landscapers can increase the total number of services they offer.

By Rod Tyler

FOR CENTURIES, successful farmers have been using all types of animal manures to amend their soils. In turn, the amended soils produce healthier, more abundant crops. They have learned through this practice that organic matter plays a vital role in creating the most favorable habitat for plant growth.

Even this previously well-accepted practice, however, is receiving major attention from activists who believe land application of manures and other organic wastes may be contaminating ground water supplies in nearby urban areas.

Composting of manures is an option that many feel will help solve this dilemma. In urban areas, other parts of the waste stream such as paper, food waste, sludges and yard waste have also been deemed compostable.

By composting these separated waste products, the urban areas save valuable landfill space and develop a good finished compost which, when used like farm manure, can have excellent amending qualities for soils.

LEGISLATION. Addressing this issue, many state lawmakers have passed legislation that mandates removal of yard waste from landfills. City governments are re-

quired to eliminate the flow of organic yard debris to landfills by Dec. 31, 1993 in many cases.

All residents within individual municipalities are targeted to assist in implementation of these new laws.

Programs are already under way that provide separate collection and alternative disposal methods for yard waste. Bagged grass clippings are set next to household wastes at curbside; ready for pickup are woody materials that are bundled according to individual city regulations.

Leaves are usually collected with a vacuum truck or a separate leaf truck. Once collected, the debris is dumped locally at com-

posting facilities that recycle the materials into a usable end product. This separate collection method of yard waste takes little effort to implement in municipal recycling programs compared to other commingled materials.

The landscape industry will also be affected by this new law as a result of the amount of wastes generated through normal business operations.

Currently, there are a couple of options for proper handling of these wastes. Drop off locations are generally widely available for acceptance of landscape debris, and charge reasonable tipping fees which are well below landfill tipping fees.

For instance, Kurtz Bros. Inc., Valley View, Ohio, recently developed a program involving six drop off locations throughout northern Ohio. The materials are transported daily to area compost facilities where they are correctly processed.

Roll-off containers for large landscape projects are also available and provide the landscape contractor an easy way to remove wastes from a job site. These containers are available in 20-, 30- or 40-yard sizes and are best used when grass clippings are avoided. Because grass is notorious for rapid decomposition and putrescent odor, it's recommended that the container program be used mainly for woody wastes.

An option to the convenient drop off system is to process and compost the material yourself. In the current draft of the EPA regulations, five classes of compost facilities exist.

The commercial compost facility mentioned earlier is a Class III facility which is more than three acres in size and requires permits to install and operate. A compost facility at a landscaper's main office may be classified as a Class IV facility which, if it is

STANDARD TESTS & ACCEPTABLE RANGES FOR CLASS I COMPOST

- P = Pathogen Free — time and temperature tests minimum 55 degrees Celsius for three days; pathogens destroyed by intense heat over time
- H = Heavy Metals — more potential concern with sludge and MSW composts Cadmium less than 12.5 ppm, lead less than 500 ppm, Ca:Zn less than .015
- O = Organic Content — percent of organic matter should be consistent with source ranges from 30 percent to 75 percent depending on source
- I = Inert Contaminants — glass, metal, plastic, etc. ideally should be 0 future standards may allow up to 5 percent for MSW composts
- M = Maturity — compost should be stable O₂ uptake tests, plant assays immature composts draw valuable nitrogen from soil for further breakdown of carbon
- S = Soluble Salt Index — safety may depend on compost application rate ideally less than 1 to 2 mmhos (conductivity test) acceptable ranges of 1 to 5 mmhos if used at recommended application rates

Table 1.



under three acres, requires registration with the state EPA instead of permits to install and operate.

The fees for permits, site development and operational costs can range from \$15,000 to \$30,000 per acre per year. Commercial compost facilities can only be justified by large inflows of raw materials.

Yard waste takes up 20 percent of landfill space. Through composting, these wastes shrink from eight parts of raw material to one part finished product. With composting programs under way, it is obvious that a large volume of finished compost will be available in the marketplace by the mid-1990s.

COMPOSTING TRENDS. But this is only the beginning. Due to the beneficial properties of the composting process such as volume

reduction, pathogen destruction and usefulness of the end product, several other waste streams are now being composted.

Composting trends for municipal solid wastes (garbage), animal wastes and sewage sludges are all projected to increase in the next few years. Along with composted yard wastes, these various waste streams will provide an abundance of useful materials in the marketplace.

Composted products may affect landscapers and other green industry professionals more than originally conceived. The proper use of good, high quality composts can easily add products and services to a green industry business.

Knowing what to look for, however, in a finished product is just as important as proper application and incorporation on the job

site. Although there may be limited data available for an across-the-board comparison of every type of compost produced, there are some specific tests which finished compost must pass based on state rules and regulations.

KNOW WHAT YOU'RE GETTING.

Standard tests conducted at compost production facilities help ensure that the compost is ready for sale. The letters P.H.O.I.M.S. stand for six individual tests that are regularly administered. (Table 1)

The tests represent an acceptable range for judging material before purchasing it. Ohio, for instance, already has Class I, Class II and Class III compost standards based on the state's rules for sludge composting. These are product standards only and are not

Compost benefits newly seeded turf areas. Illustration: Joel Rogers.

related to the Class I to VI Compost Facility Classification System.

It's imperative that recommended application instructions from the supplier be followed closely as rates may vary. For instance, TechnaGro compost produced at the Akron Composting Facility in Akron, Ohio, is recommended at an application rate of 1 inch when applied to existing soils and tilled to a depth of 5 inches.

To calculate the amount of compost needed for a project, determine the total square feet in the area and refer to company specifications for the appropriate amount of product to add.

While TechnaGro is only one

example of a compost available today, composts from other area sources have similar application rates. However, it is possible to have large differences in organic matter content between different types of composts.

For instance, TechnaGro has approximately 50 percent organic matter while ordinary leaf humus averages about 40 percent organic matter. The higher the organic matter, the higher the soil conditioning properties of the compost.

Some of the current research with yard waste composts at The Ohio State University in Wooster, Ohio, reveals a higher organic matter content due to higher percentages of woody material being included in the final product. As long as the finished product is fully matured, the additional organic matter will be beneficial for amending soils.

The average weight of most compost is approximately 1,000 pounds per cubic yard. However, for materials similar to leaf humus that are stored outside year-round, the weight may vary greatly due to precipitation.

PROPOSED OHIO STANDARDS FOR COMPOST* FROM SEWAGE SLUDGE

	Class I	Class II	Class III
Use restrictions:	None	No use of food chain crops	No use without prior EPA approval
Maximum concentration limits (mg/kg dry wt.):			
Cadmium	12.5	25	greater than 25
Lead	500	1,000	greater than 1,000
Cadmium: Zinc Ratio	less than 0.015	less than 0.015	less than 0.015

*Ohio EPA Administrative Policy on "Composted Sewage Sludge Management"

Table 2.

LANDSCAPE APPLICATIONS. Applications for composts are numerous in the landscape industry. Flower beds properly amended with one inch of compost appear to produce healthier plants. Newly seeded turf areas that are established with the use of one inch of compost seem to germinate faster and have better drought tolerance due to moisture retention properties in the compost.

Applying ½ inch of screened compost to existing turf immediately following aeration helps relieve compaction, decreases thatch and improves drought tolerance. In nursery applications,

compost is used in place of green manure crops to add organic matter and micronutrients to the soil.

By applying these resources to soil, micronutrients and organic materials lost through years of normal plant growth are replenished. Clay hardpans are broken up with the addition of compost, and sandy soils gain moisture retention value. Applying compost at a one inch level every one to three years is an excellent maintenance practice for almost any soil. At the same time, it helps to complete the loop of recycling of a valuable resource.

In the future, many customers

will be looking to knowledgeable, progressive landscapers to help them with their own yard wastes. By providing either a home composting service or a disposal service, professional landscapers can increase service offerings.

In addition to these services, when compost is mature, it can be used again to broaden the scope of products provided. Turf top-dressing and flower bed amending programs are becoming more popular. ■

The author is in charge of the compost program at Kurtz Bros. Inc., Valley View, Ohio.

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TURNING HORTICULTURAL WASTES INTO VIABLE BYPRODUCTS

Chipper/shredder manufacturers face an interested, but somewhat skeptical commercial market when it comes to sales. However, the trend is changing as valuable landfill space is becoming off limits to horticultural wastes.

By Mark Elliot

EACH YEAR, the Bruce Co., a full service landscape management firm and nursery based in Middleton, Wis., generates 3,000 to 5,000 cubic yards of landscape debris. That amounts to hundreds of shipments to landfills that cost thousands of dollars in tipping fees.

With tipping fees swelling and landfills limiting the wastes they will accept, the Bruce Co. saw its costs escalating for debris removal — even with the help of a chipper which cuts wood and heavy brush into 1½ inch pieces.

This winter, the company invested in a piece of equipment designed to reduce its volume of yard waste. The firm bought an industrial grinder from Jamestown, N.D.-based Haybuster International. The grinder, with its 10-foot wide hopper, chops up to 150 cubic yards of debris per hour, more than five times the amount the chipper can process in the same period of time.

To break up the debris with the firm's chipper, the grass and leaves had to be sorted from wood material, lest they jam the wheel.

The grinder, besides reducing the amount of yard waste, has provided another benefit. By grinding the debris into powder (of coarseness that can be adjusted

by various size screens), it provides a usable byproduct: mulch.

This presents another cost savings as the company generally purchases 8,000 to 10,000 cubic yards of shredded bark for mulch applications on woody ornamental plants on its customers' properties.

With the grinder, the company can either compost the debris or use it to make mulch. "We have to learn more about the composting process," said Arnie Sieg, vice president. He expects they will use one of the larger screens and make most of the woody debris into mulch.

Sieg thinks the bark mulch bill will be cut by one-fifth. Much of the mulch will not be generated from the company's own yard waste, but it has received inquiries from municipalities interested in having them process their debris.

The Bruce Co. will also consider composting some of the debris for potting soil for its nursery operation. Sieg said soil tests will have to be done to determine nutrient content and pH balance.

BUDDING INTEREST. The Bruce Co., with its \$60,000 investment in an industrial grinder, does not typify the lengths most landscape contractors will go to dispose of

waste more economically, and at the same time generate a usable byproduct. It does, however, illustrate the industry's growing interest in recycling yard wastes.

The shortage of landfill capacity has prompted most states to add restrictions to the types of wastes landfills will accept. Robin Pendergast, spokesman for Tornado Products, said 33 states have mandated landfill restrictions for yard wastes in the last two years.

Stanton Gill, an extension specialist in central Maryland, has been encouraging the green industry to get more involved in composting and recycling yard waste. In regions where landfills accept grass clippings and have \$15 per ton tipping fees, landscapers have little incentive to compost and recycle, Gill acknowledges. But tipping fees in his region are as high as \$50 and are slated to climb as high as \$90 in the next two years.

"Larger landscape companies in urban areas are going to be more likely to take this up because of the cost," he said. He noted the incentive is also there to process waste for sale as mulch; the state EPA is composting yard waste and selling it to landscapers and nurseries for \$6 per cubic yard for resale to consumers.

How economical is on-site composting of yard waste for landscapers?

Gill offers the example of one company that rented a grinder for \$2,100 for a week. In that week, the company processed 500 cubic yards of yard waste into 400 cubic yards of usable compost that would have cost \$8,000 to purchase. The company would have had to pay \$30,000 in tipping fees to dispose of the original waste.

Total cost incurred for disposing the 100 cubic yards of unusable waste, renting the grinder and adjusting the compost pH was \$10,300. By subtracting the \$8,000 the company would have paid for the usable compost from the \$10,000 total cost, the company incurred a total cost of \$2,300 for the entire operation.

Dan Skinner, president of Landscape Services Inc., a full-service firm in Ft. Wayne, Ind., sees still another use for composted yard waste — an alternative heating system. Skinner plans to run irrigation tubes from his compost to his greenhouse. The water, heated by the compost, will help heat the greenhouse. Skinner thinks the system could trim his \$400 monthly heating bill by 30 percent to 50 percent.

Skinner also mixes composted





The Mighty Bandit II from Bandit Industries (left) and the Troy-Bilt chipper/shredder (below) are two common ways of reducing debris.



grass clippings with manure to make humus for flower beds and lawns. The humus makes a more lush lawn that needs less watering. "That's a real selling tool for us," he said.

TESTING THE WATERS. The dilemma facing the Edmund Hayden Landscaping Contractors of Woodstock, Ill., is typical. Standard landfills will no longer accept grass clippings. Composting takes more space than the company, which generates 50 to 70 cubic yards per month, has at its disposal. The company has experimented with mulching mowers without much success.

"It's such a new law that we're kind of feeling our way through," said John Cortell, maintenance director. Edmund Hayden's response is more typical of how most companies are responding than either The Bruce Co. or Landscape Services.

The company invested \$12,000 in a Vermeer chipper which can chop branches up to 9 inches in diameter. The chipper reduces 40 cubic yards of waste to five cubic yards, but the grass and leaf clippings still have to be hauled to a landfill.

"There is a good likelihood in the near future that we will have

The Industrial Grinder from Haybuster (below) was recently introduced to the landscape industry.



to look into that (composting and recycling)" because of new landfill regulations, said Tim Naar, landscape manager at the Sussex, Wis., branch of Lied's Nursery. The company presently mulches its grass clippings which it uses for mulch in its nursery.

Naar uses a Brush Bandit chipper that can chop branches up to 8 inches in diameter. Most of the chips are used for mulch on customers' properties.

Paul Hartnagel, a landscape maintenance contractor in Castleton, N.Y., found partial success with a consumer chipper/shred-

der. The 5-h.p. unit saved significant time only on those jobs that would have required an unusual amount of debris loading and hauling. "As dump sites become less available, I will go back to it," he said.

For jobs with a lot of tree cutting, Hartnagel has to rent a more powerful chipper.

Mulching deck mowers won't reduce clippings for compost as economically as some would like. Rich Grigalus, branch manager for Ruppert Landscape's Prince George's County, Md., operation, said the debris must be mowed

two or three times, then raked, before it can be composted.

However, Grigalus recently worked for another landscape company that found a chipper/shredder handy for cutting up yard waste. One to two cubic yards of debris could be loaded at a time with a diesel-powered loader. In one week, 250 cubic yards of organic waste was produced. This was used mostly as a soil amendment on small planting jobs.

Grigalus estimates a landscape company can reuse up to 10 percent of its yard waste, meaning most still has to be hauled to a landfill. This is still an attractive proposition, he said, since that 10 percent doesn't have to be bought and picked up.

Investing in a chipper/shredder that eliminates the sorting process is nevertheless a tough financial decision at Ruppert. "It's not anything we would be likely to do ourselves at this time," Grigalus said.

CHIPPER/SHREDDER USE. A handful of chipper/shredder manufacturers hope they have an answer. A chipper/shredder, as the

name implies, consists of two functions, a chipper and a shredder. Sorting larger branches from leaves and grass clippings is not necessary, unlike with a chipper.

The chipper consists of a hopper that takes the larger branches which are chopped up by blades mounted on a rotating wheel. The shredder contains hammers or flails that beat the softer debris into mulch.

Both gas-powered and electric models are available, gas-powered being more common.

Chipper/shredders have been sold to consumers for years, but generally weren't viewed as tough enough for commercial work.

Now, with the new emphasis on recycling yard wastes, some manufacturers are introducing models with increased horsepower for commercial use. Manufacturers peg 8-h.p. as the commercial power level; less than 8-h.p. is not deemed powerful enough for commercial use.

Jerry Morey, marketing manager at Bandit Industries, points out the importance of the automatic feed system for landscapers. Many of the smaller branch capacity units contain no automatic feed, he said. The automatic feed enables the operator to stop and unclog the system. The hydraulic disc systems, introduced in the early 1980s, are presently 85 percent of the market, he said. They are smaller, quieter and safer, he said.

"It's nice to have both chipper and shredder capacity," said Ross Johnson, marketing manager at Crary Co. Last year, the company added commercial units to its line of chipper/shredders. "We saw there was an opportunity for a better chipper/shredder," he said.

Crary's commercial models range in price from \$1,500 to \$5,000, offering different sized engines, including power takeoff. Johnson said operators should look at ease of use, ease of maneuverability, quickness in chipping and shredding and durability.

The Crary units are serrated, self-sharpening, heat treated, free swinging blades that shred, as opposed to models that use free swinging hammers, Johnson said.

"By shredding it up, you are composting that refuse down to easily manageable material," he said. Johnson further encourages operators to consider the ability to offer their customers mulching



Demand for commercial strength models is increasing.

services. "He (the customer) can't buy a fertilizer better than a compost," he said.

Johnson said he has no idea how many commercial users are buying the new units. Like most manufacturers, the company sells through power equipment distributors.

Echo Inc., based in Lake Zurich, Ill., is marketing a line of commercial chipper/shredders made by Crary under its own brand name. Tom Boscher, market development manager, suspects many commercial users will start with 5-h.p. units and will find they are too small.

The 8-h.p. Tomahawk model from Garden Way Inc., the Troy, N.Y.-based maker of the Troy-Bilt line, will cut branches up to eight inches in diameter.

The different sized screens can make 3/4-, 1/2- and 3/8-inch chips. The shredder has 16 swinging flails and turns at 3,600 rpms, which is faster than most available models. The chipper's fly wheel also turns at 3,600 rpms. The self-contained unit weighs 200 pounds and can be transported via van or pickup truck.

The Tomahawk was originally made by the W.W. Grinder Co., which Garden Way bought in 1985 and proceeded to upgrade the unit.

Response by commercial users has been good, according to Ned Van Woert, senior vice president of strategic planning and marketing at Garden Way. In one store,

he said three quarters of the customers have been commercial users. The company is presently looking at ways of strengthening its presence in the commercial market.

Kwik-Way, based in Sioux Falls, S.D., hopes to add a shredder attachment to its line of chippers by July, according to Roger Molsted, president. The company has been selling chippers for the last year and a half in response to landscaper's recycling concerns, he said. Leaves, however, would gum up the chipper.

Kwik-Way's chippers offer automatic feed. A heavy round bar attached to the front of the chipping wheel pulls the branch into the cutting wheel, which contains two knives. The three-point unit that must be hitched to a 10- to 25-h.p. trailer or pickup costs \$1,310. A self-contained model, including speed increase, speed decrease, power feed and power takeoff, costs \$4,259.

Rachel Reichman, vice president of sales at Brooklyn, N.Y.-based Sterling Industries, said the company introduced commercial chipper/shredders in 1990 in response to requests from its distributors. The commercial model costs \$1,500 and has manual feed.

Dana Davis, marketing coordinator for BCA America Inc. Mathews, N.C., said her company plans to introduce a self-contained chipper with 5- and 8-h.p., of which the former will be suited for consumers and the latter for

landscapers.

The company presently makes a chipper/shredder tractor attachment which, she said, has not drawn a lot of interest from landscape contractors.

Park Ford, Pa.-based MacKisic Inc., a manufacturer of consumer lawn care products, recently introduced The Brute, a self-contained, semi-commercial unit that shreds branches of up to 5 inches in diameter. "We're not unhappy (with response), but it hasn't blown the doors off," said George Juergens, president.

Tornado Products, based in Germantown, Wis., planned to introduce four chipper/shredders to the commercial market at the Rental Show in Dallas in February. There will be 12- and 16-h.p. 20-inch units and 20- and 24-h.p. 24-inch units. The 24-h.p. unit will be able to chop up to 5-inch diameter branches.

Tornado, like the other manufacturers, is responding to demand from distributors. "We see a demand," said president Herb Baker. The commercial models will be heavier than the three-year-old company's consumer unit. The new units will cost between \$3,000 and \$6,000.

Roto-Hoe Inc., based in Newbury, Ohio, offers chipper/shredders running 5- to 11-h.p., and ranging in price from \$600 to \$2,000. Rich Maguire, national sales manager, said he has no reading on growth in commercial use.

Duerr Inc., based in Spokane, Wash., recently introduced a pair of 8-h.p. chipper/shredders designed to meet the needs of the commercial user. The Duerr units are different from others in that they do not rely on screens to control the size of the processed debris.

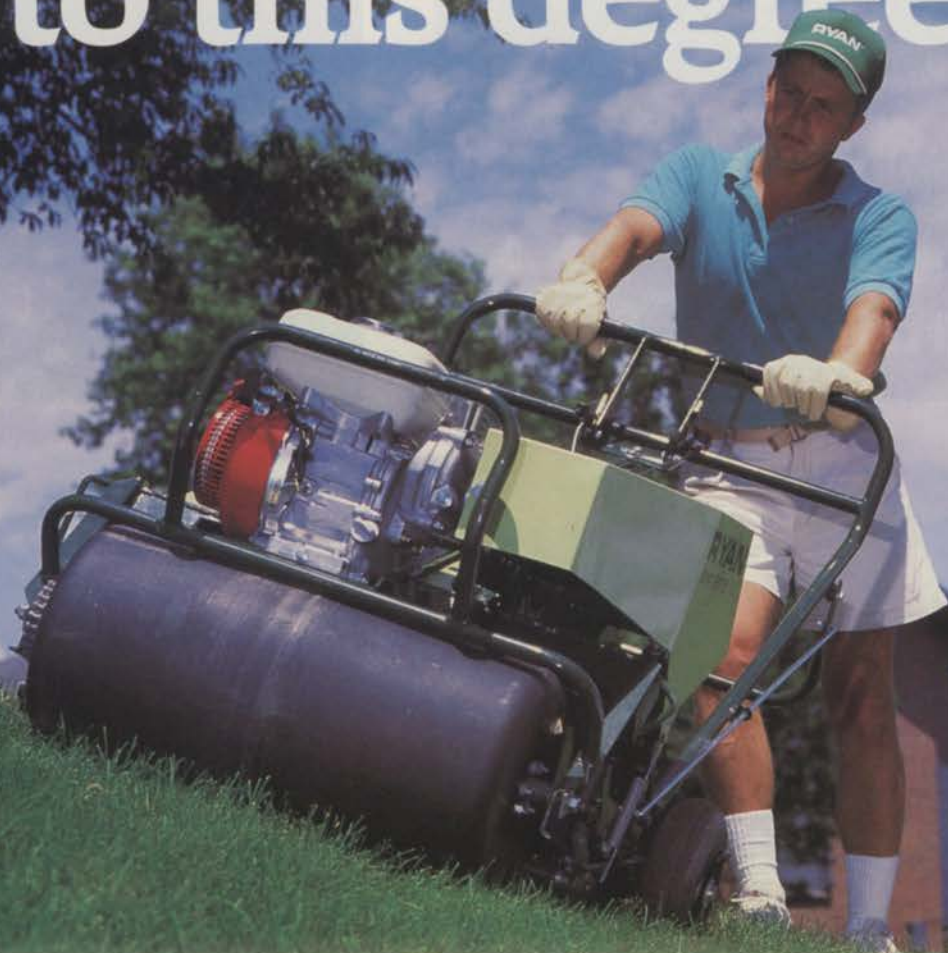
Instead, a fan draws the debris into the shredder chute, where it comes into contact with 12 shredder chisels. Once the debris reaches the correct weight, the fan blows it out the opening.

Dennis Duerr, company president, said that the screens used by other machines tend to get clogged.

The Duerr units come with two different engines. Suggested retail price for the standard size engine is \$1,295 while the industrial/commercial engine is \$1,695. The

(continued on page 94)

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JUGGLING SERVICE ROUTES

Everyone agrees that efficiency stems from good route management, but the methods for achieving success varies from computer usage to personality match ups.

By Mark Ward

JOE KUCIK used to think small lawn care companies were those with 200 or 300 customers. But with today's tough regulatory and insurance climates, he said, "the threshold for survival is becoming about 800 customers. That means firms must pay closer attention to efficient delivery of services."

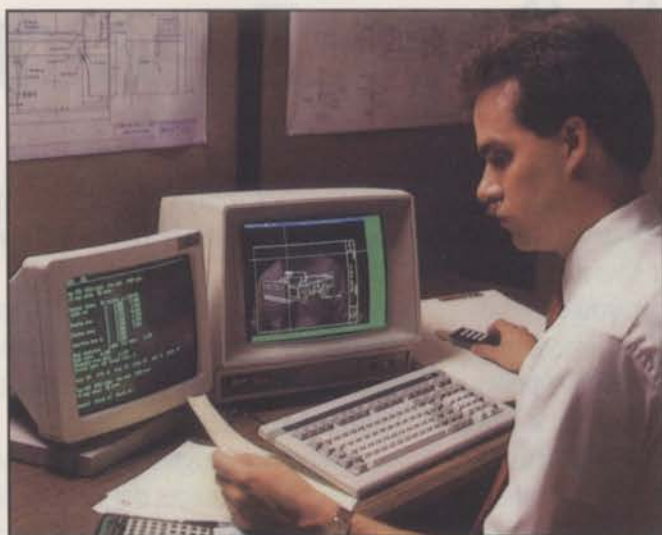
Seven years ago, Kucik and his brother Paul founded Real Green Professional Services, Walled Lake, Mich. The firm grew so quickly, he said, "within 10 weeks I was so bogged down sorting out drivers' routes, I had no time for the marketing and sales we needed to keep expanding."

The key to efficient delivery, Kucik saw, was effective route management. Real Green's solution was to automate routing decisions by developing its own computer software programs—a system Kucik spun off in 1986 as Real Green Computers. The latter firm now serves 300 users nationwide.

"Before we computerized our route management, We needed two clerks to shuffle all the paper," recalled vice president Denny Linnell, LawnLife Corp., a Salt Lake City residential lawn maintenance firm. Through inefficiency, he said, non-paying customers could receive service because invoice documents were still in the paper flow as daily routing decisions were made.

LawnLife's computerized route management system has boosted efficiency, customer satisfaction and profits.

"Clients are happier when your routing system ensures applications are properly spaced, and technicians are aware of any



Computers play an important role in route management.

needs by the customers they're servicing each day," he said.

Bob Andrews, president of The Greenskeepers Inc., Carmel, Ind., also uses computers to give crews as much information as possible. When he hands route drivers their assignments, customer data can include each lawn's disease history, if prenotification of chemical applications is desired and if the homeowner has a dog, wants

gates kept locked or mows grass on certain days.

"Gasoline costs a lot these days," Andrews pointed out, "but good route management can reduce the number of service callbacks, and keep crews from backtracking as they drive their routes each day."

Effective route management is also important for firms serving commercial accounts, according

to Chris Davitt, vice president of operations at Ruppert Landscape Co., Ashton, Md. Though its three branch offices don't use computers, he explained, the company stresses clear planning and decision making.

"Field personnel need some leeway in deciding when to hit the customers on their routes," Davitt advised, "but a good route management system builds in accountability. Somebody's got to make sure each job is serviced correctly, or you'll miss something and start pointing fingers at each other."

RESIDENTIAL ROUTING. At LawnLife, routes are determined by the law of averages. One technician handles each route and over a five-day week should cover an average of 100,000 to 125,000 square feet per day. At that production level, the company is able to cover its costs.

"That's our daily goal for each technician. But special considerations on each route may slow you down or speed up production," Linnell explained. "So when we say 100,000 to 125,000 square feet per day, in practice it becomes more of a company-wide average."

For example, in neighborhoods where homes are close together and sit on standardized lots, LawnLife technicians can cover square footage more quickly. On the other hand, routes in outlying districts may require additional driving time from the office, reducing technicians' daily productivity.

To make assignments equitable, Linnell might compensate techni-



icians who serve distant areas by including on their routes several streets with closely bunched houses. "It's important our staff feel their routes are equitable since our philosophy is to keep individual technicians in the same geographic area year after year," he said.

Continuity between technicians and customers is Linnell's most basic criteria in setting routes. As technicians stay with individual accounts, over time they build a rapport and get to know each customer's needs. Through such familiarity, client satisfaction is increased while service and productivity improve.

Based upon zip codes, LawnLife technicians are assigned "zones" of roughly equal geographic size. Decisions are aided by computers which calculate the number of customers and square footage per zone. By visiting each customer once during an eight-week "round," technicians should achieve the desired productivity of 100,000 to 125,000 square feet per day.

"We like to cycle lawn care applications six weeks apart," said

Linnell. "By basing our routes on eight-week rounds, that builds in two weeks of leeway. Then we can work in service calls, vehicle and equipment repairs, bad weather or certain areas experiencing disease or insect infestations."

While performing the year's first round, LawnLife technicians are given a designated number of lawns each week to service. The order in which customers are served is up to the individual technician, however, when the first eight-week round is completed, technicians must duplicate that order of service in each subsequent round.

In essence, the first round determines a technician's rounds for the rest of the year. "Since employees have three to four more rounds," Linnell said, "that gives them an incentive to construct tight runs the very first time. Then by locking the order in which customers are served, we assure applications are spaced at proper intervals."

Each day technicians are given a list of service calls and sales estimates that have been requested

and must be worked into their runs. Weekly route sheets are computer generated and contain all customer information — payment history, previous service calls, last application date, whether prenotification is desired and more.

As customers are added or dropped throughout the year, LawnLife tracks the growth in each zone. During the winter off-season, routes are reconfigured into zones which a single technician can reasonably handle.

LawnLife formerly served its commercial customers with separate routes. Although these jobs are still administered by the firm's commercial department, service is now handled by setting aside days in which residential technicians can be grouped at a site and work performed in a single visit. This way, Linnell can work commercial accounts into normal routes.

Specialized services such as aeration and tree and shrub care are handled by a separate division.

For The Greenskeepers, the first step in managing routes was

Individual customer data is often entered into computer generated invoices, letting the technician know their needs.

to find a central location. When Andrews established the firm in 1977 to serve the greater Indianapolis area, he deliberately chose a site that is "pretty much smack dab in the middle of our territory."

Housing patterns in Indianapolis also simplify route management. Laid out in typical Midwest style, the metropolitan area can be neatly sectioned off by its residential subdivisions. Working a five-day week, Andrews has six technicians and six trucks providing lawn care to 900 customers.

Routes are broken down by streets and computers generate daily service sheets for each technician. When listing customers to visit each day, Andrews aims to properly space lawn care applications, match technicians with customers they have served before, work in service calls without backtracking or special trips, allow sufficient leeway for bad

(continued on page 54)

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Service Routes

(continued from page 51)

weather and cover 150,000 to 160,000 square feet per route.

"The square footage is very loosely enforced," said Andrews, "because we don't want to pressure technicians into meeting some quota. We tell them to always put quality first and allow for whatever flexibility they need."

Andrews normally restricts residential service to weekdays, handling commercial customers on Saturdays. Because The Greenskeepers has a limited number of commercial accounts, many Saturdays remain open to use as rain dates when needed.

Sales estimates and specialized services are handled by a separate department. For aeration, dethatching and tree and shrub care, Andrews brings in seasonal employees who perform work with their own routes.

COMMERCIAL CONCERNS. Because his firm serves commercial accounts, Davitt of Ruppert Land-

"Matching a job supervisor's skills to the project at hand is always a key factor in deciding routes."

scaping has a different approach to route management.

"We don't serve a large number of smaller accounts, but a small number of larger accounts," he said. "For us, routing is a matter of getting each crew out to only one or two customers per day."

To serve its 200 clients, Ruppert operates three offices strategically located in the Baltimore/Washington area. Thus Davitt explained "geography is less important than matching the right field foreman to the right job."

Davitt's first criterion is to keep a supervisor on the same account whenever possible. Often a customer may award the company a new project, perhaps when a developer builds a new office park. In that case, Davitt assigns the job to the same supervisor unless the

work is too far from the original branch office.

"Matching a job supervisor's skills to the project at hand is always a key factor in deciding routes," Davitt said. "One supervisor might be good at managing people, so I send him to suburban jobs that require lots of turf management and bigger crews. Another supervisor might be very meticulous and ideal for downtown pruning jobs where smaller crews are best."

Ruppert Landscaping has not computerized its route management because "machines can't take into account supervisors' personalities," according to Davitt. Instead, routing is a consensus decision between the firm's eight geographic area managers who each oversee four field su-

perisors.

"Given the nature of our operation, routing isn't that big of a job," Davitt added. "We only serve commercial clients, so our business depends upon repeat customers. With 90 percent to 95 percent of our volume coming from repeats, routes don't change drastically from one year to the next."

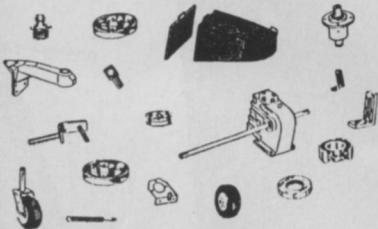
Routes are revised at the beginning of each calendar year, and generally call for weekly visits to clients. Crews at Ruppert Landscaping work four 10-hour days each week, leaving a fifth day open for rain dates — which happens frequently in the Baltimore/Washington region during spring.

Deciding the number of customers on each route begins by estimating the number of hours required per visit. Davitt maintains crews of various sizes, "so on a 40-hour week a six-man crew could handle accounts totaling 240 hours."

Ruppert Landscaping once performed specialized services — such as landscape or irrigation in

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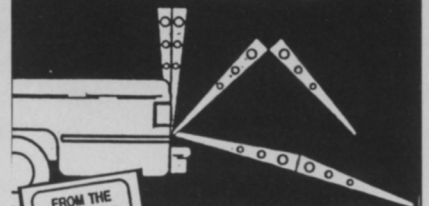


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IS TURF BEING SCAPEGOATED?

With the resurgence of interest in water conservation, heightened by potential drought, municipalities in almost all arid areas are passing regulations restricting turf installation.

By Curt Harler

PEOPLE DO strange things. New Yorkers move to warm, sunny Florida, then demand a fireplace in their new home.

Ohioans move to hot, dry Arizona, and still expect a verdant lawn and lots of shade trees.

State and city regulators are clamping down on the latter area. In some cases they are proposing strict regulations on the amount and kind of landscaping allowed. In others, the guidelines are voluntary.

Colorado, Arizona, California and Florida are among the leaders in setting standards for landscaping which are more in tune with the local climate.

Most of the propositions, laws and regulations to date are of the local variety making tracking difficult and the task of organizing lobbying groups frustrating.

One of the larger urban groups is the Arizona Municipal Water Users Association. Headquartered in Phoenix, it was estab-

lished by nine cities to coordinate water policy.

Phoenix, Mesa, Glendale, Tempe, Scottsdale, Chandler, Goodyear, Peoria and Gilbert are exploring possibilities for water legislation, water conservation and coordinated water resource management planning. AMWUA kicked off in 1982 and has been working with the Arizona Department of Water Resources and the Salt River Project since then.

Xeriscape is the focus of much

of AMWUA's work, and xeriscape was endorsed by the group in December 1986.

Several ordinances have been passed. One prohibits the use of potable water in artificial lakes and turf-related facilities. It also requires low-water-use plants on rights-of-way and highway medians.

Chandler has an ordinance requiring low-water-use plants for their section line tree program and city-maintained rights-of-way. It

DENVER: WORKING TO CHANGE ATTITUDES

CONSERVATION WORKS, but convincing people is a slow process.

Denver is trying to make fundamental changes in peoples' habits. So far, they have attained a 7 percent sustained level of water savings over the past 10 years. But, Denver sees itself in a long-term, 20-year effort. The idea is not to mandate change, but to change attitudes.

The City of Denver has pushed its education programs for about 10 years, going so far as to buy paid radio advertising to promote water saving ideas.

Denver, the birthplace of xeriscape, is trying to build public interest in keeping a lush lawn or garden with less water use through seminars, a TV series and advertising.

"We encourage the use of turf-type tall fescue for our urban audience as an alternative to Kentucky bluegrass," said Denver Water Department spokesperson Kathy Richardson.

In the foothills area, they can consider buffalograss. "But," she admits, "it lacks the green color and the texture of bluegrass."

Denver also offers two ideas for design.

The first is using Mexican privet as a wall and evergreen thyme as the floor, with Russian sage in a gray-green and silver composition.

This plant group will open up winter views and allow winter sun

to warm windows, walls and paving. It will be especially attractive with houses of warm red brick, slate blue or dark colors.

Dark green foliage and bright, intense flowers are good accents. This group of plants can form the backbone of a gray summer garden or a wildflower meadow.

A second idea is to use hackberry trees to form columns and roofs, with currant shrubs or miscanthus grass dividing rooms.

In the fall, the red currant leaves will contrast well with the golden hackberry foliage, tan grass and blue sky.

As a setting for early spring flowers, and for late summer mums and sunflowers, this plant group is especially good. The tan clumps of miscanthus grass will light up winter gardens. The hackberries and currants are valuable wildlife plants.

Of course, plant recommendations vary by state, region and area within the region. The U.S. Department of Agriculture, the Cooperative Extension Service, landscape architects and local nursery owners can recommend plantings appropriate for any given area.

AMWUA's education program for both private citizens and landscapers includes five points: a Water Awareness Week, the turf irrigation program, a xeriscape program, its conservation research program and the coordinated water conservation program.

also recommends water conserving plantings.

In February 1990, Chandler adopted a new ordinance that reduces the amount of water-use landscaping in new multi-family, commercial and industrial developments.

Phoenix limits water at turf facilities over 10 acres and limits use of large water features like fountains and waterfalls.

Peoria has a law which will go into effect this year that limits turf in commercial areas to 40 percent and requires use of low-water-use plant materials.

Scottsdale limits turf at model homes to 10 percent of the first 9,000 square feet of the lot and 5 percent of the area beyond the first 9,000 feet.

Many of these communities also regulate the amount of water that can be flushed in toilets and the flow rate of sink faucets.

Aurora, Colo., has gone further. That municipality controls how many square feet of turf area can be planted. Aurora also has a permit system to be sure soil is properly prepared for planting.

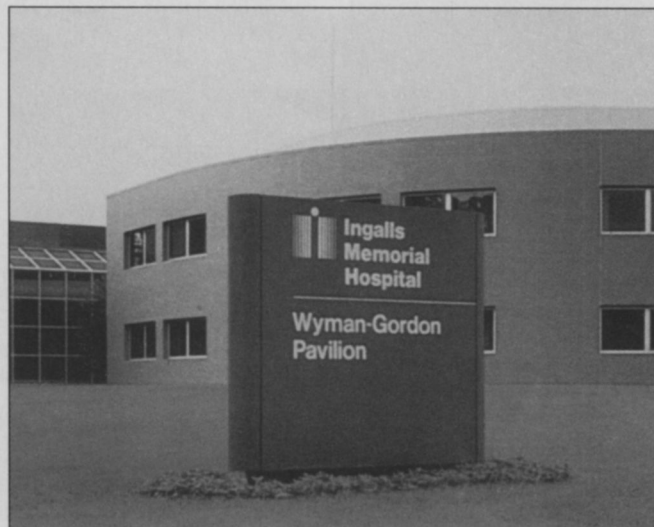
"All new lawn installations, expansions or renovations" are covered in the Aurora law. A \$10 permit is required.

It requires soil preparation with treble phosphate at 10 pounds per 1,000 square feet and three cubic yards of well-decomposed organic matter.

Buildings with six units per acre or more cannot have more than half of the open space in non-drought tolerant species.

Fewer than six units per acre, up to 7,000-square-foot-lots, 2,000 square feet can be planted plus 30 percent of the area more than 2,000 square feet in non-listed turf species.

Lawns from 7,000 to 17,000 square feet are limited to 3,500 square feet plus 15 percent of the area over 7,000 square feet, to a



maximum of 5,000 square feet.

More than 17,000 square foot lawns can have half of the area of the lot not used by structures planted to non-listed species.

Commercial areas are required to have 15 percent of the lot landscaped. Half of that 15 percent can be Kentucky bluegrass. The city manager can give special consideration upon request.

Aurora also has an ordinance against wasting water. Water waste is defined as continuous application of water resulting in ponding or runoff, failure to maintain an irrigation system or watering impervious surfaces.

A fine of \$25 is added to an offender's water bill the first time, \$50 the second, \$100 the third. At that point, the city can suspend service until the problem is fixed

and a deposit is given to assure compliance.

As well-intentioned as such ordinances are, many lawn and landscape associations take a skeptical stance.

"Such acts are folly," said Douglas Fender. Fender's American Sod Producers Association has no official position on the matter, but as executive director he leaves a listener with no doubt as to his position.

"Those decisions are based on no science or bad science," he said. "Health and safety are totally ignored."

Fender questions whether landscaping really uses as much water as some people believe. "Urban areas consume 4 percent of all water. The other 90 percent goes to agriculture or industry," he said.

New lawn installations, expansions and renovations are under scrutiny in many arid cities making large turf areas often out of the question. Xeriscaping has been endorsed by several urban groups.

He added that recent figures show landscape water amounting to between 40 percent and 60 percent of home use.

"That is peak use for a short time during the year. It is not a continuum. But even allowing that 50 percent is used on landscape and lawns, that's under two percent of the water used," he said. Reducing lawn sizes by 50 percent means a savings of one percent of the water — if one takes Fender's worst case use numbers.

"In real figures, you're talking tenths of a percent savings," Fender maintained.

California landscapers, today in the grip of a drought of historic size, do not endorse xeriscaping.

While being careful to say that landscape water conservation must be a long-term goal in that state, they too say "efficient irrigation management is the key to achieving it." About 5 percent of the water used in California goes to landscaping.

"It's not that we don't believe in the concept (of xeriscaping)," said Sharon McGuire, executive director of the California Landscape Contractors Association. "We do. We simply feel that until people understand what is really meant by the word, it's best not to recommend it."

She said drought-tolerant plants "limit us unnecessarily." As an example, she points out that azaleas, normally thought of as "thirsty" plants, would be entirely appropriate in a water-saving landscape if planted in amended and mulched soil in the shade; irrigated with low volume spray heads on a multiple, short watering cycle; and grouped with plants

(continued on page 60)



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Scapegoated?

(continued from page 57)

that have similar water needs. "The fact is," McGuire said, "any plant can be water-efficient if it's placed in the right spot and irrigated properly."

Other groups are trying to work the new proposals into their overall scheme of things.

With several years, and gradual phase-in, Florida nurserymen were able to institute changes despite initial opposition within the nursery ranks.

Tommy Aiello, chairman of the landscape contractors division of the Florida Nurserymen and Growers Association, said the restrictions "no longer are big conversation around here."

The Native Species Requirement mandated use of 50 percent native species trees in landscaping. Sable palm, live oak, wax myrtle, cypress, holly and red maple all were approved species. The requirement was phased in; the first year the requirement was 30 percent, then 40 percent now 50 percent.

Species like Australian pine, Brazilian pepper and melanoluca are banned.

Xeriscaping is the most commonly used strategy — using water conserving turf and plant materials balanced with hardscape. Almost all arid areas are instituting some form of xeriscaping.

In Florida, Aiello said, 400 industry people attend the annual xeriscape meetings.

Diane Matt, executive director of the Associated Landscape Contractors of Colorado, said reviews of xeriscape are mixed. She has seen a continuing interest on the parts of governments in Colorado in xeriscape, however, "The general public, my members say, isn't so interested in it," she added.

In Denver, there is a resurgence of interest in water conservation which may be heightened this year by a potential drought and the rejection of the Two Forks Project.

Two Forks was a proposed, large water holding project, southwest of Denver in the Front Range, that was turned down by the U.S. Environmental Protection Agency.

Bills introduced into the Colorado state legislature have not been passed. Two are pending for 1991. They include a measure to give people a "water saving" tax credit, similar to the solar tax credit program of years past. The second looks to establish an office of water conservation that would start pilot programs to save water.

"It's a misconception that xeriscape is easier to maintain and saves water, at least immediately," Matt said. Although the Denver Water Department said xeriscape and creative landscaping "often results in a 30 percent savings on home water bills," they admit that plants do need to be watered normally for the first year after planting.

Many landscape plants actually do worse under heavy watering programs.

Among plants Colorado landscapers can consider for lower-watering regimes are: snow-in-summer, a low-spreading perennial with gray-green foliage; feather-leaved penstemon, with its stunning red flowers; three-leaf

sumac, a two-to-five foot high shrub with a spread of six to eight feet; most junipers, including the "Blue Rug" variety; blue-mist spirea, a mounded two-foot high shrub which gives a late summer display of blue flowers and prefers well-drained soils in full sunlight; and rubber rabbit brush, a common medium-sized shrub which forms a spreading mound of arching gray stems four feet high and wide.

Matt said people could save money and water by managing irrigation systems better, not by changing landscapes.

Matt, Fender and the municipalities they critique all agree that education is the key to obtaining any degree of success.

"Educate about the amount of water to apply and when to apply it. Tell people plants can go dormant and recover nicely," Fender said.

The idea that "the only good lawn is a green lawn" needs to be put aside. There are good grasses for every climate and new grasses are being released which

(continued on page 90)

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CONSISTENCY: THE BEST OFFENSE AND DEFENSE IN UNPREDICTABLE TIMES

In times of crisis, it's too late to amend your financial game plan. You'll be way ahead of the game if you have good information systems in place.

By Frank Ross

ARE WE IN THE MIDDLE of a recession? I have no idea. I learned a long time ago never to second-guess the vitality and durability of our economy.

Nevertheless, one would be foolish to ignore the signs of the times. Concern over high fuel prices brought on by the Persian Gulf conflict has occupied most of our current attention.

To this international event add that inflation in this country has swelled to nearly 6 percent, long-term interest rates continue to rise, the dollar is steadily losing its strength of three years ago, a sink-hole has opened under our stock market, the budget deficit continues to spiral out of control making a tax hike unavoidable, the long-term impact of the S&L debacle has yet to be calculated and with each day that passes, the inventory of vacancies in the commercial and residential building markets grows alarmingly.

For green industry owners nationwide, it is worry time. But wondering, "How should I handle my finances now?" is the wrong question to ask. The right question is, "How should the finances of my company be arranged such that I don't have to jump through hoops with every crisis that arises."

I, for one, believe that the long-term strategy for accumulated wealth in the green industry is consistency; creating a stable environment. I don't like a lot of variation in business because, to achieve variation, you must take undue risk. Risk can heap huge rewards, but evidenced by the junk bond disaster, it can also have an ugly downside; and most of us in

the green industry do not have the capital structure to be able to take those kinds of chances.

BUILDING STABILITY. How do we accomplish consistency, particularly during a period of an economic roller coaster? There are three primary tools of effective business management, which, if mastered, can provide the necessary stability and purpose to navigate these times.

The first tool every manager should have is a business plan, preferably beginning with an ov-

erall vision of the long-term goals of ownership. These goals should include a definition of the overall mission of the company — what are its motives and its methods, what are its production skills, what are its standards of quality, who are its customers, what is its image, what is its position within its community and what are the financial guidelines by which it will operate.

One of the hardcopy products of a good business plan is an operating budget for the coming year. A budget is a necessary, even

vital, planning tool for achieving company goals. It establishes a basic company philosophy that promotes the efficient use of manpower, materials and equipment while unifying objectives, marketing plans and action plans. Like a road map, a budget shows how to reach company objectives in the shortest, least expensive and most efficient manner.

The budget comprises a five-step process that, when completed, will provide you with a written course of action which establishes responsibility and identifies required performance levels.

1. *Set your profit goal.* Determine the minimum amount of profit required to retire debt, support future operating goals and pay taxes.

2. *Forecast overhead.* Use the zero-based concept for forecasting overhead. I find this is easily done if you take one sheet of paper per overhead account and specifically define what you intend spending for the coming year.

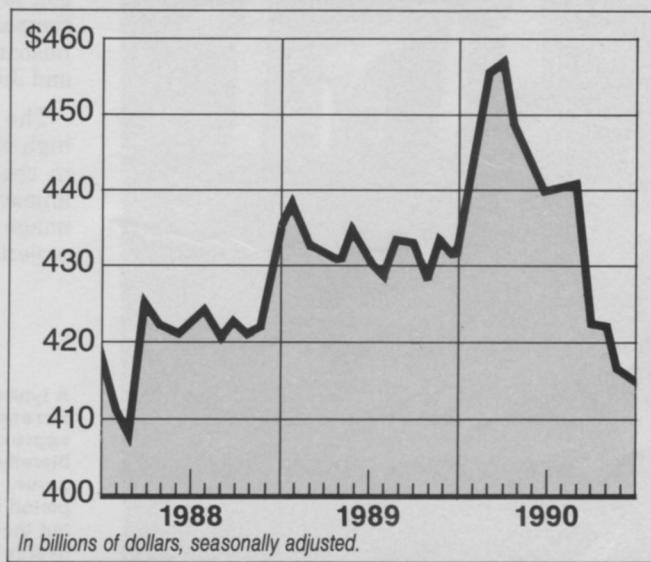
You may wish to use historical performance as a guideline to make sure that you do not overlook anything, but don't make the mistake in thinking that if you spent money for it last year it's OK to spend money for it next year.

Understand that net profit plus overhead equals gross margin and, by forecasting profit and overhead first, you have just established the gross margin which will be required from jobs to maintain your standard of living.

3. *Establish your backlog.* By type of work, list your known con-

(continued on page 64)

CONSTRUCTION SPENDING



Source: The Wall Street Journal.

Using Embark[®] to reduce top growth and clippings

PLANT GROWTH REGULATOR

Now, with new formulations of Embark and tank mixes with Limit[®], you can *tame* the growth of turfgrasses and reduce the mowing by up to 50% — or you can *slow* it down just enough to make regularly scheduled mowings easier and faster. In either instance, there are no concerns with objectionable discoloration, and the reduction in cost is very significant.

Everett Mealman, President
PBI/Gordon Corporation

The Embark PGR programs for growth regulation of fine turf are surely the most important developments to date in landscape management. They can dramatically increase the productivity of turf managers . . . and productivity, of course, is the ultimate generator of profits.

The recommendation for maximum growth suppression of cool-season

fine-turf species is a tank mix of Embark Lite and Limit.

Embark Lite (Mefluidide) is specially formulated and labeled for use on fine turf. And Limit is amidochlor, the root-absorbed turf growth regulator developed by Monsanto and recently acquired by PBI/Gordon.

This easy-to-handle tank mix, when applied to cool-season grasses prior to

the major growth period, will reduce the number of mowings up to 50% for five to six weeks at a cost of approximately \$45.00 per acre — the average cost of one mowing.

But that's only part of the good news: Turf discoloration is avoided with this combination, when used as directed. At the end of the six-week cycle when untreated turf tends to fade, the release of pent-up energies in the Embark Lite/Limit-treated turf results in a rich, vibrant green color.

And, notice, we haven't even mentioned the environmental bonus of reduced clippings.

On the other end of the Embark programs, an application of just Embark Lite will by itself slow down the growth for three to four weeks to such a degree that the mowers will virtually float over the turf . . . clippings will be significantly reduced . . . you'll be able to stay on schedule even during the peak growing season . . . and the cost will be only \$18.00 per acre.

What users say

Paragon Lawn of Edina, Minnesota is typical of the many turf management professionals throughout the country who are using Embark. Paragon is a total landscape management company owned and operated by the husband-wife partnership team of Dan and Jill Rosen.

The business is oriented toward high-visibility commercial properties in the Minneapolis suburbs, where immaculate turf is a vital part of the image the property owners want to project to the public.

A typical area where Jill and Dan Rosen, of Paragon Lawn, use Embark Lite. For approximately \$18.00 per acre they can literally take the fight out of cool-season grass, so that even in the peak growing period they not only can stay on schedule but the mowed premises will maintain their freshly cut appearance longer.



On several properties, Paragon has total responsibility for designing and executing the complete program on an annual bid basis. "Such property owners don't really care what we do or when we do it," says Rosen. "The issue is that a constant image of quality and neatness be maintained."

In such instances the Rosens factor into their bid an Embark Lite/Limit tank mix treatment twice a year. Once in the spring, ahead of seedhead emergence, and a repeat prior to the fall growth season.

"It reduces our mowing costs by more than 50%, at a cost of less than \$45 per acre, while actually improving the appearance of the grass..." states Rosen.

On the other hand, Paragon has many customers who are on a regular mowing schedule. "We get paid a flat fee per mow," says Rosen, "and at the peak of the growing season it can be a real back breaker to stay on schedule and maintain a manicured appearance."

"This is where Embark Lite is ideal. During the peak growing season, we can definitely put money in the bank by spending \$18 per acre out of our own pocket for a treatment of Embark Lite that lasts three to four weeks. It eliminates double mowing... it makes clipping clean-up a breeze... it takes pressure off men handling the mowers... and, best of all, it keeps us on schedule."

Interestingly, the Rosens were hesitant about getting started with Embark, and actually had a gallon in their machine shop for a year before they opened it. Like so many turfgrass professionals, the concept of suppressing growth made them uncomfortable in light of the fact that they had always measured turf quality and health on the basis of how vigorously it was growing.

Consequently, the Rosens started out very cautiously and tested both the Embark Lite/Limit tank mix and the Embark Lite mowing aid program in low-profile areas and expanded the total commitment as the evidence became overwhelming.



The Beauty of Embark Lite/Limit Tank Mix

Above: John Van Haften, director of research and development for PBI/Gordon, demonstrates the dramatic effectiveness of an Embark Lite/Limit tank mix. This test plot of bluegrass and ryegrass in suburban Kansas City was treated on April 25, 1990. It was mowed once, on May 1 after the PGR kicked in, and never touched again until this photo was taken on May 25. This dramatic reduction in growth occurred in spite of abundant rainfall and excellent growing temperatures.

Embark is the original, undisputed leader of all PGRs for use on turfgrass. It is foliarly absorbed and translocated to the growing points of a plant, and redirects the energy to the roots, thus preventing seedhead development and stem elongation.

For almost ten years, Embark has been virtually unchallenged for use on low-maintenance turf such as roadsides and hard-to-reach areas.

But use of Embark on highly visible fine turf was not recommended until 1986, when PBI/Gordon researchers, as well as several universities, had proven that tank mixes of Embark and Ferromec® AC Liquid Iron could eliminate the problems of turf discoloration.

Limit, on the other hand, is root absorbed and has been recognized from its inception as the PGR for maximum growth suppression on fine turf without problems of discoloration. The major drawback was its cost.

Happily, a tank mix consisting of reduced rates of both Embark Lite and Limit has proven to be the perfect marriage. It results in growth control for five to six weeks; control of seedheads and stem elongation; reduction of clipping volumes; strengthening of the roots... and all of this for only \$45 per acre.

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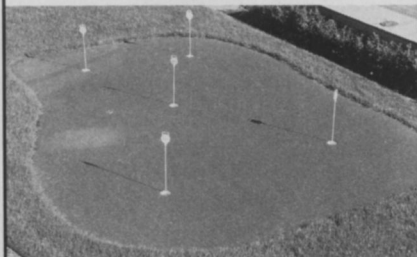
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Recession

(continued from page 61)

tracts and renewals for next year. Do this by listing the remaining revenue and job cost exposures of labor, materials, subcontracts and equipment for each project. By subtracting job cost from revenue, you will calculate that part of the total gross margin which is already sold for next year's operation.

4. *Prepare a labor budget.* Establish your true production capacity in hours by forecasting how much labor you can reasonably field for next year. I suggest doing this by crew. For example, if a man works 40 hours a week for 52 weeks, he will turn in 2,080 hours.

But is all of the time productive? Obviously not. He will experience lost time in the form of holidays, vacations, inclement weather, training, injuries, equipment breakdowns and just simple lost time. The purpose of this exercise is to calculate what amount of a man's time is salable vs. non-salable, for only the salable hours contribute to gross margin.

Also in this step, you will want to determine what you intend to pay in wages and benefits by skill level within each crew.

5. *Build your sales budget.* In Step 3 above, you calculated the amount of gross margin you must produce to cover your total overhead and profit goals. In Step 3, you calculated how much gross margin is already sold in your backlog.

The difference is the amount of additional gross margin you must sell and produce to achieve overall success. Convert this remaining margin requirement into a revenue goal within the parameters established in the labor budget in Step 4.

If you fall short in revenue based upon the remaining capacity of your labor force, then you either must add crews, which requires recruiting skilled personnel, buying equipment and adding overhead, or you must go back and reduce your previously budgeted overhead and profit goals. Either way, the end

result is the amount of business you must acquire to cover overhead and produce a profit.

FORECASTING. Now that overall revenues are established, forecast when those contracts must be signed by anticipating the normal lead time between contract signing and actual production. This exercise will establish the timing for your sales staff as to when work must be sold to maintain a consistent work force and to achieve the company gross margin requirements.

The next step determines how much revenue must be generated to cover my standard of living and return on investment needs.

This is contrary to the way most people think of budgeting. Most people begin the budgeting process by asking how much sales do I want to do next year, and then use history to set margin and overhead expectations. At year-end, they will wonder why it didn't work out right.

Once the five steps have been completed, polish your budget by establishing the following guidelines:

- Determine how many people you will be hiring and the time line for bringing them on board.
- Establish your wish list for additional capital needs, i.e., facility expansion, trucks, equipment, computers, etc.
- Establish your pricing strategy adjustments by type of work.
- Prepare a monthly spread of the budget by account such that you can compare actual to budget throughout the year. Also prepare the monthly cash flow which will determine when you need to go to the bank to borrow money and when you intend to pay it back.
- Update your long-range goals. Do this particularly if your short-range plans have required a change in the course of your company's development.

Include your management team in the goal-setting process. Don't set your company's goals unilaterally. If you do, you're setting

MAKING THE MOST OF BORROWING

EVERY MANAGER'S goal should be to operate debt free. Nevertheless, if you must borrow, the following are some hints which may help.

1. When setting up a banking relationship, always do so with a letter of recommendation from your attorney, accountant or other adviser. And, always go to the highest bank officer possible.
2. Understand that a banker is not a "business adviser" in the generic sense, though they may fancy themselves as such. They will look at your business with a very narrow focus: repayment of loans.
3. It is easy to borrow money. Bankers are greedy capitalists just like the rest of us, and they are motivated to loan us all

the money we want until we convince them that we cannot pay it back.

4. Never borrow money to pay for past sins. Sacrifice your standard of living to pay those. Only borrow to promote future growth.

By now I am sure that you have realized that none of the aforementioned indices of management are necessarily recession focused, but rather good management focused.

As I have said, I have no idea if we are headed for bad times. That depends on who you're talking to. But if a company is managed properly from the get-go, it will not matter, in good times or in bad, it will always generate a profit.

your employees and company up for a fall. Instead, aim for mutually developed goals.

Once established, the goals must be frequently assessed. Find out, at least monthly, whether the goals are being reached, exceeded or missed — and why. For example, once the budget is completed, you will have established the sales goals for the coming year. (Do not be confused with the definition of production goals, which is the value of work produced within a certain period, and sales goals, which are the values of contracts signed to be produced.)

Tracking sales activity vs. their goal is extremely valuable as an early warning barometer because, in most companies, the lead time from contract signing to actual installation is at least two to three weeks and often as much as six months or more. If you have enough warning to see that you are falling short of being able to supply your crews with work, you can make appropriate adjustments before it is too late to respond.

The second tool required for long-term business success is a solid information system. W. Edwards Deming said it best: "You cannot control what you do not track." In hard times, as well as in good, control is the key to achieving goals; and, in your business, your information system will be the control system.

Because in most companies this system is predominantly financial in nature, make sure you have learned how to read a financial statement and encourage your key managers to do the same.

JOB COSTING SYSTEM. The key for your estimating/costing/financial system's success really has nothing to do with software, but with management's commitment to being consistent from one application to another. Make sure that the costing and financial systems are built in the image of the method you estimate work. That's right, the way you estimate work will establish what is a job cost and what is an overhead cost in both your job costing system and your general ledger.

For example, if you estimate something as a cost of a job, then, by definition, that item must also be treated as a job cost in your job cost system and as a job cost in your general ledger. If it is not specifically estimated as a cost to the job, then, by definition, it is an overhead cost and will be omitted from the job cost system and treated as overhead in the general ledger.

This point is most easily appreciated when considering how you treat labor in the estimating system. Ask yourself how you would deal with the following labor functions in a job estimate — Are they a job function or an overhead function? — then make sure that every other system recognizes the functions in the same way: supervision, travel, loading, equipment maintenance by crew members, material and equipment movement, the premium portion of overtime pay, replacements, vacation, holidays, sick time, job injuries or accidents, meetings, training, paper-

work and inclement weather.

There is no correct answer here, but make sure you are consistent in handling each item the same way in all your systems.

Process and update your job costs data consistently at the end of every payroll period, print your reports and make sure you review the job status with everyone associated with the job including, most importantly, the crew leader.

- Maintain schedules of accounts receivable and accounts payable which will age the outstanding amounts in increments of 30 days. Review these weekly with your key managers.

- Generate a daily cash position report which focuses upon the daily balances of cash in the bank; deposits received today; anticipated disbursements; the balances of receivables, payables and notes; and any upcoming events which will require your special cash management attention.

These few reports will give you a strong basis for being able to maintain a finger on the pulse of your business. Generate them regularly and, if you need help understanding all of their meanings, call on your financial advisers to assist you. That's what they are there for.

In tough times as well as good ones, attentiveness to your marketplace is the key to your income stream, and is your third tool. In most of our businesses, more than 60 percent of our income is derived from repeat customers. It's ironic, however, that most of us are still focusing 90 percent of our time on pulling in new customers and leaving our old customers to fend for themselves. The travesty of this logic is that, as we bring one new customer into the family, we can typically lose one or two old ones.

The purpose of all of our businesses should be to keep a customer once we have him. Therefore, direct your sales and marketing energies in proportion to where your current business is being generated:

- Contact by mail, or preferably by phone, every customer with whom you have worked in the past three years. Set up an appointment to walk their properties with them. Take an order form with you because in 80 percent of the cases, you will sell additional work.

- Make sure that every customer you have receives something from you at least twice a year. It doesn't have to be formal or involved.

- When the relationship supports it, ask existing clients for referrals. Most times they are delighted for the opportunity to share your skills with their friends and associates.

Your existing customers will buy more if you service them correctly. They already know you, your quality and your pricing; all of which means that the foreplay required by a new account is eliminated.

Once you, as management, have honed your skills with the three tools — effective business planning, information flow and client

(continued on page 91)

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TURF PLUGGING

BRINGS QUICK ESTABLISHMENT

Now considered a specialized field, states afflicted by tight water supplies and high land values may spur growth of professional turf plugging.

By Mark Ward

AS AN ALTERNATIVE to sod or seed, professional use of turf plugs will soon sweep the country — or remain a strictly local practice. The answer depends upon who does the talking, but University of Florida researcher Phil Busey conceded “turf plugging can work when it fits a company’s current lawn maintenance operation.”

Pre-rooted grass plugs are sold today in trays, then planted with a gas-powered auger. Holes are spaced 12 to 24 inches apart, depending upon grass variety and shade conditions. Over time the planted plugs put out runners that ultimately cover the lawn area.

Turf plugs have been sold for many years to homeowners. For example, Zoysia Farms of Taneytown, Md., sells “Amazoy” plugs through mail-order advertisements in national popular gardening publications. Professional turf plugging has only emerged during the past 10 years and, though the practice is spreading, its use is now restricted chiefly to areas of central Florida.

Advocates of turf plugging claim the practice offers both economic and horticultural benefits. Chief among these is “unlike



sodding, you don’t have to remove the existing lawn. Plugging only requires you to kill the weeds first,” said manager Vic Woodbrey of Woody’s, a lawn maintenance operation in Fort Lauderdale, Fla.

Owner Ted Crain of Advanced Turf Renovation, Fort Meyers, Fla., remembers his first turf plugging contract two years ago. A landscape firm had estimated \$4,000 to sod a homeowner’s lawn, including nearly \$2,000 to remove the existing lawn. Crain quoted the renovation job for \$1,500 and still cleared a 40 percent profit.

Because turf plugging doesn’t require lawn removal, owner Jim Hulsman of Pro Lawn Care, Sarasota, Fla., also pointed out

“a small company like mine could offer renovation services without purchasing or maintaining costly equipment. Plus I don’t incur liabilities from operating equipment near irrigation pipes, electrical lines and expensive shrubbery.”

As the nation’s largest grower and distributor of turf plugs, Pursley Turf Farms of Bradenton, Fla., sells plugs through nearly 1,000 garden outlets directly to homeowners from Maryland to Texas. But sales representative Bryan Wilcox admitted the firm’s present distribution of plugs to lawn maintenance operators is mostly within Florida.

“One reason professional use of plugs hasn’t spread more out-



If turf is 50 percent or more weeds, it’s ideal for renovation. (above) Turf plugging is one option. (left) Photos: Pursley Turf Farms.

side Florida,” explained Wilcox, “is because growing seasons elsewhere are shorter. Here a new lawn can be established in two months. In other areas where it takes longer, the maintenance operator has more management costs. Shipping plugs out of state adds to freight costs.”

Busey said professional use of plugs will likely remain limited because, compared to sodding, lawn removal savings are offset by higher management costs.

“Sod farms enjoy economy of scale in turf management, where plugged lawns must be managed individually,” said Busey, who is an associate professor and turf breeder at the University of Florida’s Fort Lauderdale Research and Education Center.

“Simply put, sod grows on the farm, whereas plugs grow on the lawn,” added Busey. “But in a given area or for a given company, turf plugging can work.”

PROS AND CONS. Turf plugging
(continued on page 68)

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was common in Florida during the 1950s and 1960s — though the plugs used then were simply smaller squares cut from sod, rather than the pre-rooted plugs sold today, Busey said. By reducing the amount of plant material, plugging allowed landscape firms to reduce freight costs.

After 1960, transportation developments in Florida allowed sod prices to substantially decline.

"More roads allowed more truck routes," he explained, "and with palletization, sod could be shipped very efficiently. Since then sod has been comparatively cheap and plugging pretty much disappeared."

However, efficient transportation has also reduced flexibility. Sod is typically transported in truckloads, with no off-loading en route. Smaller lawn maintenance professionals can have difficulty obtaining sod for single projects and in such cases, Busey said, turf plugging could be an alternative.

Woodbrey has solved the transportation problem by growing his own turf plugs since 1982. He agreed with Busey that plugged lawns require painstaking management. But rather than being scared off, Woodbrey said, any additional turf management simply reinforced his business.

"We have always done lawn care," Woodbrey said. "So plugging not only lets our company expand into lawn renovation, it just brings us more lawn care customers if the lawns we renovate need follow-up management."

When Woody's began turf plugging in 1978, the move was part of an overall quality strategy. Though new strains of insect resistant grass were on the market, buying sod by the truckload was costly. So the company turned instead to plugs as a way to reduce the amount of plant material required.

"Now we carry plugs in three grass varieties," added Woodbrey, "and can mix them to give clients customized lawns. Plugs allow us flexibility to tailor each lawn, which you can't do with sod. For example, we can plant a lawn designed to be green during the winter tourist season. That gives our company a real competitive advantage."



Woodbrey described a four-step program the firm follows for installing turf plugs:

- First the lawn is killed and any weeds removed, usually with two sprayings over 30 to 40 days. Woodbrey offers a fixed price per 1,000 square feet if customers permit the company to decide application dates.

- The lawn is then measured and, based upon square footage, Woodbrey furnishes an estimate for plug installation and follow-up care to establish the new lawn.

- After weeds are removed, Woodbrey plants plugs 24 inches apart (250 plugs per 1,000 square feet), or 18 inches apart (440 per 1,000 square feet) in shady areas. With a three-man crew, Woodbrey can plant 5,000 square feet (or 1,250 plugs) in one day.

- "You need about 10 pallets of sod to cover the same 5,000 square feet of lawn," Woodbrey said "and it takes two to four men to lay that sod in one day. So the speed installation for plugging and sodding are comparable."

- Woodbrey will not handle plug planting unless customers agree to let his company also perform lawn care for one year.

"It takes four to seven months to really make sure a lawn is established," he pointed out, "and an attractive lawn is my best advertisement. I've sold a dozen jobs just from people who saw a customer's new lawn."

While Woodbrey used plugging to afford higher quality plant material, Ted Crain began the practice to give his start-up company a chance to survive. Plugging allowed his Advanced Turf Renovation to avoid the cost of sod laying equipment, and at the same

time provide lawn renovation services at highly competitive prices.

"Before any grass is put down," Crain said, "I only have a couple hours invested. The other guy has maybe two days invested to remove the existing lawn, along with machinery and dumping costs." To prepare a lawn area for plugging, Crain first applies a weed killer, then mows existing grass to a height of 1 to 1 1/2 inches.

For the first 30 days after plugs are planted, Crain visits the site weekly to check for weeds, insects and proper watering. He said it's important that customers "know I'm not going to pop the plugs and run."

Still another reason to enter turf plugging, according to Hulsman of Pro Lawn Care, is the opportunity for small operators to expand their services with little up-front investment.

Most equipment needed for turf plugging were items Hulsman already owned, such as back packs, spreaders and mowers. For the \$300 price of an auger and bit for drilling plug holes, he "added a service that could be the difference in keeping existing contracts or obtaining new ones."

Hulsman also sees plugging as a prime way to handle service calls. Dead grass is a fact of business life, he said, whether the problem is natural or man-made. "Corrective measures must be economical and effective, and turf plugs meet both criteria."

AGRONOMICS AND ECONOMICS.

"Plugs have six-inch roots and are planted to a depth of three inches," Wilcox said, "while sod is planted about 1 1/2 inches deep. Sod also has seams that let moisture

In plugging, the existing lawn is killed rather than removed.

escape, so it can dry out faster and require more watering."

When sod is first cut out and lifted from the ground, Wilcox said, "the grass has lost most of its roots and gone into shock. Sod needs tremendous care once it's laid out on a lawn. On the other hand, plugs can stand more stress, which might aid in weed and insect control."

Hulsman and Woodbrey agreed turf plugs have better root systems than sod and require less water. And because the existing lawn is killed rather than removed, retention of the dead vegetation offers added agronomic benefits, Woodbrey said.

"To lay sod you've got to dig out the lawn," Woodbrey explained, "but plugging allows you to preserve the soil. Then the dead vegetation introduces nutrients, helps preserve moisture and keeps sand from drifting and being tracked into the house."

Leaving thatch can also aid weed control, Woodbrey claimed, since herbicides can cling to the dead matter and thus keep closer contact with weeds.

According to Florida-based consultant and plant breeder Jack Murray, plugging can allow faster market introduction of improved grass strains. Murray spent 20 years with the Agricultural Research Service in Beltsville, Md., before retiring recently from the U.S. Department of Agriculture.

"Most new grass varieties were once introduced by the USDA or state universities and made available to everyone as public domain," Murray observed, "but now many species are owned by plant breeders, and even government agencies release new varieties with licenses that limit production to a few companies. So when new grasses are introduced today, they cost more."

By reducing the amount of plant material needed, he said, turf plugging may bring new grass strains within the financial reach of more lawn maintenance operators. Then as new varieties become more widespread, he continued, overall turf health will be improved.

Proponents of turf plugging also suggested the practice yields higher profit margins, though

(continued on page 70)



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Turf Plugging

(continued from page 68)

estimates varied. For example, Woodbrey prices plugging and turf management together at 22 to 29 cents per square foot, compared with 40 to 50 cents he estimated for sod.

According to Wilcox, lawn renovations can be sodded for 35 to 45 cents per square foot, or plugged for 12 to 18 cents (not including subsequent management costs) with profit margins of 30 percent to 40 percent. Those margins were affirmed by Murray and Crain, who clears \$600 on a typical \$1,500 project.

Nevertheless, Busey acknowledged plug-

ging can be beneficial for some operators. To maximize any economic advantage, he recommended plugs be planted as far apart as possible.

"Because we're dealing in square feet," he said, "if you go from 24-inch to 12-inch spacing, you're talking about four times more plugs. As a rule, you can get a good lawn by planting anywhere from 1 percent to 5 percent of the lawn area — with 3 percent being an average."

Wilcox observed that plug spacings of 15 to 18 inches are common, while Woodbrey prefers 18 to 24 inches. Busey said spacings of 30 to 36 inches were possible, though slow-

er-growing grasses can require closer spacings.

BUT WILL IT SPREAD? All parties agreed turf plugging is not likely to overtake sodding soon, if at all; and will never catch on in northern climates.

"In Florida you can establish a lawn in two months," Wilcox said, "but in Minnesota it could take two years. So the operator in Minnesota could never get out of the job what he puts in."

In addition, grasses must propagate vegetatively for turf plugging to work, while northern varieties commonly propagate by seed. Within that limitation, all agreed there are no restrictions upon what grasses may be cultivated as plugs.

Potential sites for professional turf plugging is therefore limited to areas with warm-weather grasses, and perhaps to transitional zones. Busey contended the practice would likely remain localized, but others suggested certain developments could cause plugging to become more widespread.

Murray suggested two developments could spur professional turf plugging. First, he suggested states afflicted by tight water supplies might look to plugging as a means to reduce consumption.

Then Murray noted new varieties of buffalo grass — suited for Southwestern and Plains states — are expected on the market this year. "Companies in those areas that use turf plugs might get a jump on introducing those grasses, since they won't have to buy as much material."

Finally, Busey suggested high land values in California and other expensive markets might impact sod farms. Because these farms' rising land costs may drive up their prices, turf plugs could become an alternative.

According to Woodbrey, a factor that holds back turf plugging is the small number of plug growers. "It's a specialized business. Even in Florida there are only three or four companies selling plugs to lawn maintenance operators."

However, Woodbrey believed exposure is the ultimate key to more turf plugging. When he wins one job in a community, Woodbrey claimed he may perform a dozen the next year, and 50 the second year. A similar report is offered by Crain, whose very first turf plugging project resulted in eight inquiries and four requests for estimates.

"I advise companies to maybe do the first few homeowner jobs at cost," Wilcox said, "or to drive down Main Street and notice the fast-food restaurants, shops and churches whose lawns need help. Once plugging gets exposure, the rest follows."

Woodbrey views sod as a means of installing new lawns, often for new homes or construction projects. By contrast, plugging has its role in lawn renovation and repair. ■

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



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GETTING AT THE ROOT OF HERBICIDE COMPLEXITIES

By Karl Danneberger, Ph.D

Evaluation of conditions which the weed and desirable plant are growing under will help determine which herbicide to use, its effectiveness and safety.

EFFECTIVE WEED control begins with sound cultural practices. Practices such as mowing frequently and at the proper cutting height, fertilizing and irrigating to provide a dense turf, help the turf to out-compete weeds by not allowing them an opportunity to establish.

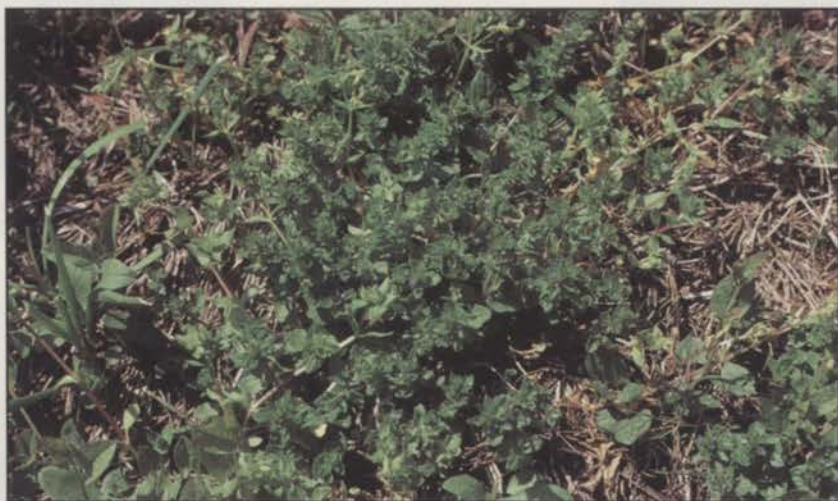
Even with a sound cultural program, however, herbicides are often needed.

Herbicide effectiveness is determined by the selectivity of the chemical compound and the susceptibility of the weed. Selectivity can be defined as an expression of differential plant response to a chemical.

Factors influencing herbicide selectivity are:

- placement
- dosage
- formulation
- growth stage
- degree of absorption
- translocation
- pesticide interaction

SELECTIVITY. Placement is getting the herbicide to the desired weed with adequate coverage. The two primary forms are granular and liquid. If a herbicide requires complete coverage of the weed to get control, a liquid formulation is the most appropriate. If the herbicide needs to be in contact with the soil, a granular may penetrate



Speedwell, a common weed found in the North and Midwest.

the canopy more readily.

Dosage of the herbicide is critical for adequate control. If not enough of the material is applied, inadequate control will occur. If too much is applied, injury or death to the desirable turfgrass species can take place.

Formulations are usually regarded as the packaging or delivery method for the chemical. However, some herbicides can be formulated differently to achieve varying results. A common type of formulation would be to add a surfactant or adjuvant which may enhance the activity of the herbicide.

In addition, the formulation of the particular herbicide can influence control. For example, the acid formulation of 2,4-D is not soluble in water and is rarely used. The commonly used salt form of 2,4-D, however, is readily so-

luble in water. The third formulation of 2,4-D, the ester, which is soluble in oil is more efficacious than the salt-amine formulation.

It is believed that the ester is more volatile allowing stomatal absorption of the gases, the oil carrier may aid plant penetration and the low polarity of the formulation causes cuticle penetration. The drawback to the ester formulation is the drift potential which can result in injury to desirable plants.

The age of the weed can influence the selectivity of the herbicide. Mature weeds are generally more difficult to control than young weeds because developed weeds are not growing as rapidly; consequently less herbicide is taken up.

Absorption, translocation and metabolism all influence weed control by influencing the amount

of herbicide a plant takes up. Care needs to be taken not to over-apply a chemical.

Often if application rates are excessive, the translocation ability of the herbicide is reduced. An example is spot spraying broadleaf weeds with a phenoxy. If the application is excessive, uptake of the herbicide may be great enough that it kills the foliage so rapidly

that the herbicide has no means of translocating down and killing the root system and underground buds.

The end result is the weed comes back. Metabolism is important since this is a means by which non-sensitive plants break down the chemical to non-lethal compounds.

Tank mixing can influence herbicide selectivity. Mixing herbicides together can, in some instances — such as with the phenoxy — result in a higher activity than each applied alone. In other instances, however, improper tank mixing can result in a loss of herbicide activity. Always check the label for proper mixing instructions.

SUSCEPTIBILITY. The degree to which a plant responds to an ap-

(continued on page 76)



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Herbicide Complexities

(continued from page 72)

plied herbicide is termed susceptibility. Weed susceptibility is influenced by:

- age
- physiological and morphological characteristics of the weed
- amount of herbicide absorbed
- herbicide toxicity

- environmental factors

Weed age and herbicide toxicity have been previously discussed.

Weeds that are actively growing under non-stress conditions more readily take up herbicides. For example, under drought conditions weeds are considerably more tolerant of herbicides than under moist conditions. Under drought conditions it is more dif-

ficult for the herbicide to penetrate the cuticle and reduced growth can result in reduced herbicide uptake.

Amount of herbicide present at the site of action is influenced by a number of factors. Leaching, volatilization, drift, photodecomposition, runoff, soil adsorption/absorption, microbial decomposition and soil chemical reactions

are some of the factors that can influence the amount of herbicide present.

It's important to read the label to determine what conditions can result in lost effectiveness. Some of the common herbicides used in turf can degrade in the presence of light, and some are susceptible to volatilization.

(continued on page 78)

WEED CONTROL

Chemical Family	Common Name	Trade Name	Mode of Action	Comments
Acetamides	metolachlor	Pennant	meristematic inhibitor	Used on some warm-season turfs such as bermudagrass for preemergent weed control.
Amides	diphenamid pronomide napropamide	Enide Kerb Devrinol	meristematic inhibitor meristematic inhibitor meristematic inhibitor	These herbicides are primarily used for annual grass control in some warm-season turf.
Benzoics	dicamba	Banvel	plant hormone-like	Used postemergent for broadleaf weed control.
Benzothiadiazole	bentazon	Basagran	photosynthetic inhibitor	Used to control nutsedge. Thorough coverage provides most effective results.
Dinitroanilines	benfenin pendimethalin	Balan Scotts LESCO	meristematic inhibitor meristematic inhibitor	DNA's are used preemergent for annual grass control. Some of the dinitroanilines can give very early post and some control of broadleaf weeds. This group of herbicides is the most widely used in lawn care for annual grass control.
	Trifluralin + benfenin oryzalin + benfenin prodiamine	Team XL Barricade	meristematic inhibitor meristematic inhibitor meristematic inhibitor	
Imidazolinones	imazaquin	Image	meristematic inhibitor	Used on warm-season turfgrasses such as bermudagrass as a preemergent.
Organic Arsenicals	DSMA MSMA Cacodylic acid	*** *** Phytar	contact contact contact	DMSA and MSMA provide postemergent annual control. Cacodylic acid is non-selective.
Oxy-phenoxy propanoic acids	Fenoxypop-ethyl sethoxydim	Acclaim Poast	meristematic inhibitor meristematic inhibitor	Acclaim is a post-emergent control for crabgrass. Poast is used in warm-season turfs.
Phenylureas	siduron	Tupersan	meristematic inhibitor	Preemergent weed control for use especially on new seedling turfs. This compound is different from other substituted urea in that it is not a photosynthetic inhibitor.
Phenoxy acids	2,4-D dicloprop MCPA mecoprop	***	plant hormone-like plant hormone-like plant hormone-like plant hormone-like	Phenoxy's are used for postemergent broadleaf weed control. Most widely used herbicides in the lawn care business. MCPP controls clover.
		MCPP		
Phosphono Amino Acids	glyphosate	Roundup	meristematic inhibitor	Non-selective control.
Pyridine carboxylic acid	triclopyr triclopyr + clopyralid	Turflon Confront	plant hormone-like plant hormone-like	Effective on perennial broadleaf weeds as a postemergent application.
Sulfonylureas	chlorsulfuron	LESCO TFC	meristematic inhibitor	A spot treatment for the removal of tall fescue from Kentucky bluegrass.
Triazines	Atrazine metribuzin simazine	AAtrex Sencor Princep	photosynthetic inhibitor photosynthetic inhibitor photosynthetic inhibitor	Used on some warm-season turfs for control of annual grass.
Others	Bensulide	Betasan	not fully understood, inhibits root growth	Preemergent weed control. Labelled for use on short cut bentgrass for annual grass control. Preemergent weed control. Does show postemergent control of perennial speedwell. Preemergent weed control in cool- and warm-season grasses.
	DCPA	Dacthal	not fully understood kills germinating seeds	
	oxidiazon	Ronstar	pigment inhibitor	
New Chemistry	Isoxaben	Gallery	not fully understood	Unique broadleaf weed control since it is a preemergent. Used for preemergent annual grass control, will also control annual grasses early post. Effective postemergent control of annual grasses and some broadleaf weeds.
	dithiopyr	Dimension	meristematic inhibitor	
	Quinclorac	Impact	plant hormone-like	

***number of trade names

***No endorsement of compounds mentioned is implied. Nor is any recommendation for given use. Before using any compound, always read and follow labelled instructions.

Table 1. Some herbicides used in turf situations and a brief description of each.

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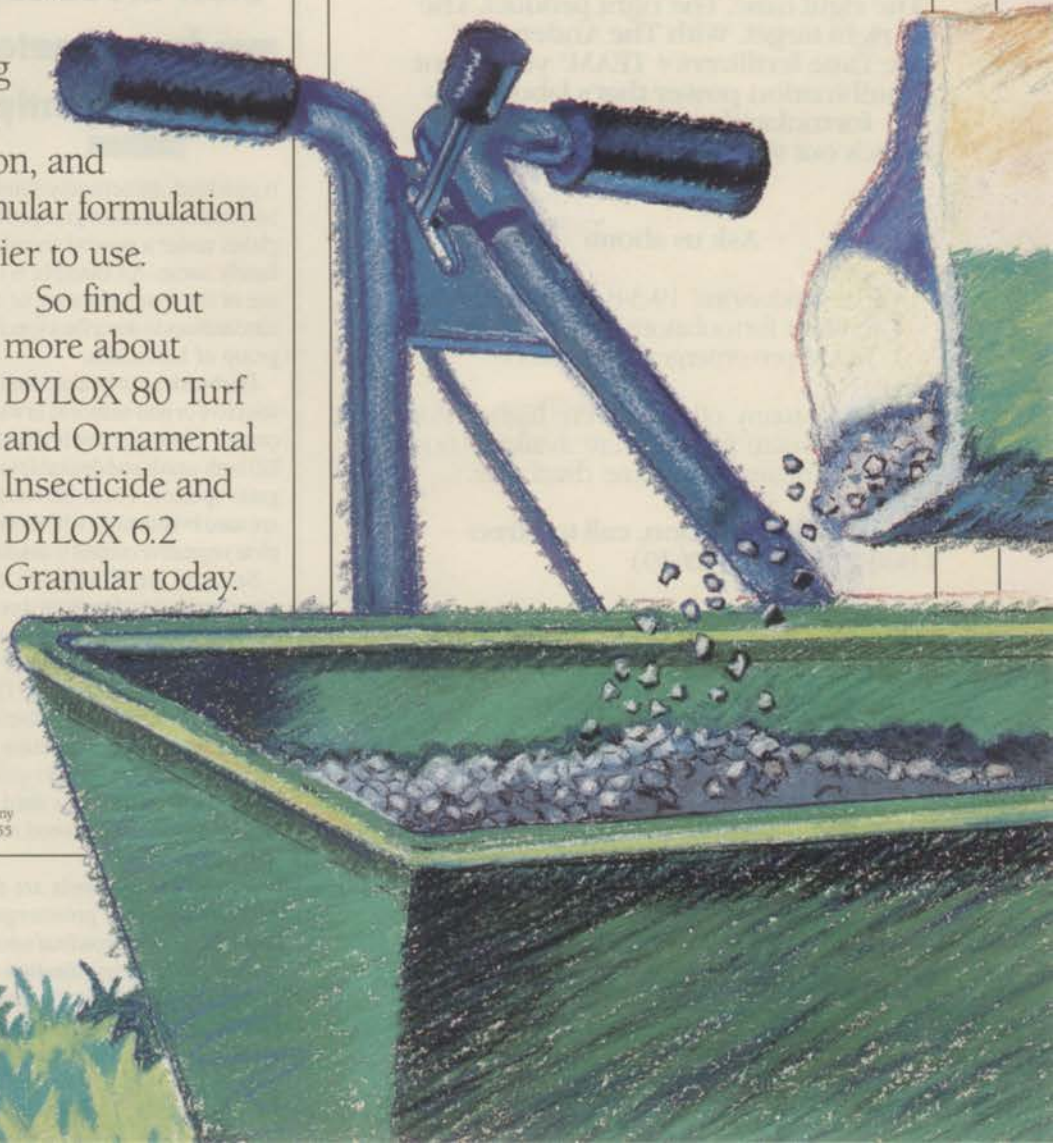


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Herbicide Complexities

(continued from page 76)

Environmental factors influence herbicide uptake and the amount present as previously mentioned. Environmental conditions can make a tolerant species susceptible. For example, mecoprop (MCP) is tolerant on bentgrass except under high temperatures which makes the bentgrass susceptible to the herbicide.

Evaluation of conditions which the weed and desirable plant are growing under will help determine which herbicide to use, its effectiveness and safety.

CLASSIFICATION OF HERBICIDES.

The major herbicides used on turf are classified according to their chemical family, selectivity, timing of application and mode of action.

In Table 1 a description of herbicides used on major turfgrasses

Most broadleaf weeds are treated postemergently.

is provided. Structurally similar herbicides are often grouped together under a general chemical family name. An example is the use of the terms phenoxy or dinitroanilines to describe a specific group of herbicides.

Herbicides can be described as selective or non-selective in weed control. Non-selective herbicides kill both weeds and desirable turfgrass species. These herbicides are used in situations where complete vegetative control is desired.

Selective herbicides, on the other hand, interfere with weeds but do not harm desirable plants.

Herbicides are described as either pre- or postemergents. This refers to when the herbicide should be applied in relation to the stage of weed germination. Preemergent herbicides need to be applied before the weed seed germinates.

Annual grassy weeds are the primary target of preemergent herbicides. Most broadleaf weeds are treated after germination — postemergently. A notable exception is isoxaben which control broadleaf weeds before they germinate.

HERBICIDE MODE OF ACTION. A chemical's mode of action whether it is a herbicide, fungicide or insecticide, is a means of defining the mechanism by which a chemical interferes with plant functions resulting in death.

A herbicide can be classified as either a contact or a systemic. Contact herbicides work quickly by disrupting cell membranes. Contacts do not translocate through the plant and are used only postemergently. Since translocation does not occur, adequate coverage is necessary.

Systemic herbicides are capable of being translocated through the plant. Systemic herbicides are further classified to their specific mode of action. Hormone-like herbicides are plant growth regulators that mimic naturally occurring hormones, but at a level that is toxic to the plant.

These types of herbicides are highly mobile in the plant, having the ability to move to shoots, roots and vegetative organs. These herbicides are primarily used on broadleaf weeds. Phenoxy are a major group of hormone-like herbicides.

Meristematic inhibitors are herbicides that prevent normal growth and development of newly forming plant tissues. Meristems are regions of active cell division in plants which are located in both the shoot and root.

Herbicides that are meristematic inhibitors can be further described as either being root or shoot inhibitors while other herbicides interfere with both. The dinitroanilines are a group of herbicides that are meristematic inhibitors.

Photosynthetic inhibitors interfere with a plant's ability to convert sunlight into energy for plant growth. These types of herbicides are primarily toxic to broadleaf weeds. Photosynthetic inhibiting herbicides move upward from the site of absorption. The triazine herbicides are photosynthetic inhibitors.

Pigment inhibitors do not directly interfere with photosynthesis, but inhibit production of certain plant pigments that are important in photosynthesis. Often plants will appear white. ■

The author is an associate professor in the Department of Agronomy, The Ohio State University, Columbus, Ohio.

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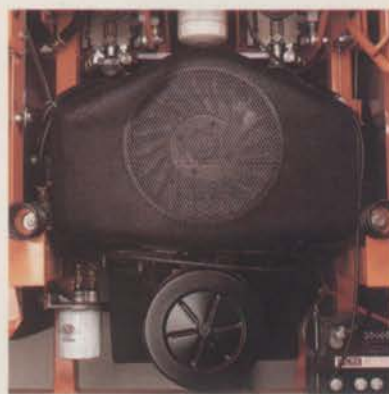
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Focus on Seeding

New Varieties Result In Minimum Clippings

PENNINGTON SEED, Madison, Ga., has jumped aboard the environmental bandwagon with two new low-growing turf-grasses that produce minimum clippings.

Yet, their deeper root systems mean that once they are established, these grasses need no watering or irrigation in addition to naturally occurring precipitation, according to company officials.

In cases of drought, the turfgrasses go into a dormancy mode until new rainfall brings a new growth cycle.

The first low-moisture turf, Cheyenne, is a compact, warm-season, cold-tolerant bermudagrass developed in cooperation with Jacklin Seed Co. and Pennington affiliate Cactus Seed Co. of Roll, Ariz.

The dense turf can be planted from seed to form a sod in six weeks without the cost of buying sod.

According to Kevin Smith, Pennington manager of advertising and promotions,

"It greens a lot earlier and stays green a lot longer than the regular bermudas," and it is more drought tolerant than any fescue.

It will begin being sold this spring through all Pennington distributors in 14 states in the Southeast and Midwest, and is expected to be sold as far north as Virginia and the lower Midwest, with sales especially strong in Florida, Georgia, Mississippi, Louisiana and South Carolina.

"So far, our demand is greater than our production," Smith said. "We expect a sell-out by the end of the season, and we plan to plant more next year."

Another low-moisture, low-growing turf is Enviro-Blend, formerly called Compac. The dwarf blend was developed from tall fescue parentage especially for areas with 15 to 45 inches of yearly rainfall. There are stands of tall fescue planted in cemeteries, public parks, roadsides and some lawns that have been in existence more than 30 years with no watering or irrigation.

According to Smith, the new breed produces less top growth with the same amount of root growth to increase drought resistance. The product is also being touted as having improved color and disease resistance.

Enviro-Blend, available this fall, is so new, Smith said, that "we've had no time to promote it, we will sell as we go, relying on our salesforce in our major Midwestern and Southeastern markets."

The two new grasses meet all requirements of legislation pertaining to water use, according to Pennington, as they require no additional water beyond naturally occurring water.

As a result, they will replace the need in many instances for xeriscaping techniques now being promoted to reduce grass areas and, like other grasses, help reduce carbon dioxide emissions, mitigate the heat island effect and reduce energy consumption, consequently contributing to efforts to reduce global warming.

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People

RICHARD MILLER is the new president of Jacobsen division of Textron.

Previously, Miller was vice president and general manager of Combat Vehicle Operations for Cadillac Gage division of Textron. He brings to the firm an extensive background in finance and administration.

Miller replaces Robert Reid who is now president of Textron's Homelite division.

Steven Hoveln is Hunter Industries' new district manager for Florida, representing professional series sprinklers for residential turf and landscape, and the institutional series for sports fields, parks and public areas.

He works with irrigation specifiers and consultants, landscape architects and contractors, distributors and municipalities. Previously he was East Coast technical services representative.

On the other side of the country, **Derick Wright** is Hunter's district manager for Northern California and northern and central Nevada.



Hoveln



Ellis

He, too, represents both the professional and institutional series. Previously he handled sales and marketing for Southern California and has more than 10 years' experience in the irrigation industry.

At Briggs & Stratton, **John Shiely** has been promoted to vice president and general counsel. He joined the company in 1986 as general counsel.

In addition to his legal duties, he now oversees corporate planning and development functions as well as corporate purchasing and information services.

In another move at Briggs & Stratton,

Jim Ellis is Aquatrols' new technical sales representative, bringing more than 15 years of sales experience with him.

Working with Aquatrols distributors and horticulture and turf professionals, Ellis' territory includes the South Central and Southwestern states and California.

ISK Biotech — formerly Fermenta ASC — has made several personnel changes and additions. Among them:

Andrew Wenner has joined the company as a sales representative. His duties include marketing and sales in south central Texas.

Andrew Murdock has been named senior sales supervisor. He will be responsible for the South Carolina and east Georgia territory. Most recently he was Northern distributor/technical sales supervisor.

Doug Goudy is now research and development manager. He will oversee research, regulatory and commercial development activities in Canada. Most recently Goudy was responsible for sales and commercial development in Canada. ■

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The product is good for reducing, shredding and composting. It can process all yard waste, branches, twigs, grass clippings and leaves.

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shredding rotor. Materials are shredded and then exhausted through guide plates onto a conveyor or directly into a windrow.
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DMC Weed Control, new from **O.M. Scott & Sons Co.**, effectively controls bahiagrass in bermudagrass areas. The herbicide acts upon the annual grassy weed as it sprouts.

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In addition to controlling bahiagrass, it also fights foxtail and more than 25 broad-leaf weeds including chickweed, henbit, dandelion, wild garlic, white clover and plantain.

DMC offers application timing and rate flexibility depending on the weed and turf type. Combined with water, the 60 percent dispersible granular herbicide is applied as a foliar spray.

Circle 126 on reader service card

The Mini-IV tree injector from **Medi-Ject** is an efficient method of applying necessary nutrients to small trees under stressful conditions.

Trees forced to grow in nursery pots at shopping malls or on city streets often do not have enough soil to provide adequate amounts of nutrients to the plant.

This injector is designed to supply nutrients to stressed trees caused by poor soil or environmental conditions or lack of available rooting area.

The injection site is shallow. Nutrients move up quickly as the plant absorbs the solutions.

The 30-10-10 fertilizer solution need only be applied every two years under these growing conditions.

Circle 127 on reader service card

Raindial controllers from **Hardie Irrigation** are specifically designed to simplify use and installation. The new controller is available as two models, an outdoor or indoor model.

The outdoor model offers a nine- or 12-station controller with a rugged, lockable, weather resistant case. The indoor model offers a six-, nine- or 12-station controller complete with compact indoor case.

It has a take apart modular design permitting easy access to all wiring and valve terminals. The control module can easily be removed from the case allowing programming to take place anywhere as well as servicing and upgrading if necessary.

Three separate and independent programs



make for nine daily start times and full scheduling flexibility. The "skip days" interval schedule allows from one-day up to 15-day programmable watering day intervals.

One dial controls all the functions, making programming easy.

Circle 128 on reader service card

The articulator from **LasTec** provides the advantage of a rotary cut with the speed and grooming ability of a gang reel.

It rotary cuts up to 11 feet wide through difficult, rolling contours, valleys and bumps. This is accomplished with up to 7 independently floating 21-inch rotary decks powered by a tractor PTO shaft.

The articulator uses simple flex joints that allow each deck to float over the ground without scalping, gouging, stair-stepping or missing grass. The mower can wrap over a contour of more than 2 feet in a width of less than 10 feet.

Circle 129 on reader service card

Product Spotlight

EMBARK LITE, a plant growth regulator for fine turf, can be used as a foliar spray application on virtually all major species of turfgrass and most fine turf sites, including bluegrass, fescues, ryegrass and many others.

With the active ingredient mefluidide, it reduces the turf's growth rate, and thus the volume of clippings, by 50 percent, while inhibiting seedheads. Working through the leaves, as does standard **EMBARK 2S**, it moves to the growing point to disrupt cell division and stem elongation, while roots continue to grow.

For growth regulation, it is applied lightly, and activity is short — three to four weeks for most situations. Used as a mowing aid, it is applied at the peak growing period. Plus, once the growth regulation wears off, treated areas tend to stay greener longer, to help overcome discoloration problems.

It can also be tank-mixed with preemergent or broadleaf herbicides and fertilizers, as well as with **LIMIT** turf regulator for longer duration of control.

Circle 130 on reader service card

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A new blower for fanning leaves, sweeping drives and paths and clearing light snow is now available from **Husqvarna Forest & Garden Co.**

Husqvarna Model 132HBV is driven by a 1.9-cubic inch 32 cc two-stroke engine that features a chrome-plated cylinder for longer life.

The new blower generates a maximum power at less than 70 decibels of noise.

Anti-vibration handles make it comfortable to use, while its controls are conveniently grouped for easy starting and operating.

A handle-mounted throttle trigger allows for variable air flow or can be locked in the full throttle position.

The convenient rocker-style on/off switch ensures that the blower is easy to start.

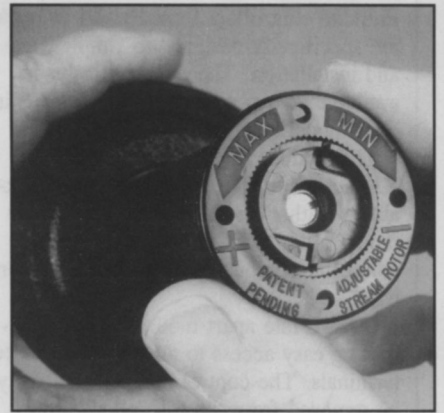
Front exhaust allows the blower to be operated with either hand; fumes and engine noise are directed away from the operator.

For increased versatility, the model also features a vacuum and optional gutter attachment.

Circle 131 on reader service card

With the addition of an adjustable nozzle for **Toro's Stream Rotor**,[®] specifiers and contractors can enjoy virtually unlimited design flexibility in 16- to 30-foot ranges.

The adjustable nozzle fits all bodies and allows the radius of the stream rotor to be infinitely adjusted from 16 to 30 feet with-



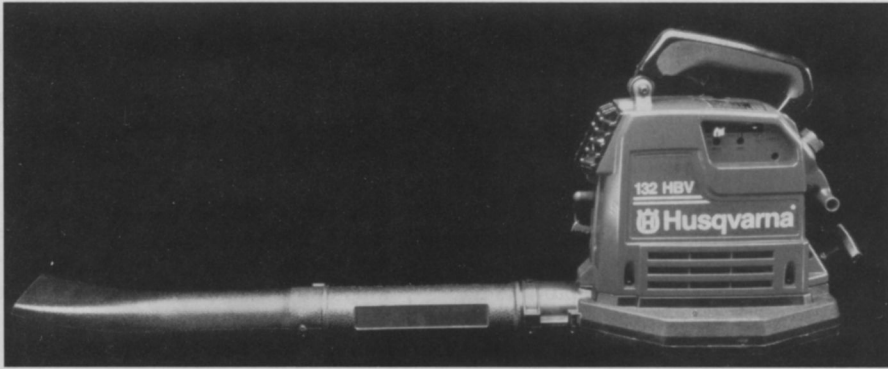
out changing nozzles.

The Stream Rotor[®] provides low precipitation rates to avoid runoff on sloped areas, and offers flexibility in spray-pattern control through nine interchangeable stainless steel Arc Discs.[™]

Circle 132 on reader service card

Two new earth auger attachments for the **Melroe Co.'s Bobcat**[®] loaders are made from a knuckle-joint style of linkage making it easy to position the auger with plumb-line accuracy.

The Bobcat auger is available in two models — Model 12 for standard applica-



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tions and Model 18 for tougher digging applications that require higher torque.

Model 12 is designed to fit the 500 through 800 Series Bobcat skid-steer loaders, as well as the 1600 and 2410 articulated loaders. Model 18 is designed for use on the 843 skid-steer and the 1600 and 2410 articulated loaders.

Auger bits range from six to 30 inches in diameter, with a digging depth of more than four feet. Optional 14- and 24-inch auger extensions are also available. Special tree planting augers are available in sizes from 18 to 36 inches in diameter.

Circle 133 on reader service card

The I-40-ADS adjustable arc sprinkler from **Hunter Industries** is available for sports field designs, parks and other large turf areas.

The sprinkler may be set at any arc between 40- and 360-degrees while the water is on or off.

For installations that require full circle coverage, Hunter's sprinkler is available as model I-40-36S — a fixed 360-degree circle.



Both models are supplied with five interchangeable nozzles to vary the discharge rates and the radius. The discharge rate may be adjusted from 7 GPM to 25.3 GPM and the radius may be varied from 45 feet to 67 feet.

The system includes safety-cushioned rubber covers and reliable stainless steel risers. Vandal resistant features include a

small 1 5/8-inch exposed surface diameter and heavy-duty retraction spray.

Circle 134 on reader service card

Exclusive two-pedal hydrostatic control makes the new **John Deere** lawn tractors easy to control while keeping both hands on the steering wheel and both eyes on the mowing job.

The LX 178 features a 15-h.p. liquid-cooled v-twin-cylinder engine. It's powered by an overhead valve Deere K-Series engine with full-pressure lube and oil filter.

Other models in the line include a 14-h.p. air-cooled tractor with a five-speed gear transmission and 38-inch mower, a 14-h.p. air-cooled model with hydrostatic transmission and a 17-h.p. air-cooled hydrostatic tractor teamed with a new 48-inch mower. All four models feature a 20-inch turning radius.

Additionally, all models are powered by the K-Series overhead valve engines with full-pressure lubrication and oil filters for long engine life.

Circle 135 on reader service card ■



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reader service **48**

Calendar

APRIL 8 & 10

Principles of Integrated Pest Management, sponsored by the Center for Urban Horticulture, University of Washington, Seattle, Wash., 7 to 9 p.m. Fee is \$15. Pre-registration is required. Contact: Dave Stockdale, 206/685-8033.

APRIL 9 & 11

Major Tree and Shrub Diseases, Sponsored by the Center for Urban Horticulture, University of Washington, Seattle, Wash., 7 to 9 p.m. Fee is \$20. Pre-registration required. Contact: Dave Stockdale, 206/685-8033.

APRIL 18-19

Green Tech '91, Long Beach, Calif. Contact: California Landscape Contractors Association, 2021 N St., Sacramento, Calif. 95814; 916/448-2522.

MAY 4-7

12th Annual Menninger Sunbelt Tree Conference, Palm Beach County Cooperative Extension Offices, West Palm Beach, Fla. Contact: MSTC, P.O. Box 6524, Clearwater, Fla. 34618; 813/446-3356.

MAY 7, 11 & 18

Deciduous Shrub Identification, sponsored by the Center for Urban Horticulture, University of Washington, Seattle, Wash., May 7, 7 to 9 p.m., and May 11 & 18, 9 a.m. to noon. Fee is \$27. Pre-registration required. Contact: Dave Stockdale, 206/685-8033.

MAY 15

North Carolina Turf and Landscape Field Day, North Carolina State University Turf Field Center and Arboretum, Raleigh, N.C. Contact: Joe DiPaolo, P.O. Box 7620, NCSU, Raleigh, N.C. 27695-7620; 919/737-3666.

MAY 18-21

The 58th Annual Conference and Trade Show sponsored by the Western Chapter of the International Arboriculture, Red Lion Hotel, Modesto, Calif. Contact: Derald Weaver, 209/529-3177.

JUNE 6-9

Florida Nurserymen and Growers Association Annual Meeting, Buena Vista Palace, Orlando, Fla. Contact: Earl Wells, executive vice president, Florida Nurserymen and Growers Association, 5401 Kirkman Road, Suite 650, Orlando, Fla. 32819; 407/345-8137.

JULY 12-16

American Association of Nurserymen Annual Convention and Nursery Industry Trade Show, The Dolphin, Orlando, Fla. Contact: Kevin Morales, AAN, 1250 I Street NW, Suite 500, Washington, D.C. 20005; 202/789-2900.

JULY 28-30

International Lawn, Garden and Power Equipment Expo, Kentucky Fair and Exposition Center, Louisville, Ky. Contact: Expo 91, 6100 Dutchmans Lane, Sixth Floor, Louisville, Ky. 40205; 800/558-8767 or 502/473-1992.

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Landscape Restrictions

(continued from page 60)

are low maintenance and work well under water pressure.

McGuire offers other water-saving ideas. Avoiding lawns on slopes and narrow mowing strips; installing state-of-the-art irrigation equipment such as moisture sensors, multiple program controllers and low gal-lonage sprinkler heads; aerating the soil and switching to tall fescue, Bermudagrass or one of the more recently developed low-water use varieties suitable for California, are among her tips.

The American Sod Producers Association lists among the advantages of turf its conversion of carbon dioxide to oxygen and its cooling effect on the microclimate.

Whatever the type of planting used in a landscape project, proper watering is vital.

California recently suspended delivery of water to farms in its Central Valley region. On top of that, federal officials said farmers will receive just one-third of their normal water deliveries.

The City of Los Angeles voted to approve a rationing measure aimed at cutting local use. The entire Southern California area has been suffering a four-year drought, and

rainfall this winter was less than one-third normal levels.

Florida's three main water management districts — South Florida, Southwest Florida and St. Johns — all have instituted Phase I water bans.

Aiello said his immediate area, Jupiter, Fla., is still under restriction, although good rains in late January and early February have eased the immediate pressure across much of the state. But high population growth and saltwater intrusion will combine to assure renewal of restrictions in the near future, he predicted.

In Colorado's vital South Platte basin, snowpack was at 69 percent of normal in early February, better than California, but still low. Last year, that area was saved by unexpected rainfall in June and July.

Still, Denver maintains a landscaping irrigation program aimed at both household and larger users.

Denver's water program relies on three shapes: diamond, square and circle. Homes with addresses ending in 0 to 30 are diamonds, 31 to 60 are squares, 61 to 99 are circles.

A colorful calendar was distributed with water bills and through water distributors to give homeowners a visual cue of when to water lawns according to the shapes. Lawns, therefore, are watered once every three days.

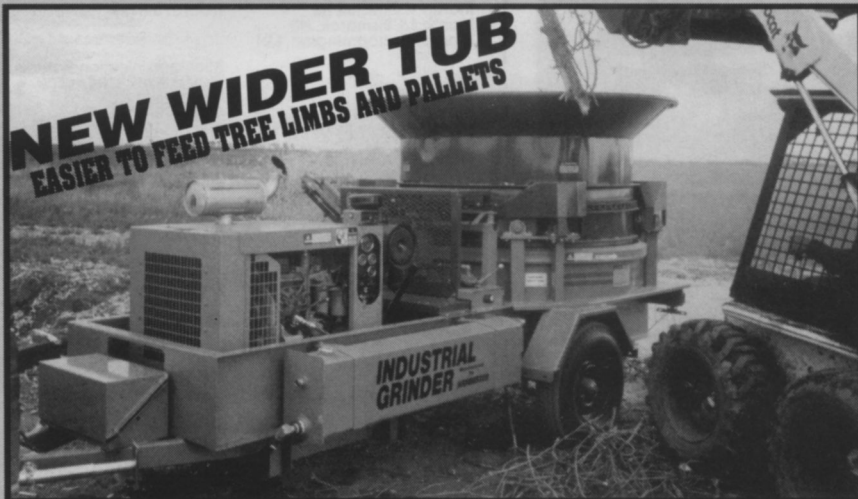
The evening news often includes watering dates and times. Some broadcasts include evapo-transpiration readings for various areas of the city, and information is provided on when natural rainfall is sufficient to replace watering.

AMWUA recommends good planning and design with conservation and landscape function in mind as the first steps in reducing water demand.

Limited turf areas, efficient irrigation, use of soil improvements for better water absorption and water holding, use of mulches to reduce evaporation, landscaping with low water-requiring plants and appropriate maintenance round out the Arizona program.

AMWUA has a landscape design and planting guide available. Although intended for homeowners, the color booklet has solid information on planting guidelines, an abbreviated plant list and an example of turf conservation that would make it worthwhile for the professional. ■

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



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Recession

(continued from page 65)

renewal marketing — there are a potpourri of items which can be tackled next. These items are all focused toward maintaining consistency in your management style and operating more efficiently.

PRICING AND BIDDING. An industry analysis a while back established that 27 percent of all jobs were bid at a loss. This means that the job was a loser before the first piece of equipment touched the ground. In tough times, this survey percentage is only exacerbated.

Develop your pricing strategy around what it costs you to perform work. Throw away the industry myths of pricing jobs as a multiple of material or by forcing a gross margin. They do not work and are guaranteed to lose money. Use your own budget to strike the relationship between overhead cost and job cost, and price your work accordingly.

Know your breakeven point on every job before you bid it. This is an extraordinary weapon in tough times.

Never bid a job at a loss without a profit motive. Also, never bid work to maintain cash flow or to keep the crews working. It only digs the hole deeper. However, bidding thin is a legitimate strategy if doing so provides an opportunity for additional work at reasonable prices.

In a tight market, the commandment in bidding is to know your costs, carry as lean an overhead as is practical, and be patient.

OVERHEAD. Overhead says more about your standard of living than any other single item. In good times it is natural for the girth of your company to swell. People are added for convenience functions, and monies are spent more easily on items supporting the enjoyment of life. In bad times, this attitude can be fatal.

Inventory your organizational structure. Are your people in the right jobs? Are they maximizing their time for the benefit of the company? Can jobs be combined, particularly if revenues flatten or fall slightly; and can certain job functions be eliminated?

Review each overhead account in detail. Make sure there is no frivolous spending anywhere. Identify where the management perquisites are hiding and be prepared to adjust them should the need arise.

Review and reappraise the value to the company of its entire benefit packages. Start by analyzing your insurance benefits — hospitalization, disability and life, then move to a review of your defined compensation plans, uniform policies, truck and automobile take-home and reimbursement policies, sick leave, holiday and vacation policies, overtime policies, club member-

ships, employee bonus practices which have lost their zip, entertainment reimbursements, etc.

For each, ask yourself if the company is receiving the maximum amount of mileage for the policy's being in place; and analyze whether the plans should be left alone, modified or simply eliminated.

Budget each overhead account for the coming year, in detail, and then assign the responsibility for monitoring that account's spending to one of your key managers.

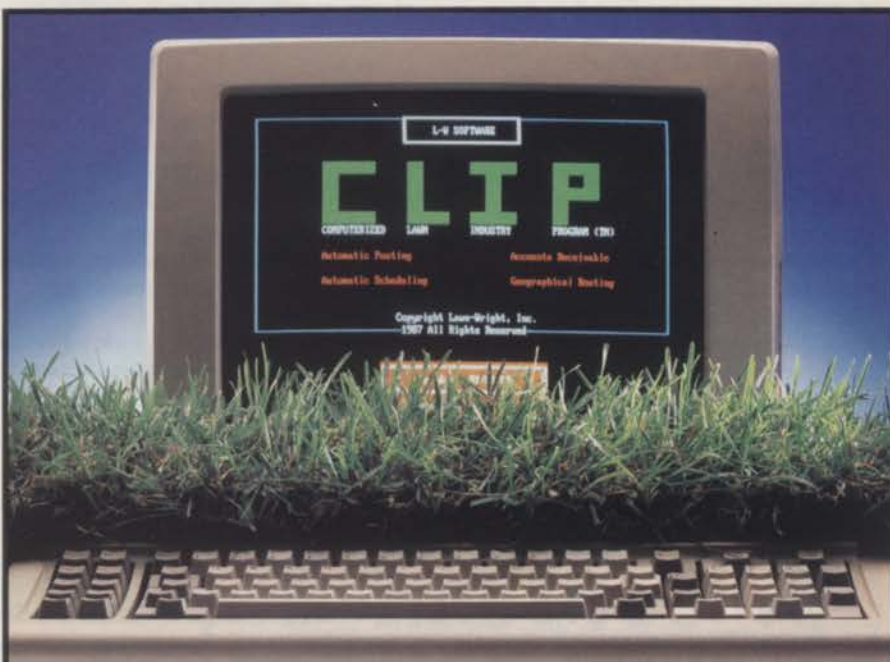
Produce an income statement each month which will show, among other information, actual monthly spending against budget.

ACCOUNTS RECEIVABLE. An efficiently run company should experience an accounts receivable turnaround of plus or minus 30 days from the time of billing to the time of collection. Here are some tips which will assist you in achieving that goal.

- Develop an internal process for determining whether a client is a good credit risk.

- Define the credit terms in your sales agreement succinctly, and train your salespeople so they'll be adept at explaining them.

- Invoice work promptly and accurately. No one will pay an invoice they have not received.



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- Create an aging schedule of accounts receivable and monitor it weekly.
- Create and enforce the collection procedures for past due performance.
- Understand your legal recourse if and when an account becomes uncollectable.

INVENTORY. Inventory is an area which, if not monitored closely, can become a huge black hole for cash.

Utopia would be a situation where no item is ever held for more than 90 days before it is sold. Should you have an item which exceeds this barometer, understand that it may well cost you more in maintenance and handling than the revenue you generate from its sale. Here are some hints which may help.

- Calculate the turnaround time for every material unit you purchase and only stock those items which turn rapidly.
- Do not over-order a product to fill out a load; generally, the overage turns into garbage.
- Encourage your suppliers to stockpile material for you until you need it. The fees you might pay for this service typically are far less than the cost you incur to receive and care for goods prematurely.
- Have suppliers ship materials directly

to their job sites where practical.

FIXED ASSETS. Don't be a collector. Monies invested in fixed assets, i.e., land, facilities and equipment, take cash out of circulation. It only makes sense to invest in these items if they can generate an immediate income stream.

- Evaluate every fixed asset you have. Any asset which does not provide you the equivalent of a liquid return on investment should be a candidate for sale. Do not assume that the appreciation of a fixed asset offsets the opportunity you lose by having your money tied-up. It does not. Fixed asset appreciation will always fall short of earning what liquid cash would if invested in the daily operations of your company.

- Pay close attention to your equipment. We all seem to attract equipment like orphans and, once pieces are obtained, they are impossible to get rid of. As a rule of thumb, unless you are realizing at least 500 hours of good production time from a piece of equipment, it is probably better to sell it now and rent a comparable piece when you need it.

- Check out whether it is more opportune for you to lease your highly used pieces of equipment rather than to buy. In the long run, leasing will always cost more, but it

offers an advantage of not having a heavy outlay of cash in the front end. This single fact may be ample to offset the overall cost differential between leasing and buying.

ACCOUNTS PAYABLE. Your suppliers can be some of your best allies in times of a cash crunch, so do not take advantage of their good faith. Treat them as you would wish to be treated by your customers.

- Always monitor supplier balances via an aging schedule of accounts payable.
- Ask for terms from suppliers. Most do not realize that, from the standpoint of the time value of money, "2/10 net 30" really means that "I'll give you an annualized discount of 36 percent if you pay me 20 days quicker than normal." If you feel bullish, ask for 5/10 net 30." That's a whopping 91 percent annualized discount.
- If you run into cash flow problems, you may not be able to pay the whole bill, but make sure every vendor gets something every month.
- Make sure you are in constant communication with the suppliers you are unable to pay promptly. Non-payment will make any vendor uneasy, but non-communication will always make them mad. ■

The author is a partner in Ross-Payne & Associates, Barrington, Ill.

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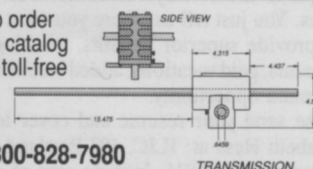
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Service Routes

(continued from page 54)

stallation — on separate routes. But because the firm emphasizes a full-service philosophy, specialists are incorporated into normal route visits.

"The idea is that one person is accountable for each customer," Davitt said, "so if a job supervisor needs a spray truck, he's got to requisition it from our applications department. Then the supervisor is responsible for seeing that the work gets done. That way nobody can point fingers and pass any blame."

At Real Green Professional Services, Kucik serves both commercial and residential customers. Because the firm offers a variety of services — from hydroseeding and snowplowing to grading and fertilizing — he chooses to maintain separate routes for each.

Using software and hardware developed internally, Kucik sequences routes by map coordinates, thus sorting customers by geography. For his three trucks, Kucik sets daily goals of square feet covered per day — then schedules 120 percent of that goal.

"By scheduling 20 percent above the daily goal, that builds in leeway for rain dates, vehicle breakdowns and other delays," Kucik said. His crews work five days per week, leaving a sixth day available when needed.

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

Chippers

(continued from page 46)

standard size engine comes with a 12-foot hose attachment; the industrial/commercial, a 15-foot hose attachment.

Royer Industries, based in Kingston, Pa., makes diesel-powered shredding machines that do not use flails and are capable of shredding composted material with 40 percent moisture content. The company did not wish to reveal prices.

The three Royer models best suited for landscapers have hopper capacity of 9 cubic yards, 4.4 cubic yards and 2.34 cubic yards.

Charles Pugh, customer service representative, said the Royer shredders do not have screens like the hammer mill shredders, which have the problem of getting blocked or "blinded."

Manufacturers face an interested, but somewhat skeptical commercial market. The cost, which ranges from \$1,100 to \$6,000 for most available units, is too steep for many firms. In addition, contractors are concerned about liability.

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

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