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*ALSO IN THIS ISSUE:  
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Cover Photo:  
Robert Rose, Bellevue, Wash.



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## Editor's Focus

AS A REPORTER by training and a journalist at heart, I find recent coverage of lawn pesticides in the consumer press not only incredible but appalling.

Anyone with a shred of decency or commitment to presenting balanced news coverage could not honestly, nor ethically, report such travesties as "The Pesticide Scandal" in *Family Circle* magazine and "Lethal Lawns" reported by *The Today Show*.

At least Ted Koppel, host of *Nightline*, restored some of my faith in the integrity of today's journalists. Without endorsing or condemning the use of pesticides, Koppel skillfully questioned the statements made by the three gentlemen appearing on the show — Roger Yeary of ChemLawn; Victor Kimm of the EPA; and Jay Feldman of NCAMP — leaving it up to individual viewers to decide how they feel about pesticides.

The Senate subcommittee hearings presented another example of how the deck is stacked against the lawn maintenance industry. A quasi carnival atmosphere is not the forum to intelligently discuss the benefits and purposes of specialty chemicals.

Despite these injustices, those speaking on behalf of the continued use of pesticides have learned to work within the constraints of Washington, and have visibly matured since the industry endured its first consumer assault in the mid-1980s.

This was readily apparent by the well-prepared testimonies of Ann McClure, executive vice president of the Professional Lawn Care Association of America, Allen James, executive director of the Responsible Industry for a Sound Environment and Warren Stickle, president of the Chemical Producers and Distributors Association, among others.

They waited patiently while alleged victims of pesticide poisoning told their stories. They endured the testimony of New York Attorney General Robert Abrams, and were forced to sit quietly through a presentation by Janette Sherman, a doctor of internal medicine. Sherman likened organophosphates to the family of chemicals used by Iraq and calls for limiting the intentional use of needless pesticides.

Sen. John Warner R-Va., gave the hearing some balance, urging that the general public not be frightened unduly. He also pointed out that the products in question are the same ones homeowners use.

Representatives working for reasonable notification and posting legislation should insist that homeowners be included. There's no reasonable explanation as to why this



group remains free from regulation.

If the statistics citing 64 million people perform their own lawn care while only 8 million hire lawn maintenance companies is true, it would be a miscarriage of justice to exclude the overwhelming majority from regulation.

The very fact that Sen. Joseph Lieberman D-Conn. would propose such a bill should be enough to shake up any professional conducting business in the lawn maintenance industry today. If passed as is, the bill would put many professional and some not so professional firms out of business.

Today, 23 states have passed some sort of notification legislation and 16 of the 23 states require some sort of posting. Six more states are said to be considering some sort of law and about seven states have established registries for chemically sensitive people.

In its testimony, PLCAA said, it supports the concept of advance notification of applications to people who are medically diagnosed as sensitive to certain lawn care products. If monitored and financed effectively, a registry might not be a bad thing, but the industry has to be careful not to legitimize "chemical sensitivity" — a term which hasn't been defined by the American Medical Association.

It's apparent that opponents and proponents of specialty chemicals will never see eye to eye. With that said, it's time to get past the basics of "us vs. them" and get down to business. The green industry is well positioned to influence reasonable and responsible legislation; something which we can all live with.

Don't let this opportunity slip by. —  
Cindy Code

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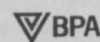
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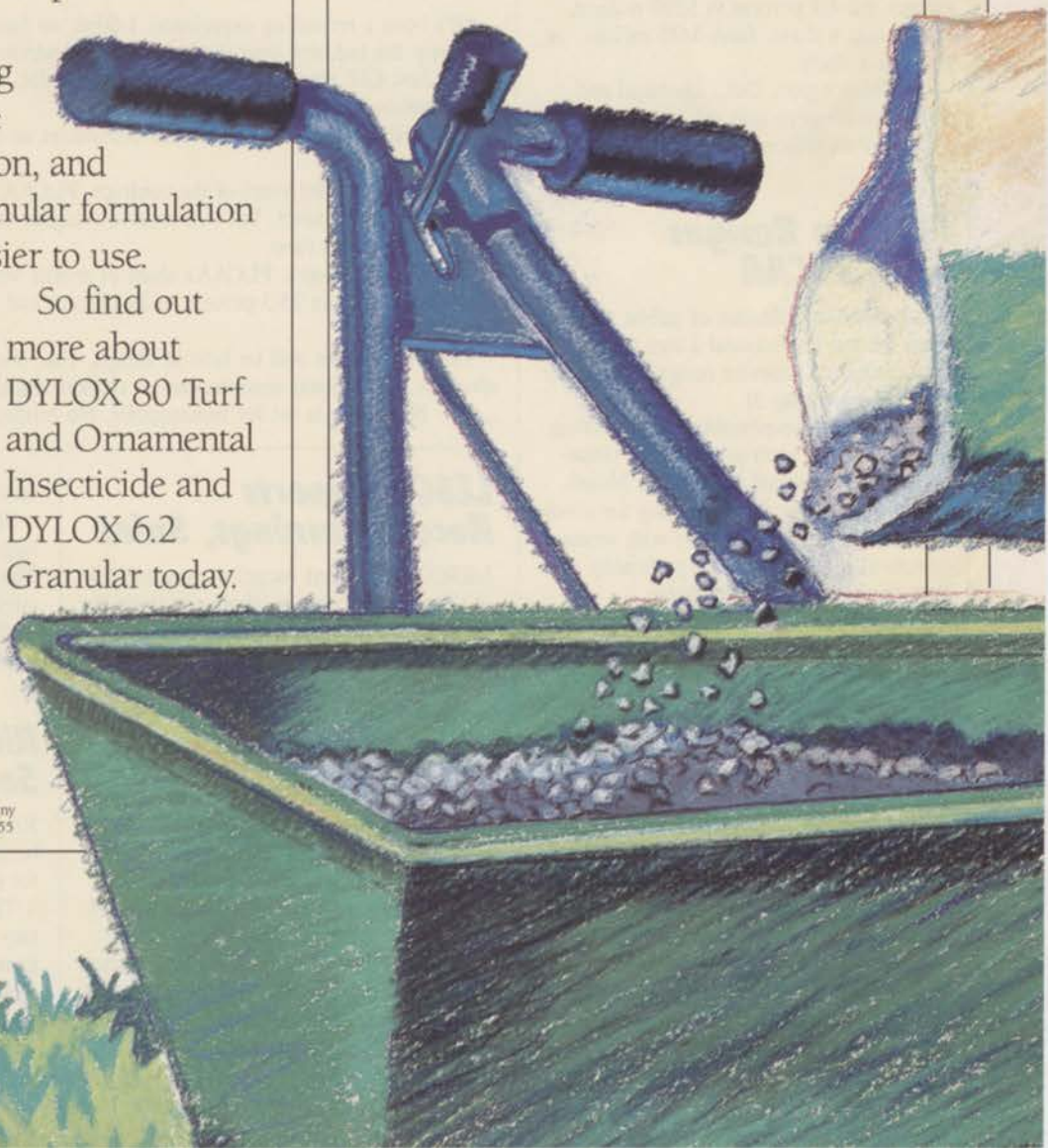
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## News in Brief

## NEWS DIGEST

**Greenhouse Production  
Tops in Oregon**

The nursery and greenhouse products sector of Oregon's agricultural base ranked No. 1 for 1990, totaling \$299.3 million, up from 1989's total of \$270.8 million.

Farm forest products, the 1989 leader, declined to second place with \$295.6 million in value of production. In addition, the top 10 Oregon crops totaled \$1.46 billion for 1990, 75 percent of the state's crop total, down 2 percent from 1989 levels.

**Du Pont Reports  
1st Quarter Loss**

Du Pont Co. reported that first quarter net income fell 4.1 percent to \$590 million, or 88 cents a share, from \$615 million, or 90 cents a share.

The Wilmington, Del., chemical and petroleum concern said sales rose 3 percent to \$9.68 billion from \$9.4 billion.

**Marting Resigns  
From PLCAA**

Sandy Marting, director of public relations for the Professional Lawn Care Association of America resigned from her post effective May 31.

Marting was responsible for promoting and developing such programs as Grass-cycling and National Lawn Care Month.

The PLCAA is now searching for a new communications coordinator with written communications skills and preferably with supporting technical knowledge.

**ServiceMaster Execs  
Named To Hall of Fame**

The three executives who pioneered and built The ServiceMaster Co. were inducted into the American National Business Hall of Fame.

The firm's founder, Marion Wade, and former CEOs Kenneth Hansen and Kenneth Wessner are being recognized for guiding the company to success by combining business acumen with high ethical standards and moral values, according to the hall of fame.

**GIE Extends Show Contract Through 1995**

THE GREEN INDUSTRY Expo, in the second year of a two-year contract, extended its agreement through 1995.

The Professional Lawn Care Association of America, the Associated Landscape Contractors of America and the Professional Grounds Management Society have agreed to keep the conference and trade show together for four years past the initial agreement.

The fourth year, 1995, could be considered a transition year should the three associations decide at that time not to extend the GIE contract. Although it's not likely, according to board members, an independent show management team would be brought in to run the show, giving all three associations an equal opportunity to plan separate shows for 1996.



Teddi Davis, PGMS, Bob Andrews, PLCAA and Tom Garber, ALCA, sign the new, four-year Green Industry Expo contract.

The PLCAA, which managed the first two shows, will continue to manage the show throughout the life of the contract.

The agreement follows several months of "spirited negotiations," according to Bob Andrews, PLCAA president-elect.

"It's been a rewarding experience. I think we have accomplished something here that will help the industry over the long-term," Andrews said.

The first GIE show, held last year in Nashville, virtually cemented the industry's desire for a continuation of the joint trade show.

"We have better access and better economies as a trio," said Tom Garber, ALCA president-elect.

As in the first two years of the contract, PLCAA will not receive a management fee under the new contract, but will receive a higher share of the show's gross profits to compensate for its time.

Over the four years, PLCAA's share of profits will go from 55 percent to 54 percent; ALCA's share from 25.3 percent to 24 percent and PGMS's share from 19.7 percent to 22 percent.

This year's show will be held in Tampa, Fla., Nov. 19-21 and will feature keynote speakers, educational sessions and an outdoor equipment demonstration.

The 1992 show is set for Indianapolis. No further sites have been selected.

**LESCO Reports  
Record Earnings, Sales**

LESCO announced record earnings of \$3 million, or 74 cents earnings per share for fiscal year 1990, more than doubling previous year earnings of \$1.4 million, or 35 cents earnings per share. Earnings also surpassed the previous record year, fiscal 1988, when net income was \$2.7 million or 67 cents per share.

The company also reported record sales of \$117.5 million, a 10.3 percent increase over 1989 sales. Sales increased in all product categories, except grass seed, which the company attributes to reduced market demand for seed in 1990.

Other categories include: turf protection products, combination fertilizer/protection products, turf care equipment, replacement parts and golf course accessories,

fertilizers and other products.

Sales and earnings in the fourth quarter lagged previous year fourth quarter figures. The company said this decline could be attributed to uncertainty in the economy, to the Gulf War crisis and an increase in transportation costs.

**Ringer Reports  
Second Quarter Loss**

Ringer Corp. reported a loss of \$774,000 or 11 cents per share, for its second quarter ended March 31.

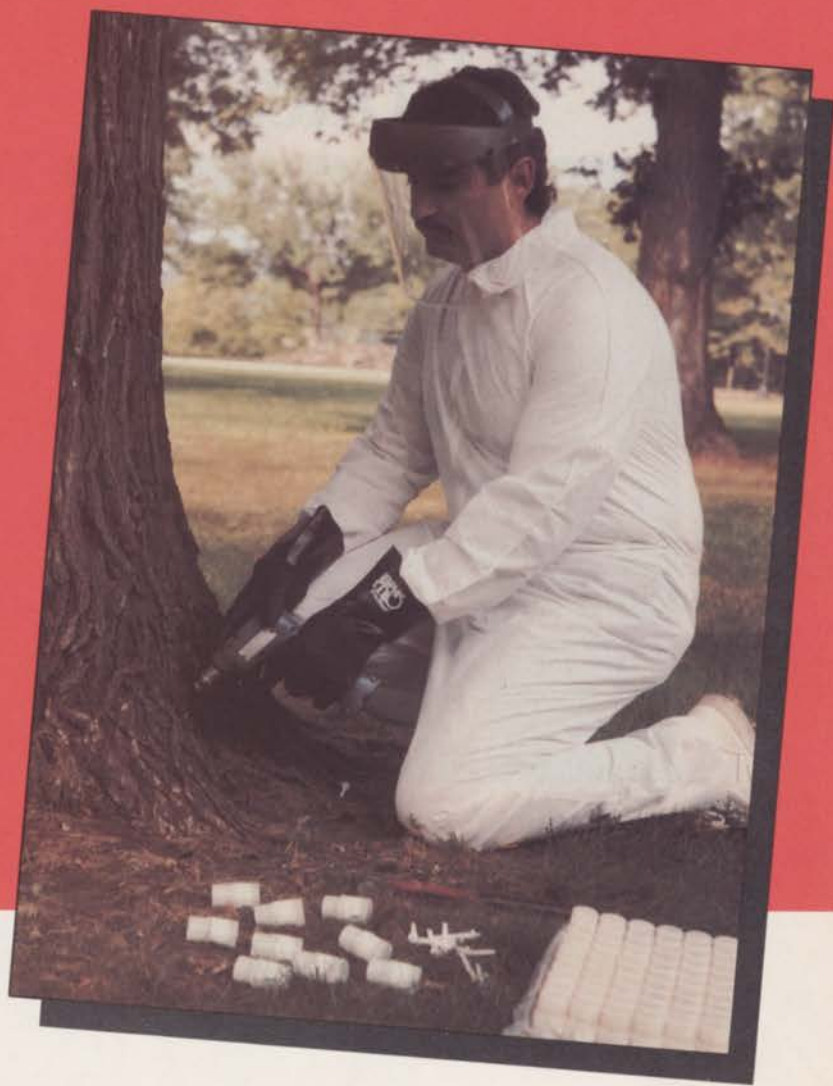
The loss was directly tied to the voluntary recall of Grub Attack, a product sold primarily in the Northeast.

A one-time charge of \$1.4 million was taken by the Minnesota firm, putting net

(continued on page 10)



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income into the red. The charge represents loss of sales, inventory write downs and refunds, according to Mark Robinow, Ringer vice president of finance.

Without the charge, Ringer would have earned \$674,000 or 10 cents per share. Stock in the firm has been publically traded for six months.

"It's not something we like to see, but Ringer is not in financial jeopardy," Robinow said. "It doesn't affect the rest of our product lines. We see a third strong quarter."

Grub Attack was withdrawn from the market in March because of inconsistencies between product field and laboratory data. The product recall is only on 1991 shipments and does not apply to materials previously distributed. The recall extends to retail distribution.

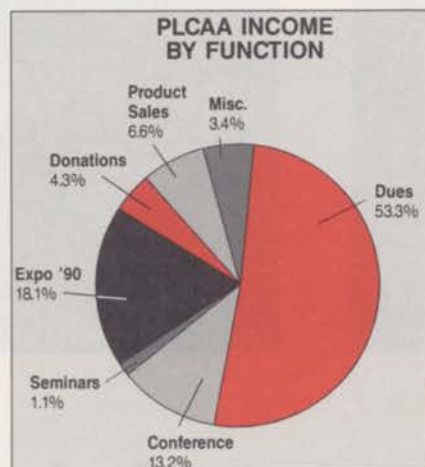
Although Ringer had hoped to reverse the situation for the 1991 season, the product isn't expected to return to the market this year, according to Scott Boutilier, Ringer commercial marketing director.

"Until we have the answer we won't market it," he said. "It's our responsibility to offer an effective product."

## Dues Adjustment Boosts Membership

A recent adjustment to PLCAA dues is already proving successful at boosting membership. The decision by the PLCAA board of directors to adjust dues rates in several membership categories was announced in February, and has already resulted in a membership increase of about 2 percent.

In another show of support, more than 10 percent of renewing PLCAA members



paid dues early this year, taking advantage of an early discount payment plan.

PLCAA membership included 978 companies in 1990, and the association membership committee hopes to add another 400 in 1991.

In other news, the association recently released its annual financial report to the membership for 1990. Among the findings: Total yearly expenses of \$904,502 slightly exceeded total revenues of \$896,428.

Dues provided the heaviest boost to revenues, accounting for \$477,685, or 53.3 percent of the total. Expo '90 and conferences and seminars also contributed significantly.

Among expenses, membership, administration, conferences and public relations accounted for nearly 66 percent of the total. Other expenses included legislative affairs, GIE Expo, education, leadership and general legal services.

## Wash-Off Data Surprises Pesticide Planners

It's not the intensity, but the volume of rain that counts when it comes to washing pesticides off plants. The first 10th of an

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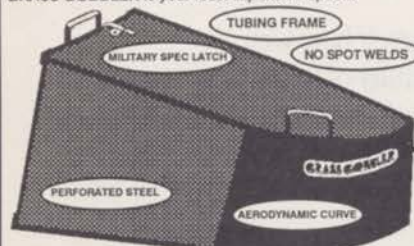
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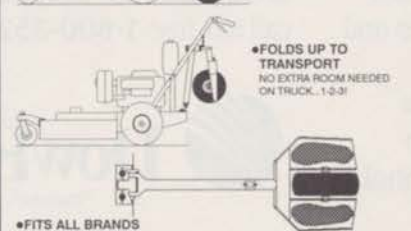


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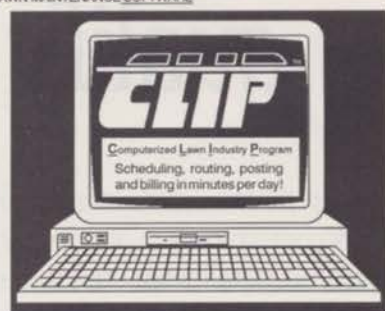
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## News

(continued from page 10)

inch of rain removes almost all of the pesticide that is going to wash off, regardless of how long it takes for that amount to fall, according to studies by Agricultural Research soil scientist Guye Willis.

"It doesn't matter whether it takes a minute or an hour — a heavy storm or a sprinkle — for a 10th of an inch of rain to fall, it's the volume that's the significant factor, not how hard the raindrops hit the leaves," said Willis, who works at the ARS Soil and Water Research Unit in Baton Rouge, La.

The studies, which were done in cooperation with the Water Quality and Ecology Research Unit at the USDA National Sedimentation Laboratory in Oxford, Miss., indicate that organochlorine pesticides are the least susceptible to being washed off by rainfall, while the more water-soluble chemicals are the most susceptible.

For example, 0.1 inch of rain will wash off about 50 percent of a water-soluble pesticide that was on the plant when the rain began, but only about 2 percent of the organochlorine pesticide, which has limited solubility in water.

Previous studies didn't consider which

is the significant factor in pesticide wash-off — the amount of rain, the size of raindrops or the energy with which they fall.

"But with the shift toward short-lived pesticides, their concentration in runoff will become more of a function of the chance of rainfall washoff," Willis said.

Knowing which is the significant factor will allow more precise laboratory and environmental chamber testing of pesticides for runoff possibilities.

## Movie Madness Strikes Environmental Theme

*Advertising Age* magazine recently asked readers to predict the next movie classic to be re-made with an environmental theme.

The first prize went to "Muntiny Over Bounty": Pro-green swabs overthrow their captain using non-recyclable paper towels.

Second place was awarded to "The Deer Hugger": Robert De Niro stars as a Vietnam veterinarian who returns to his Pennsylvania mill town as a militant animal rights activist.

Third prize went to "Goodbye, Mesquite Chips": A mild-mannered school-teacher takes on an army of suburban yuppie barbecuers and reduces air pollu-

tion by 15 percent.

Honorable mentions were awarded to "Citizen Stain": When the billionaire administrator of New York's largest landfill dies, reporters must decipher his mysterious last words, "Nose plug"; "Singing in the Acid Rain": Gene Kelly's umbrella disintegrates but not his fancy footwork; "The Unflushables": Elliott Ness puts the squeeze on Pampers; and "Ben Fur": Charlton Heston rides his Roman chariot around the globe, defending minks and bunnies from trappers.

We're not above stealing — uh, borrowing — another magazine's idea. So we're asking LLM readers to predict the next movie classic to be re-made with a lawn maintenance theme. Send in your suggestions to: Cindy Code, Editor, LLM, 4012 Bridge Ave., Cleveland, Ohio 44113. The best will be announced in a future issue.

## Wichita Firm Named Contractor of the Year

Nichols Lawn Service, Wichita, Kan., has been named the 1991 U.S. Small Business Administration's Region VII Prime Contractor of the Year for the states of Iowa, Kansas, Missouri and Nebraska. ■

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Model 48HL



Model 83/93

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## Association News



THE NEW YARD & Garden Remodeling kit from the **Garden Council** educates consumers about the importance of landscape remodeling. The kit has been remodeled and refocused with the help of its cosponsors, the **Associated Landscape Contractors of America** and the **National Landscape Association**.

Designed to increase business for the landscape industry, the kit can be personalized with any landscape business's name and address. It can be used for a direct mail campaign, advertised as an in-store giveaway, distributed to real estate agents for joint promotional purposes and delivered to prospective business clients.

The kit takes consumers through an interactive, five-step process that encourages them to: 1) determine the features they would like to see incorporated into their landscape; 2) determine how much they want to invest in the landscaping process; 3) identify what types of professional help they may need to get the job done; 4) ensure that their landscaping investment

### For More Information . . .

**ALHA**

2509 E. Thousand Oaks Blvd.,  
 Suite 109  
 Westlake Village, Calif. 91362  
 805/498-6916

**ASPA**

1855 Hicks Road  
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 708/705-9898

**NAA**

P.O. Box 1094  
 Amherst, N.H. 03031  
 603/673-3311

**GARDEN COUNCIL**

500 N. Michigan Ave.,  
 Suite 1400  
 Chicago, Ill. 60611  
 312/661-1700

**MID-AM**

1000 N. Rand Road,  
 Suite 214  
 Wauconda, Ill. 60084  
 708/526-2010

**ALCA**

405 N. Washington St.  
 Suite 104  
 Falls Church, Va. 22046  
 703/241-4004

grows through proper maintenance; and 5) initiate the landscaping process by sketching their property and then meeting with a landscaping contractor, architect, designer or garden center professional to discuss goals.

The kits are available to industry members in bundles of 100 for \$20. A 15 percent shipping and handling charge is added.

The **American Landscape Horticulture Association** is now offering its latest industry certification programs.

Certified Landscape Professional is a national level two-year program targeted to individuals above the technician level. The certification applies to — but is not limited to — supervisors, salespersons, designers, managers, landscape architects and contractors, nursery persons, horticulturists,

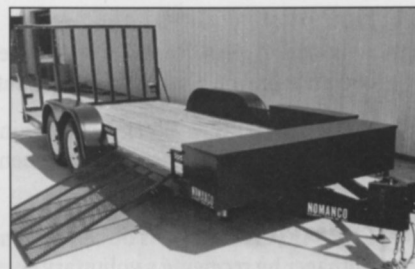
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arborists, interiorscapers and lawn care and pest control specialists.

Applicants must provide a biography of qualifications and experience. Classroom training, correspondence courses, educational programs, certificate programs, specialty certification or licensing, hands-on training and job experience will be accepted as qualifications.

Every two years, individuals renew certification through 80 hours of continuing education. Requirements include, but are not limited to, water management, pest control, sprinkler system design, business administration, time management and general education.

ALHA also offers two technician-level programs: Landscape Technician and Landscape Management Technician.

Members of the **American Sod Producers Association** will meet at the annual Summer Convention and Field Days in Portland, Ore., July 31 to Aug. 2. Convention headquarters are at the Red Lion/Lloyd Center in Portland and will house the educational programs and annual meeting.

Paul Jensen's J-B Instant Lawn farm in Silverton, Ore., will host live demonstrations and static displays, featuring sod farm equipment, products and technology.

This year, the static displays will be open both Wednesday, July 31 and Thursday, Aug. 1; and equipment demonstrations will be conducted exclusively on Aug. 1.

The following day, attendees will tour Tom DeArmond's Oregon Turf & Tree farm and Turf-Seed/Pure-Seed Testing's research operation, both in Hubbard, Ore.

The **Mid-America Horticultural Trade Show** recently elected officers and added two new directors to its board.

Richard Schwarz, of Schwarz Nursery & Garden Center, Addison, Ill., was re-elected president. Schwarz represents the Illinois Nurserymen's Association. Peter Grathoff, of Thornapple Landscape Maintenance, Geneva, Ill., was re-elected vice president. He represents the Illinois Landscape Contractors Association.

Elected secretary, William McDevitt of McDevitt Nursery, Dieterich, Ill., represents INA. Don Groth of Don Groth Landscaping, Greenfield, Wis., was elected treasurer. Groth represents the Wisconsin Landscape Federation.

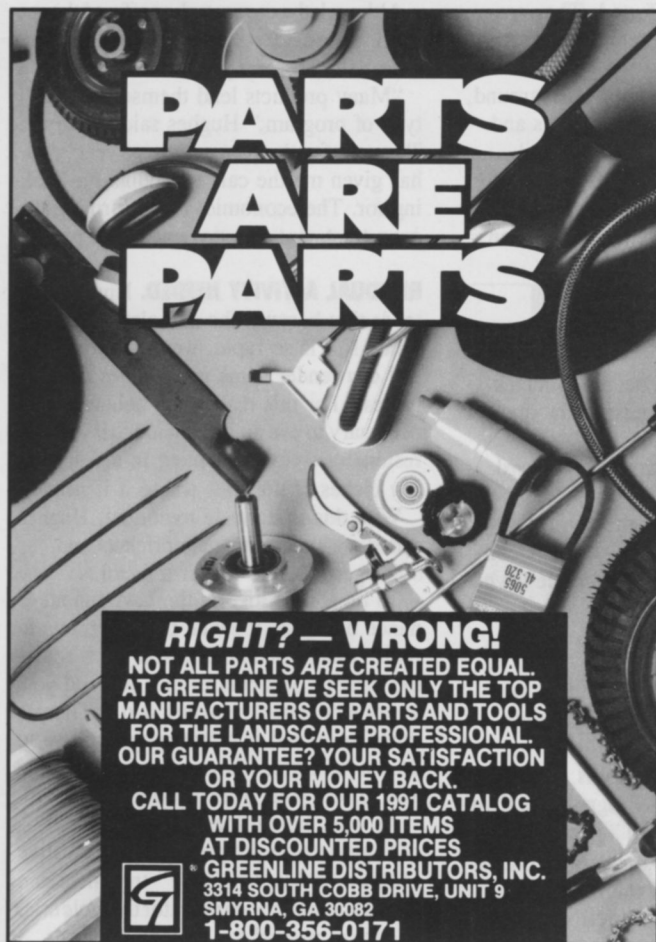
New directors include: Cheryl Muskus of C & J Landscaping, Addison, Ill., representing ILCA; and Thomas Hoerr, of Green View Companies, Dunlap, Ill., representing INA.

The **National Arborist Association** has established a new committee for tree care practices. The committee, designated A300, is designed to bring interested individuals and organizations together to develop consensus standards for the care and maintenance of shade trees. The A300 standard will provide practitioners, the public and government agencies with universally accepted standards.

Fifteen professional organizations participated in the committee's first meeting and elected Tim Johnson, president of Artistic Arborist, chairman; and Paul McFarland, president of McFarland Landscape Services, vice chairman. NAA is the secretariat for the committee.

Jerry Lankenau recently received a lifetime honorary membership from the **Associated Landscape Contractors of America**.

Lankenau, a 30-year industry member, is a past president of ALCA. Under his leadership, the first four-year degree program in landscape contracting was implemented. He has held other positions with the association, including secretary and vice president; and he served as legislative committee chairman from 1973 to 1990. ■

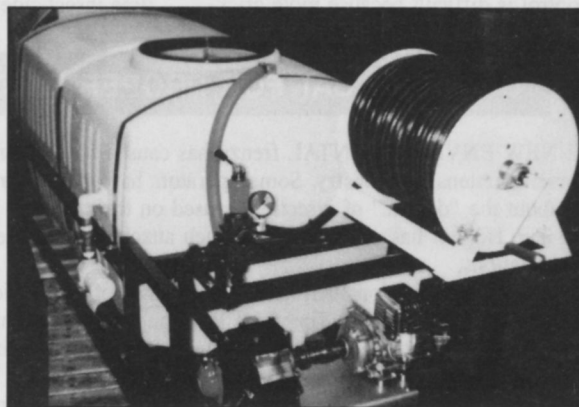


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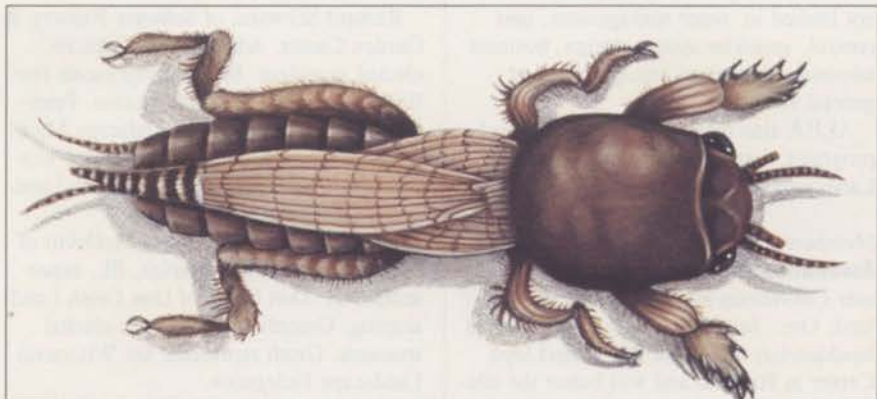
SOMETIMES YOU HAVE to go a step beyond to achieve the best lawns possible for your customers. That's why one Florida operator finds it important to integrate a special mole cricket control approach into his overall lawn care program.

"We have a routine lawn treatment we do every two months which includes the use of an insecticide and fertilizer," said Tim Hughes, manager of Tropicare Pest Control in Spring Hill, Fla. "But our approach becomes different because we do a specialty treatment for mole crickets sometime during the summer, between June and August."

This specialty treatment has proven invaluable because it hits mole crickets when they are just beginning to propagate, Hughes said. He added the mole cricket treatment to his existing six-application per year program.

**DAMAGE BEGINS IN JUNE.** In West Central Florida, mole crickets first begin to damage turf in June when they are in the nymphal stage, with visible signs appearing in August and destruction sometimes continuing well into November.

Control is difficult because mole crick-



Mole cricket control is exasperated by the insect's mobility.

ets have the ability to tunnel deep into the soil. Thus, a mole cricket population may be controlled in the upper six to 10 inches of a lawn, but mole crickets below that level will not be affected. They are very mobile in the soil, tunneling several feet in a few hours.

Spending most of their life underground, mole crickets consume root systems and tunnel to the upper few inches of soil. At night, they crawl to the surface and forage on grass plants, so it is critical to time insecticide applications correctly in

order to get effective control.

Since water attracts the insects toward the surface, applications are most effective after a rain or a thorough watering.

Although the company has offered the specialty mole cricket treatment for some time, it has taken several years to see the results.

"Many products lend themselves to this type of program," Hughes said. "I've used Tempo 2 for the past couple of years and it has given me the carcass counts I'm looking for. The economics of performing the extra treatment are apparent in our profits."

## GOING TO BAT FOR PROPER PESTICIDE USE

THE NEW ENVIRONMENTAL frenzy has caused many uninformed people to attack the lawn maintenance industry. Some operators have been barraged by customers' questions about the "danger" of insecticides used on their lawns.

But Tim Hughes has experienced no such attacks, partly due to his approach toward public relations.

To address any questions that exist in the minds of area residents, Hughes writes a monthly article called Lawn Tips for a local publication. In this article he educates consumers about a variety of topics, including pest control, fertilization, trends in the lawn maintenance industry and specific insects plaguing the area.

Not only is Hughes educating the public about lawn maintenance, but his company receives calls from readers who want to know more about his lawn service.

Products which require use of less active ingredients can help dispel public fear and demonstrate environmental friendliness. Responsibility on the part of the maintenance operator is the key to winning over a perceptive public.

"It's a big change in the industry because we are used to mixing high doses of chemical," Hughes said. "We have to retrain our applicators to use less active ingredients than they are used to. Going by the label provides more than adequate control."

Hughes said the benefits of using less active ingredient and achieving superior control go beyond introducing less chemical into the environment. The cost of the chemical for doing business lowers while the fee for the service remains at the same price. As a result, profit margins prove to be greater.

**RESIDUAL ACTIVITY NEEDED.** Hughes contends that because the percolation rate into sandy soil is so rapid, western Florida's soil can render some insecticides nearly useless. For this reason, he believes it is necessary to use an insecticide that has good residual activity, remaining in the upper few inches of the soil, where it is needed.

With this insecticide treatment, Hughes added, re-treats for mole crickets and other pests are no longer a factor.

To be competitive in the lawn maintenance business, it's vital that programs for mole crickets and other insect pests achieve the level of pest control that you and your customers expect, Hughes said. "The products integrated into that program have to do the job right. It's your name on the line. You expect your insecticide to be good."

As with most things in life, creativity can improve on the product. The creative addition of this "specialty" treatment can offer the maintenance operator the mole cricket control needed for customers' lawns. ■



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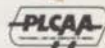
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reader service **21**

# TAKING IT ON THE CHIN

*Attacking professionally used pesticides has become an annual ritual for the consumer media. Do they have a leg to stand on?*

DON'T LOOK NOW, there's another news report condemning pesticides for harming the environment and the public. "Lethal Lawsns," "Poisonous Pesticides," "The

Pesticide Scandal" and "Keep off the Grass," covered the airwaves and littered the print media this spring.

No revealing facts or statistics were disclosed. In fact, it was basically old news by the time it reached its audience. But the fact remains, the lawn maintenance industry is a target for environmental activists who want to see pesticides eliminated.

Meanwhile, professional associations with a vested interest in the continued use of specialty chemicals are working toward reasonable prenotification and posting laws, as well as enhanced applicator training and licensing requirements.

## MAINTENANCE CUSTOMERS UNAFFECTED BY MEDIA PUBLICITY

A ONE-SIDED three ring circus. That's how Steve Hardymon characterized the recent Senate subcommittee hearings on the use of lawn maintenance pesticides.

Hardymon, ChemLawn's vice president of environmental affairs and media relations, is not alone in his assessment of the event on Capitol Hill. Other industry leaders agree that the hearings tended toward the sensationalistic. But that's the bad news.

The good news is that the industry is more prepared for the onslaught of publicity, and the public appears to have grown weary of biased news reporting that covers little new ground.

"Because there was not a lot of new information, the press didn't make quite as big a deal of it as they have in the past," said Timothy Doppel, president of Atwood Lawn Care, Sterling Heights, Mich. "Also, the industry has done a better job of telling its side of the story."

Subsequently, customer response to the Senate hearings was slim to none, according to those polled.

Robert Andrews, president of The Greenskeeper, Carmel, Ind., said that no new issues were raised at this year's hearings. "I did not think that any of the

issues raised were different than those raised in the past. I think that PLCAA's proactive responses were positive."

Hardymon objected to the "circus-like" atmosphere and said the hearings were very high on media appeal and short on fact. He stressed that the industry must continue its proactive stance.

"I believe that this (Lieberman) bill will not go anywhere this year," Hardymon said. "However, I do believe that Congress will take some action in regulating lawn care products in the next two to three years. This is a clear signal to the industry that they must get involved or have to live with a Lieberman-type bill."

Sen. Joseph Lieberman, D-Conn., introduced a bill requiring 72-hour notification of pesticides by lawn care and structural pest control applicators in and around public buildings.

Russ Frith, president of Lawn Doctor, Matawan, N.J., called for more industry cooperation. "I think we have to work a lot harder to make sure all of our regulators understand what we do as commercial applicators," Frith said. "To be done effectively, I think we need to get everyone involved in our industry." ■

## NIGHTLINE DEBATE: IS THE PUBLIC AT RISK?

*Ted Koppel: I don't know if you're going to end up considering this an endorsement or an indictment, but your folks (ChemLawn) have been hauling hoses over my front and back yard for quite a few years now."*

CNN, USA TODAY, The Today Show and others have all participated in the thriving assault on pesticide usage, but *Nightline* made its premiere one day after Senate subcommittee hearings ended.

Moderated by *Nightline* host Ted Koppel, guests Jay Feldman, coordinator of the National Coalition Against the Misuse of Pesticides; Roger Yearly, vice president of health, safety and environmental affairs for ChemLawn; and Victor Kimm, deputy assistant administrator, office of pesticides and toxic substances, Environmental Protection Agency, spent 30 minutes weighing claims of toxic chemicals, the levels at which they are used, and whether pesticides do present a risk to the public.

While Feldman took every opportunity he could to denounce pesticides as toxic

## INS & OUTS OF

THE PROFESSIONAL MAINTENANCE industry seemed to make some headway with two U.S. senators and a Congressional subcommittee and will now participate in rewriting a proposed notification bill.

Senate Bill 849, better known as the Notification of Chemical Application Act of 1991, and the use and application of lawn care chemicals were at the center of subcommittee hearings in Washington, D.C., last month.

Easier to understand labels and truth in advertising were also targets of discussion.

Sponsored by senators Joseph Lieberman, D-Conn. and Harry Reid, D-Nev., the bill is designed to provide the advance notice of the application of a pesticide.





substances, virtually calling for their elimination from the environment, Yeary and Kimm discussed recent exposure studies and re-registration efforts.

Still five years from completion, Kimm said, pesticide re-registration is a high priority yet a time consuming proposition given the tests required of suppliers.

"It doesn't mean we wait until we're finished to review potential danger," Kimm said. "Where we find significant risk, we move to deal with it. Although these products are used on lawns, they also have fairly wide agricultural use. As a result, exhaustive data has been generated and studied."

Yeary presented information from a recent ChemLawn study which evaluated the health of 100 applicators who had ap-

**Roger Yeary:** *Material Safety Data Sheets are written for the concentrated form of the product not the diluted form. Our chemicals are diluted approximately 700 times with water.*



**Jay Feldman:** *The EPA identified pesticide exposure as one of its three most important priorities to look into. Remember, we're talking about the willful introduction of toxic chemicals into the environment.*



**Victor Kimm:** *If you're handling pesticides, we recommend you read the label and take common sense precautions. With the information we have, we don't believe there are serious risks in the normal course of a typical homeowner treating his lawn.*



plied pesticides for at least nine years. The study showed no long-term adverse health effects attributable to the applicators' work with chemicals, Yeary said.

These applicators were exposed more than 10,000 times what a homeowner can expect, and 100,000 times what a next door neighbor can expect, he added.

It's estimated that several million viewers watched the nationally broadcast show.

## RINGER TV COMMERCIALS RAISE EYEBROWS

THE RINGER Corp. voluntarily changed one of its John Cleese TV advertisements after complaints that the ads were false and misleading.

The Minnesota Department of Agriculture objected to the commercial in which British comic Cleese says: "Nothing goes into it that could hurt anything it eventually goes into." The department voiced its concern after Ringer competitors questioned the wording in the commercial.

An adviser for the state department specializing in fertilizer regulations said that organic products can cause problems if misapplied.

The original Cleese line was replaced by one in which the actor says, "All natural, all good, all safe."

Scott Boutilier, Ringer's commercial marketing director, said the modified commercial hasn't even aired and doesn't know if it will.

In recent years, the General Accounting Office has begun to question advertising in the lawn maintenance industry. Questions of both paid advertising — TV, radio and print — and promotion through brochures and sales pitches are under scrutiny. ■

## PESTICIDE NOTIFICATION

Appearing before the subcommittee on Toxic Substances, Environmental Oversight, Research and Development, four witness panels presented testimony — words that could dramatically affect the future use of pesticides.

The first two panels consisted of alleged victims of pesticide exposure, New York Attorney General Robert Abrams and Jay Feldman, coordinator of the National Coalition Against the Misuse of Pesticides.

The next two panels consisted of Ann McClure, executive vice president of the Professional Lawn Care Association of America; Warren Stickle, president, Chemical Producers and Distributors Association, Fred Hundt, vice president, consu-

mer marketing, Ringer Corp.; William Roberts, vice president, Golf Course Superintendents Association of America; and representatives from the General Accounting Office, Environmental Protection Agency and the Federal Trade Commission.

As presented, the bill requires 72-hour notification of property owners within 1,000 feet of the application, among other things.

Following is a summary of the positions several groups presented to the subcommittee in both oral and written form:

**PLCAA:** Supports "reasonable and responsible" national regulation of both professional users and, where appropriate, the use of lawn care products by homeowners.

Reasonable regulation includes prenotifi-

cation; the creation of a registry of sensitive persons on a national scale; posting; certification for pesticide applicators beyond what is required by the Federal Insecticide, Fungicide and Rodenticide Act; and timely re-registration of lawn care products. **RISE:** Recommends appropriate environmental legislation, based on demonstrated need and sound science.

Omnibus notification requirements as unreasonably burdensome and an impediment to users who follow sound, government-prescribed application practices. **GCSAA:** Right to know communications, used in conjunction with an integrated approach to plant management by those who are well-founded in the essentials of appropriate pesticide use, can help minimize exposure. ■

# TEAM PLAYERS

**EVERGREEN SERVICES INSPIRES PLANNING FOR LONG-TERM IMPACT**

*Evergreen's best growth potential is in the property management field. They want to accelerate the company's 8 percent to 10 percent annual growth to 12 percent to 15 percent for the next five years.*

*By Kevin Tanzillo*

WHEN A COMMERCIAL customer hires Evergreen Services Corp. for landscape maintenance, it hires a virtual business partner.

That's the way President Rod Bailey said his Bellevue, Wash.-based company distinguishes itself, as a landscape management contractor able to assemble a team that can handle any of the customer's needs, from the outside walls of the building to the property line.

Maintenance is Evergreen's forte, but the company's approach to teamwork is what attracts many of its key customers throughout western Washington.

"Our philosophy is that the basic maintenance customer is king. Our objective is to be a total landscape service for anyone with whom we do ongoing maintenance," Bailey said. "If we have a customer planning a new property or project, we want them to look to us to handle all their landscape needs."

This is Bailey's 20th year at the helm of Evergreen. He and partner Tom Graham bought the company in 1971 from its founder, Orrin Maxwell. Maxwell founded it in 1968.

Bailey has been involved with Evergreen since its founding, initially as an outside management

consultant. Bailey worked for the Harry J. Prior & Associates consulting firm, which Maxwell hired when he began the company. Bailey helped Maxwell establish budgets, bank proposals, bidding and estimating practices and operating procedures.

After three years, Maxwell decided to sell his business and retire.

"Realizing that the guys at Evergreen were having more fun doing what they were doing than I was doing what I was doing, I became an interested candidate" to buy Evergreen, Bailey explained. "Besides, any management consultant worth his salt has

thoughts about running his own business."

Bailey joined with Graham, a fellow consultant at the Prior firm, to buy Evergreen in 1971. They formed a company called Pacific SBG Inc., which acquired the stock of Evergreen. The ownership arrangement remains intact today.

Bailey, 53, is a Seattle native. He earned a master's in business administration from Stanford in 1961. After graduation he spent a year and a half in military service, then worked for Proctor & Gamble until 1965.

Graham, also 53, received an MBA from the University of







Rod Bailey, Tom Graham and Dave Richards, manager of Robinswood House, Bellevue, Wash., discuss the site's maintenance program. Photo: Robert Rose.

---

## EVERGREEN SERVICES CORP.

**HEADQUARTERS:**  
Bellevue, Wash.

**SATELLITE OFFICES:**  
Seattle, Bellevue, Kent, Woodinville, Olympia and Bellingham, Wash.

**FOUNDED:**  
1968 by Orrin Maxwell; 1971 acquired by Rod Bailey and Tom Graham.

**OWNER:**  
Pacific SBG Inc. in which Bailey and Graham each own a 50 percent share.

**PRIMARY SERVICES:**  
Full service landscape management firm.

**EMPLOYEES:**  
45 year-round; 70 seasonal.

**1990 SALES:**  
\$2.25 million.

---

Washington in 1965.

Early interest in small business led both Bailey and Graham to the consulting firm, where they worked from 1965 until the Evergreen purchase six years later.

**EARLY ROLES.** Bailey functioned as general operations and financial manager, while Graham was marketing and sales manager until 1977. At that time, Graham stepped out of the day-to-day operations of Evergreen to pursue diverse business interests on behalf of Evergreen's parent company, Pacific SBG.

This year, Graham rejoined Evergreen on an active basis,

reflecting an increased emphasis on marketing.

"We came to the realization that we are in a much more competitive market," Bailey explained. "We have established our image and position in our industry. Now we feel we are in a position to be aggressive about growing. You need a very targeted marketing effort and I did not have time to give that its due.

"Tom's focus is to impact our ability to grow. He is also going to work on our facilities development plan. We want to establish an additional satellite office east of Bellevue and acquire our own facility north of Seattle."

Right now, Evergreen has offices in Bellevue, Seattle, Kent, Woodinville, Olympia and Bellingham. The office distribution throughout the most populated areas of the state allows Evergreen's crews to minimize travel time on increasingly crowded Seattle-area highways. The time saved is used instead at customer sites.

All Evergreen supervisory vehicles are equipped with two-way radios. Fax machines at each of the satellite facilities help maintain efficient communication. When needed, Evergreen people wear pagers.

"The reason our shops are

established where they are is that when we acquired Evergreen, 95 percent of the company's business was with a single major power utility, Puget Power. Our offices were located to serve that utility's operating divisions," Bailey said.

**CLIENTELE.** The power company is still Evergreen's biggest customer, but Evergreen has diversified over the years. The company stays out of the single- and multi-family property market. Its best customers are electric, telephone and water utilities, commercial banks, commercial property managers and industrial



site owners.

It is among property managers that Bailey and Graham see Evergreen's best growth potential. They want to accelerate the company's 8 percent to 10 percent annual growth to 12 percent to 15 percent for the next five years.

"There is a trend to more and more properties contracting out to property management companies. Over the long-term, the property management market will increase for us, and certainly will be the largest single source of our business in the year 2000," Bailey predicted.

"But we plan to continue our niche in terms of our geography and being uniquely geared to serving multi-property owners and managers."

Evergreen has 45 employees year-round, with a summer peak around 70. The company had 1990 sales of \$2.25 million.

Evergreen, in the mid to late 1970s, offered landscape construction services with three landscape architects and a full-service design, build and maintain approach. That was discontinued when the Seattle economy faltered in 1980.

"I discovered I have a service mentality, not a construction mentality," Bailey explained. "When economic circumstances forced us to discontinue the construction

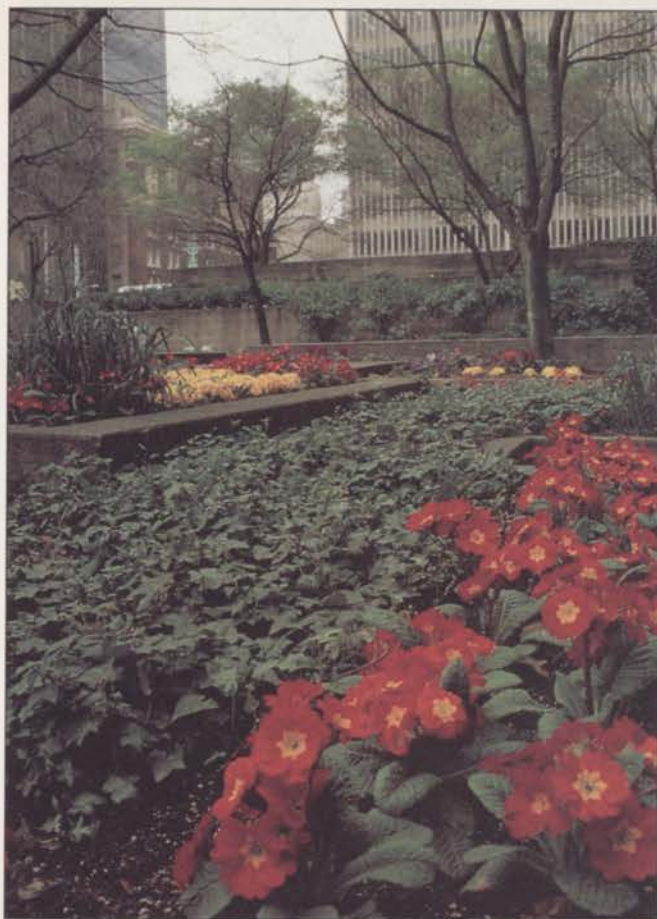
## "Our philosophy is that the customer is king."

business, we decided not to get back into it when the economy got better. This way, we can build an outside team to tailor to specific projects. It gives us more flexibility."

The team approach and an emerging commitment to water management in a geographic area most people perceive as a wet one, help differentiate Evergreen from its competition.

"Twenty-three years ago we were the only company providing professional landscape maintenance in this market," Bailey recalled.

"Over the years, two or three



or four large companies emerged as competitors. But in the last five years, something has happened to the other larger contractors. One went bankrupt and another, who had branched here from Portland (Ore.), pulled out. Now there are more and more smaller, very professionally oriented maintenance contractors."

**COMPETITION IS HEALTHY.** Bailey said Evergreen Services welcomes competition.

"Some years ago I picked up a philosophy from Joe Marsh of California, one of the early gurus in our industry, and that is the more you do to help your competitors be good contractors, the stronger a market you build for everybody. I have found this to be true over the years."

That open attitude to competition was one motivation for Bailey's active involvement in trade associations, especially the Associated Landscape Contractors of America.

"I first became associated with ALCA about 1974, when I was asked on two occasions to speak on business management topics," Bailey said. "I was an oddity, coming into the industry with a

management background rather than horticultural. I joined ALCA as a result of being invited to speak at the first two meetings of their landscape maintenance group."

Bailey was elected a Northwest regional director in 1979 and was chairman for the 1980 symposium in Seattle. He moved up the officer ladder through the early 1980s, serving as president in 1985. Bailey also chaired the long-range planning committee from 1983-87, chaired the education committee in 1981 and is now a director at large and member of the board of governors of ALCA's national certification program.

He helped found the Washington Association of Landscape Professionals and was president of that organization in 1987. He has also been active in all its committees, and now chairs its long-range planning committee.

"Long-range planning is a key to success," Bailey said of his tendency to end up on planning groups. "I got tired of watching things change according to the goals of each person elected each year. I believe that through a long-range plan an association and a business get a sense of continuity and what their real goals are.

**Park Place Building, Seattle, Wash. Color spots are integrated into the natural setting.**

"We do this in our own company, too. Our key management group goes on an executive retreat every other year to update our three- to five-year objectives and focus only on long range planning goals of the firm."

Evergreen also belongs to the Professional Grounds Management Society.

Bailey welcomes competition, but makes sure that Evergreen responds to the challenge. Part of the company's competitive weaponry comes from its resourceful office setup.

"We are in a unique position to serve the multi-property commercial customer whose properties are spread out. We are the only contractor I know of in this area that can serve properties anywhere in the western part of the state," declared Bailey. "This gives us an edge with utility companies, branch banks and broad-based property managers.

"We offer responsive, reliable service and we insist on development of a specification that defines our responsibility to the customer. Then we perform to that specification. That's not to say our competitors don't do that, but we generally do a better job than they do.

"Our objective is to simplify the property manager's life; to give him as few outside contracts as necessary. That is a focal point of our marketing."

**TOP-DOWN MARKETING.** Evergreen's marketing approach, as Graham described it, is "targeted top-down marketing."

"Rod and I have professional business backgrounds. We believe in belonging to our own industry associations and to associations our present and future customers will likely belong," Graham said. "We try to know the principal people involved in our customer market from the top of the company on down."

Bailey, Graham and the rest of the Evergreen marketing team belong to the Building Owners and Managers Association and the National Association of Industrial and Office Parks, whose members include the decision-makers in key customer markets.

Evergreen seeks out new



customers, but puts highest priority on the needs of existing customers.

"Should we for any reason lose a customer, we bow out gracefully. We make the parting as friendly and as positive as possible," Bailey said.

"We have a high return rate on lost customers coming back to Evergreen within two or three years. We stay in touch with customers we lose, making sure they are well served by whomever they are working with, whether it's in-house with their own crew or contracting with someone else. It's easier to resell an old customer than to sell a new one."

Evergreen's field people are encouraged to scout prospects for a "TAGOs" list. The acronym stands for That's A Good One.

"If they see properties they think we should be serving, they turn in as much information as they can find out. We will follow up," Bailey said.

Employees who are good scouts must first be satisfied workers who feel a sense of loyalty to Evergreen. How does Evergreen's management keep its people happy?

Said Bailey, "The employee IS the company. As a small company, we have a lot of incentives for personal growth and opportunity, to grow with the company and become a key part of the management team.

"We have always tried to compensate our people comparably to or better than our industry. That doesn't mean we have been high payers, but we have been very fair. We survey the market and try to be competitive, if not lead."

Evergreen offers employees medical, dental and vision coverage, life insurance, short-term disability and a 401K retirement program. It also reimburses 50 percent to 100 percent of the costs of outside, career-related training and education.

Bailey manages from the top, through his organization, rather than spending a lot of time in the field. Still, he said, "I like to get my field clothes on and be a part of what is going on."

Two or three times a year he joins a work crew. His most recent job was a major color changeout. Working with his peo-

**The key management team at a recent long range planning retreat.**

ple helps maintain the atmosphere of a small business, Bailey said.

"We are still a small business, really. Two and a quarter million dollars isn't a large business. We may be a substantial company in this industry, but we like to keep the character and flavor of a small business," he said.

In the following interview, Bailey and Graham elaborate on the subjects of team building and water management, two approaches that distinguish Evergreen Services from its competitors:

**Q:** How successful has the team approach been?

**A:** Three of our largest landscaping jobs were done under the landscape management concept, where we either retained the landscape architect or, if he didn't work directly for us, we were given design review control by the customers. As a result, we worked with the architect from ground zero in trying to integrate good design for ongoing maintenance.

We believe 60 percent to 70 percent of the life cycle cost of a landscape is maintenance, so we try to build a team as early in the job as possible. We meet initially with the customer and landscape architect to consult on design objectives for the project.

We try to get the customer to spend wisely up front for those ideas that lead to long-range maintenance efficiency.

**Q:** What kinds of ideas are those?

**A:** One would be design of an efficient irrigation system. If you are designing to meet the needs of the landscape, you must pre-design your water management program.

Another is that a lot of people tend to plant up against the foundation of the building. We like to see walk strips 12 to 15 inches outside the building. This keeps the window washers from trashing plants and gives our crews access to the back side of bed areas.

It also gives the plants on the back side some air, water and light so you don't have brown-looking plants for the people looking out. Good drainage is another thing we really review, and insist on, in a plan.

**Q:** Do you try to talk customers out of something they'll regret later?

**A:** Our objective is not to limit the architect or owner in what they want to do. We simply insist that the customer is aware of the long-range cost impact of what they are trying to do.

Many architects really don't presell their customers on design concepts they are building into a landscape. If we come along later and tell the customers what it will cost to maintain the landscape, they are shocked. They were not sold at the design stage on what the objectives were.

We have one site where the architect designed each major quadrant with a different appearance. One was a wild, rangy natural landscape, but the architect didn't draw that to the customer's attention. The customer likes neatly-trimmed formality. So we have to come along and bring neatness to what was designed to be wild and rangy.

**Q:** What is Evergreen's position on the team?

**A:** Our role is to make sure the customer is advised of the long-range impact. We like to be on

a team with the architect from the start.

We like to keep the architect involved through the maintenance period too. He knew the design objectives and we want his guidance when we maintain it. If a customer says he wants it to look different, we like the architect to help explain why it does or doesn't or why it can or can't.

Most architects design for a 20- to 25-year maturity, but are only around for the first six months. They should be a part of the maintenance team too.

**Q:** How do architects react to this approach?

**A:** The newer, younger architects are buying into this and even promoting it. We feel like we have been a leader in this concept, and certainly in our area we have. We try to market that concept to the customer to begin with.

Since we normally do this with clients with whom we already have a maintenance relationship, we are frequently in touch with the customer first.

**Q:** This is quite a different approach, isn't it?

**A:** This is a definite reversal of traditional roles in the industry.

What we are trying to do is make this a mutual participation process. We get as many people in on the team as far as we can, including the general contractor. We find the contractor is more than willing to cooperate in better site preparation if he is aware of the concerns.

**Q:** What do you mean by water management?

**A:** Basically, it is taking a look at the horticultural characteristics and water needs of a site and auditing the supply or irrigation system. You attempt to maximize the efficiency of the water system and see improvements in the way the irrigation system is designed and operated.

**Q:** How do you achieve those efficiencies?

**A:** You pay attention to a separation of irrigation zones between hot, sunny zones and north-facing sites less demanding of water.

It may involve a redesign of the irrigation system. Frequently that means an irrigation controller with more zone stations on it, and installation of new valves to create new irrigation zones.

**Q:** Is this really necessary in a place like Seattle?



(continued on page 68)



# IS IT A GLUT? OR WILL DEMAND CATCH UP TO SUPPLY?

*The competitiveness of the turfseed industry has spawned new varieties, new technology and an interest in foreign markets.*

*By Cindy Code*

Seed varieties are coming out fast and furiously, but there's still a lot to discover. Photo on page 27: Turf-Seed.

TALK ABOUT cyclical markets.

Following a season of good supplies and soft prices, some turfseed suppliers are praying for only adequate yields to avoid a seed glut. Others, however, who managed to sell most of their 1990 crop are looking forward to good yields to refill their seed coffers.

This isn't just a simple issue of supply and demand. To complicate matters, forces outside the realm of turfseed production have conspired to make a difficult situation worse.

The California drought, a down housing and construction market and a generally poor economy have all contributed to an uncertain forecast for turfseed sales.

Just two years ago, popular turf-type tall fescues fell far short of demand. Indeed, most turf-type varieties were playing catchup to end-user needs.

"There's no question the economy has affected seed sales," said Bill Junk of Fine Lawn Research, Columbus, Ohio. "The Midwest and South are doing OK, but the West and Northeast are really off."

Sales to sod growers are also said to be down.

Some species, tall fescue in particular, are in a glut right now. Perennial ryegrasses and bluegrasses are said to be in surplus, fine fescues are in adequate supply.

"It's going to be a tough year.

All companies are going to have to be concentrated in their efforts. People are going to have to work for orders rather than take them," Junk said. "Buyers feel no pressure to place orders. They know the product is going to be there. Unfortunately, the demand is not infinite. There's a finite number and we've reached it."

As a result, increased acres were planted and seed yields were abundant, contributing to last year's soft prices.

"The retail market has held up pretty well, but the professional market was hurt a bit, particularly the large users who do government or highway work," said Barry Green Jr. of Jonathan Green Inc., Farmingdale, N.J. "We're getting as many or more orders, but the size of the orders are lower."

But this year's feast could be future years' famine.

An abundance of seed and soft prices has resulted in the plowing out of acres, as much as 20 percent by some suppliers. Reduced acres will ultimately reflect in crop shortages.

"The economy isn't helping any. We're seeing more seed sitting than normal," said Mike McCarthy of E.F. Burlingham & Sons, Forest Grove, Ore. "lots can happen between now and harvest, but the grass seed looks reasonably good. We're concerned about oversupply."

But all is not lost.

"We're starting to see a glimmer of hope out West because of recent rain in California, and the snow pack in the Sierras is beginning to be a plus," said John Glatty of NK Lawn & Garden, Minneapolis, Minn.

Glatty said production fields of tall fescue look good, but perennial ryegrasses suffered from winter kill in some areas. In addition, bluegrasses suffered winter kill in Eastern Washington and Oregon, but it's too early to tell if bluegrass prices will be substantially higher than last year.

Art Wick of LESCO, Rocky River, Ohio, said he views seed supplies as a result of weather and overproduction rather than a product of the recession.

"We've found that if the cool-season zone gets sufficient moisture there's a decrease in demand, but if there's a drought we see an increase following the drought," Wick said.

"When you get past the initial number and look at particular varieties, those which are well marketed aren't in the same situation," said John Zajac of Zajac Performance Seed, Haledon, N.J. "We've got more seed, but there isn't as much around as everyone says. But the season's not in the bag yet; a lot can happen. If we have a poor harvest, we'll be right on target."

Mike Baker of Pennington Seed, Lebanon, Ore., said sales are surprisingly good.

"We have some species that are down and others that are significantly up. Our common perennial ryegrasses are down, but our Kentucky bluegrasses and fine fescues are significantly up," Baker said. "All prices are pretty soft, but those two probably dropped low enough that it allowed for maximum use."

Baker said he doesn't expect a large crop of high quality seed this year. The timing of cold weather in Washington, Idaho and Oregon







delayed many crops. Freezing and thawing encouraged more weak production than good quality seed production.

Steve Tubbs of Turf Merchants, Tangent Loop, Ore., said the one bright spot in an otherwise bleak season is Bonzai turf-type tall fescue.

"Price cutting has affected sales terribly, but dwarf fescues remain hot," Tubbs said.

Although a lot of frost damage has been detected out West, Tubbs said, rain has been nearly continuous, presenting ideal, green house-like growing conditions.

John DeMatteo of Lofts Seed, Bound Brook, N.J., said the firm seems to be able to sell seed; there's just a lot of competition out there.

Tom Stanley of Turf-Seed, Hubbard, Ore., said the weather, more than the economy, has affected sales. Water restrictions are affecting the seed and sod markets, seed consumption is down on the home level, but golf course demand remains strong.

Foreign markets are playing an increased role in the U.S. turfseed market. Mergers like Normarc and Barenburg and J & L Adikes

and VanderHave USA, as well as planted acres in areas like New Zealand are increasing capabilities and seed yields.

Northrup King, Medalist turf division, which recently merged with Vaughan's Seed and formed NK Lawn & Garden, sees the export market as a clear opportunity in lawn care, sod and hydro-seeding among others, Glattly said.

Zajac said his products are tested and marketed overseas in the Pacific Rim, Europe and other areas to evaluate varieties for success under various climatic conditions.

"I'd like to think the largest market continues to be the domestic one," Zajac said. "The foreign market represents a growth area because their golf course construction grows to match ours. We're seeing increased use of American varieties, technology and maintenance practices."

Field burning remains a problem in the Northwest. Various bills continue to be drafted and considered in Oregon, Idaho and Washington, but the situation remains unresolved.

Regulations limiting open burn-

ing in Spokane County, Wash., left a lot to be desired, leading to the formation of the Inland Empire Field Burning Summit. Now in its sixth month of negotiations, participants are reviewing current regulatory procedures for both Idaho and Washington. The group hopes to work out a regional smoke management program which can be used until the industry can come up with an alternative to open field burning.

**NEW RELEASES.** For all the uncertainty in the turfseed industry this year, one thing is for sure: A number of varieties are slated to be released.

Montouk and Duke are two new turf-type tall fescues from Jonathan Green. Both developed by Dr. Reed Funk at Rutgers University, the pair are dark green dwarf varieties.

Jonathan Green's Gettysburg perennial ryegrass will be commercially available for the first time.

The most interesting Jonathan Green release is Washington Kentucky bluegrass, according to Green. It's an early maturing bluegrass with early spring green-

up. This is good for Northern climates where bluegrass generally comes on more slowly. Washington is said to be dark green in early March.

Washington will be available in limited quantities this year.

New from LESCO is Legacy perennial ryegrass. The dwarf variety is high in endophyte, 94 percent, dark green and in limited quantities. Assure perennial ryegrass, a dark green, fine-textured, dwarf perennial, is also available. It holds a 96 percent endophyte level.

Zajac Performance Seed will release Envy perennial ryegrass. Like the new generation of ryegrasses, it's darker in color, has a lower growth habit and is endophyte enhanced. Envy is selected from germ plasm resistant to snow mold.

It exhibits good cold tolerance, works well in North areas and makes for good overseeding in the transition zone. It's available in limited quantities.

Jacklin Seed will offer NuStar and "229" Kentucky bluegrasses.

NuStar is said to perform well against powdery mildew and summer patch as well as show good



resistance to leafspot, melting out and leaf rust — three serious bluegrass diseases.

It has a dark green color, is moderately dense and has an above-average resistance to wilting due to drought. Spring greenup is from moderate to superior, depending on location.

"229" has a medium dark color, exhibits good early spring greenup and has shown good resistance to leaf rust and leafspot/melting out and intermediate resistance to pink snow mold.

Moderately fine leaf texture and high density are two characteristics.

Pixie turf-type tall fescue from Jacklin offers excellent resistance to brown patch and a dark green color. It maintains color under low fertilization and water requirements.

Advent and APM are two new perennial ryegrass releases from Jacklin. Advent is low growing, heat and drought tolerant with excellent disease resistance. APM has a dark color with high density and moderately fine-leaf texture. Its strongest feature is that it has shown good resistance to summer stresses — brown patch, pythium and other summer diseases.

The Post Falls firm is also introducing seeded Sunrise brand zoysiagrass. Marketed through International Seeds of Halsey, Ore., Sunrise brand *Zoysia japonica* and Sunrise brand *Zoysia sinica* seed are enhanced with chemical pretreatment that dramatically improves germination



Turf-Seed's Bill Meyer and Bill Rose inspecting a field. Photo: Turf-Seed.

and results in establishment.

Other features include: slow growth, drought tolerance, improved cold tolerance, little to no fertilization requirements, withstands mowing heights from 3/4-inch to 2 inches, moderately fine texture and density to crowd weeds.

Fine Lawn is hoping to have limited supplies of poa supina, C2 bermudagrass and adequate supplies of Camaro chewing fescue and new dwarf Fine Lawn Petite.

The dwarf is said to establish quickly and is more open, giving it better disease resistance than some of the more tightly knit dwarfs, according to Junk.

International Seeds of Tangent, Ore., will offer "1034," an un-

named Kentucky bluegrass. It's noted for good heat tolerance, fairly good resistance to brown patch and fairly good spring greenup.

Cindy creeping red fescue shows good density and low mowing height, approaching the quality of chewings, according to Steve Johnson of International Seeds.

Eureka hard fescue has a low growing mature plant height and, like other hard fescues, adapts well to dry, infertile soils.

Era tall fescue is a fine-bladed variety which can withstand lower mowing heights and makes a fine blend with Kentucky bluegrass.

Derby Supreme perennial ryegrass shows quick establishment and good color.

All International Seed varieties are anticipated to be in adequate supply.

NK Lawn & Garden will offer Sundevil bermudagrass. The cold tolerant bermuda will be in limited supply in 1991 and adequate supply in 1992. It's adapted as far north as St. Louis, Louisville and Baltimore.

E.F. Burlingham & Sons will market Banner II, a fine fescue, through O.M. Scott & Sons. The seed has been refined for color, density and disease resistance. Endophyte levels are said to reach 98 percent.

(continued on page 30)

## SEED COMPETITIVENESS SPURS NTEP PARTICIPATION

SINCE 1980, the U.S. Department of Agriculture, through its National Turfgrass Evaluation Program, has been evaluating major species of turfgrass. Bluegrass varieties as well as other cool-season species were the initial focus of the testing, but warm-season turfgrasses are now getting their turn.

Although it's difficult to determine the size of the turfseed industry — some estimate between \$600 and \$800 million — NTEP tests relate the number of species being targeted for market.

Last fall, 125 varieties were entered in the high maintenance bluegrass category, while 62 entries were posted for the low maintenance bluegrass division, according to Kevin Morris of the NTEP.

With each test taking four to five years, the NTEP is on its third test cycle for bluegrasses as well as perennial ryegrasses.

In perennial ryegrass plots seeded last fall, 123 varieties were planted.

The NTEP has finished its second round of tests with tall fescues and expects to start its third this fall. More than 100 entries are expected, up from 65. Morris said the tall fescue category contained all turf-type varieties except Kentucky 31.

About 94 entries were posted in the 1989 fine fescue test and nearly 60 entries were filed for the NTEP's first bentgrass trials, which are conducted in three segments: managed green on modified soil, managed green on native soil and a managed fairway or tee.

Warm-season categories are expected to see increased participation. Bermudagrasses have been tested since 1986 with a high of 28 entries. A second test is scheduled to begin in 1992 as will a St. Augustine test with about 25 entries.

Zoysiagrasses and Buffalograsses were planted this spring with 25 and 22 entries respectively.

The NTEP coordinates and distributes the species to land grant universities across the country. Test plots are generally planted three times for statistical reasons.

Newer varieties don't signal an end to common varieties. It's said that the contemporary varieties are targeted to a more specific, educated market. Suppliers don't discourage end-users from buying older varieties, particularly if they feel more comfortable with them, but they try to move end-users into newer varieties because of increased benefits. ■



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**Nationwide testing at 41 sites of turf-type tall fescues place ARID as #1, and the first choice for athletic fields, parks, playgrounds and public area lawns.**

**Nationwide testing gives Arid the lead.**

### Mean Turfgrass Quality Ratings of Tall Fescue Cultivars At Four Shade Locations in the United States

Name	Mean
Arid	6.0
Finelawn I	5.6
Trident	5.4
Pacer	5.3
Mustang	5.3
Apache	5.2
Tempo	5.1
KY-31	5.0
Falcon	5.0
Hounddog	5.0
Adventure	4.9
Jaguar	4.9
Bonanza	4.8
Olympic	4.8
Maverick	4.7
Willamette	4.6
Rebel	4.5
Clemfine	4.4
Brookston	4.4
Johnstone	4.0
Kenhy	3.4

Data from USDA National Turfgrass Evaluation Program

### Drought Tolerance (Dormancy) Ratings of Tall Fescue Cultivars

Dormancy Ratings 1-9		9=No Dormancy	
Name	Mean	Name	Mean
Arid	7.7	Chesapeake	5.7
Olympic	7.7	Tempo	5.3
Apache	7.3	Hounddog	5.0
Jaguar	7.3	Pacer	5.0
Finelawn I	6.3	Johnstone	5.0
Mustang	6.3	Kenhy	5.0
Rebel	6.3	Maverick	5.0
Bonanza	6.0	Brookston	4.3
KY-31	6.0	Clemfine	4.3
Adventure	5.7	Trident	3.7
Falcon	5.7	Willamette	3.3
Finelawn 5GL	5.7		

Data from USDA National Turfgrass Evaluation Program

### Brown Patch Ratings of Tall Fescue Cultivars

Brown Patch Ratings 1-9		9=No Disease	
Name	Mean	Name	Mean
Arid	6.3		
Adventure	6.2		
Jaguar	6.1		
Rebel	6.0		
Pacer	5.9		
Maverick	5.8		
Falcon	5.8		
Clemfine	5.7		
Apache	5.6		
Tempo	5.6		
Olympic	5.6		
Hounddog	5.6		
Chesapeake	5.5		
Finelawn 5GL	5.5		
KY-31	5.5		
Mustang	5.5		
Bonanza	5.5		
Trident	5.5		
Johnstone	5.5		
Finelawn I	5.3		
Kenhy	5.0		
Willamette	4.9		
Brookston	4.3		

Data from USDA National Turfgrass Evaluation Program

Be sure to order Arid from your seed wholesaler or sod distributor.

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### Is It a Glut?

(continued from page 28)

Competitor is a turf-type fine leaf perennial ryegrass requiring lower maintenance and exhibiting dark green color, some dwarf characteristics and good disease resistance.

A new tall fescue from Burlington is Thunderbird. A dark green hardy type, it does well in the transition zone. It's being used in combinations with the tall fescue variety Winchester.

Enviro-blend from Pennington Seed combines three dwarf type tall fescues, emphasizing excellent turf with lower mowing needs. Two of the varieties are just becoming commercially available and the third is Monarch.

Tradition tall fescue was developed for good brown patch resistance, high endophyte and adaptation to the transition zone.

Sonesta seeded bermudagrass from O.M. Scott & Sons, Marysville, Ohio, will be in limited supply. The finer texture, dark green, dense turf offers easier propagation.

"At this point it's not as cold-hardy as we'd like," said Virgil Meir. "We'll bring it a little further North into the transition area within five years."

Jamestown II chewings fescue from Lofts Seed has been improved through breeding and now contains a high level of endophyte. Reliant has also been enhanced with endophyte.

The first crop of Southshore bentgrass will also be available.

By 1992, all Lofts ryegrasses will be offered in improved forms: Palmer II, Prelude II, Repel II and Yorktown III have been enhanced with endophyte, are darker in color, are finer-textured and lower growing.

Safari tall fescue from Turf Seed is said to exhibit a new level of brown patch resistance. The intermediate dwarf is dark green, dense and low growing. It can be used wherever tall fescues are well adapted.

Mow-Less tall fescue is a blend of three dwarf varieties — Silverado, Eldorado and Tomahawk — and is designed to reduce mowing. It will be in moderate supply.

Turf Merchants is fine tuning its perennial ryegrasses and will be offering Aquatic II and Alar II.

In addition, the firm is in its second full production year of Bon-

zai. The dwarf has been fine tuned with increased endophyte levels, improved color and a more open growth habit which will perform better under humid conditions.

Normarc is marketing two overseeding mixtures this year: Turf Star and Top Flight, two perennial ryegrass blends.

**R&D.** With varieties coming out so quickly these days, the race is on to develop varieties that are greener, require less maintenance and stretch the range of adaptation.

One obstacle: Varieties are coming out so quickly, they're almost contributing to a seed glut. While it used to take five years to get a brand name established, certain varieties now become outdated in five years.

"As far as tall and perennial ryegrasses go, all the basic research has been done," Junk said. "We're not creating brand new technology anymore. It took 20 years to develop it, now we're refining it. It's a matter of concentrating on color, disease, drought tolerance and so on."

Creating varieties with improved resistance to disease, especially brown patch disease; texture; seed yield; grasses for regions or specialty areas such as wetlands; seeded bermudagrasses and zoysiagrasses; increased compatibility among species; decreased mowing; and grasses to meet the growing needs of Southern expansion are among traits being researched by plant breeders.

On the production end, researchers are working diligently to improve resistance to stem rust. The disease has a devastating effect on plants; stressing them so they don't get good seed fill.

The possibilities for turf-type tall fescues are endless.

"It's my belief that tall fescues are here to stay," Glatly said. "There's no doubt, however, that research will be focusing in on better material for the transition zone. We're at the tip of the iceberg for tall fescue. There's a real opportunity in the transition zone and southern states."

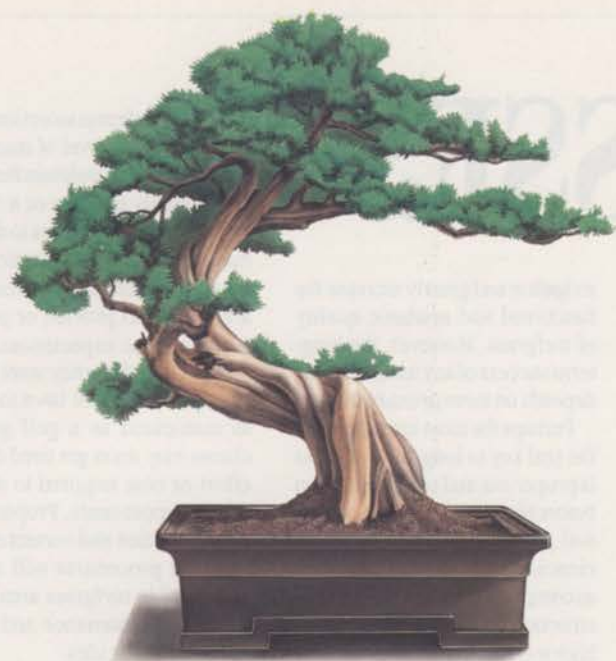
Opportunities abound with endophyte enhancements as well.

"We want to introduce endophyte wherever possible in tall fescues," Wick said. "Reduced blade width and vertical growth rate are also high priorities."

Seeded zoysiagrass breeding  
(continued on page 67)



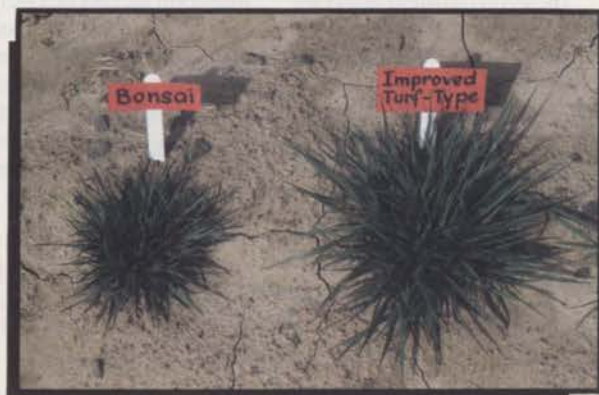
# Inspired By The Ancient Japanese Art



## Bonsai

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# TURFGRASSES:

## THEY'RE MORE THAN BLADES AND ROOTS

*Landscape designs shouldn't eliminate or minimize turfgrass areas but optimize plant uses.*

*By Richard White*

*Editor's Note: Mention of specific variety names in this article does not constitute a guarantee, warranty or endorsement of the grasses mentioned. The best source of information about individual turfgrass varieties is the Cooperative Extension Service County Extension Agent or Turfgrass Extension Specialist in your area or region.*

PROPER TURFGRASS species and variety selection can make or break many turfgrass and landscape managers and determine the overall success of a well designed landscape planting.

With recent droughts, much emphasis has been placed on eliminating or minimizing turfgrass areas in landscape designs. Water conservation should be important to everyone and many turfgrasses, contrary to popular sentiment, generally consume less water when properly planted and can withstand drought better than or as well as many other landscape plants.

This article will not resolve that controversy; it will be argued for many years to come. However, landscape designs should not seek to eliminate or minimize turfgrass areas but should seek to optimize those plants used in the landscape. This optimization should be based on the client's needs and tastes, desired aesthetics and the landscape function required.

Many forget that aesthetics are not the only reason we use specific plantings in the landscape. The functional attributes provided by turfgrasses such as soil stabilization, reducing rain water runoff and increasing ground water recharge, serving as a living biological filter for airborne pollutants and heat energy dissipation are often overlooked merits of turfgrass areas.

Selection of the appropriate turfgrass can greatly reduce the need for fertilizers, pesticides and

irrigation and greatly increase the functional and aesthetic quality of turfgrass. However, the long-term success of any turfgrass area depends on three primary factors.

Perhaps the most important and the real key to long-term success is proper site and soil preparation before planting. Failure to correct soil physical and chemical deficiencies prior to planting, such as compaction caused during construction and excessively low or high soil pH, can mean failure for even the best of turfgrasses.

The second and third factors are probably equally important. Selection of turfgrasses that are well adapted to your local climatic conditions and intended use of the turfgrass area being established will determine a client's satisfaction to a large extent.

Proper turfgrass selection will also dictate the level of management required to maintain the turfgrass quality that you or a client expects. It is a good idea to determine the client's expectations of the turf area and the care that they are willing to provide or pay to achieve those expectations.

Although they may want their front yard or office lawn to look as manicured as a golf green, clients may soon get tired of the effort or cost required to maintain that appearance. Proper turfgrass selection and correct establishment procedures will result in a durable turfgrass area with minimal maintenance and little need for pesticides.

The third factor determining the long-term success of a turfgrass area is the proper timing and application of correct management practices. Usually the greatest failures occur when turfgrass managers fail to follow proper mowing, fertilization and irrigation practices.

## CHARACTERISTICS OF THE

### Adaptation

	Shade	Heat	Cold
<b>COOL-SEASON TURFGRASSES</b>			
Fine fescue	good	fair	very good
Kentucky Bluegrass	good	fair	very good
Perennial ryegrass	good	fair	very good
Tall fescue	good	good	very good
<b>WARM-SEASON TURFGRASSES</b>			
Bermudagrass	very poor	very good	very poor
Hybrid Bermuda	very poor	very good	poor
Bahiagrass	good	very good	poor
Buffalograss	very poor	very good	very good
Centipedegrass	fair	good	poor
St. Augustinegrass	very good	very good	poor
Zoysiagrass	fair-good	very good	good

<sup>1</sup>Some varieties are better adapted and more pleasing in appearance than the comparison

<sup>2</sup>Nitrogen rate in pounds per 1000 sq. ft. per year.

<sup>3</sup>Mowing frequency is dictated by season, intensity of management and use.

<sup>4</sup>Establishment rate is dictated by planting dates, seeding and planting rate, intensity of



Mowing too close, over fertilization and applying too much or too little water are management practices that typically lead to turfgrass failures. County extension agents are a good source of information for proper management methods for grasses grown in your area.

No one grass is best for all situations. A number of factors should be considered before you decide which grass to plant.

First, choose a grass well suited to the climate for your location. Regardless of the region, try to match the turfgrass to the climate, intended use or wear at the site and desired appearance.

Select a shade-tolerant grass when trees predominate. Choose an adapted grass that best meets your client's preference for color, density and texture. Choose a tough, aggressive, wear-tolerant grass where nearby traffic is expected. Remember to consider the amount of time, effort and money your client is willing to spend for

turfgrass maintenance. Inadequate maintenance of a grass requiring intensive management often results in poor performance and pest problems.

Warm-season grasses grow best in the summer and go dormant during cool weather in the fall. Many do not like the straw winter color of dormant warm-season turfgrasses. However, when free of winter weeds the bright winter color can provide contrast and accent to well planned landscapes.

The major grass species used for turf purposes are shown in Table 1 along with a general guide to their characteristics. It is difficult to provide a complete list of all turfgrass varieties along with the individual variety characteristics.

Most universities with turfgrass research, teaching and extension programs conduct turfgrass variety performance trials. These replicated plot trials are the best way to determine how individual turf-

grasses perform in your area.

A good thing to remember when planting cool-season turfgrasses is to select at least three top performing varieties and blend these together before seeding. A blend is a combination of two or more varieties. A mixture, two or more turfgrass species combined, is often used where a diverse combination of conditions exist in the same turfgrass area.

The classic turfgrass mixture consists of Kentucky bluegrass, perennial ryegrass and fine fescue. Perennial ryegrass germinates quickly to rapidly stabilize the soil. Kentucky bluegrass and perennial ryegrass will perform best in full sun on moderately fertile, well-drained soils. Fine fescues will provide a good turf cover in moderate to heavy shade and on acidic soils of low fertility.

Mixtures and blends of cool-season turfgrasses work well because the increased genetic diversity provides greater pest resis-

tance. The warm-season turfgrasses do not work well as blends or mixtures because individual varieties or species tend to segregate and produce a patchy appearance.

**COOL-SEASON GRASSES.** *Kentucky bluegrass* is the premier lawn grass of the northern U.S., particularly the Northeastern and North Central regions. It is one of the few cool-season turfgrasses having an extensive underground system of rhizomes, which allows it to rapidly spread and fill in areas as well as to recover from periods of severe stress and injury.

Kentucky bluegrasses have a medium leaf texture, form a moderately dense turf and range in color from light to very dark green. Shade tolerance varies among varieties, but it performs best in open sun on well-drained, fertile soils.

Kentucky bluegrass is susceptible to *Helminthosporium* leaf spot, stripe smut, dollar spot,

## PRINCIPAL TURFGRASSES GROWN IN THE UNITED STATES

Appearance <sup>1</sup>				Maintenance			
Drought	Wear	Color	Texture	Cutting Height (inches)	Nitrogen <sup>2</sup>	Mowing frequency <sup>3</sup>	Rate of Establishment <sup>4</sup>
good	fair	medium-dark	fine-medium	1.5-2.5	2.5-3	medium	moderate
good	good	medium-dark	medium	1.5-2.5	2.5-4	medium	moderate
fair	very good	medium-dark	medium	2-3	2.5-3	medium-high	fast
very good	very good	medium	coarse	2.5-3.5	2.5-3	high	fast
excellent	excellent	medium	medium	0.75-1	4.5	medium-high	fast
excellent	excellent	light-dark	fine	0.75	5-6	high	moderate
excellent	good	medium-dark	coarse	2-3	1	high	moderate
excellent	good	medium	fine	2-4	1-2	low	moderate
good	poor	light	coarse	1	0.5	low	slow
good	poor	medium-dark	coarse	2-3	2.5	medium-high	moderate
excellent	good	medium-dark	fine	0.75	1.5	low	very slow

Rating provided for a given grass. Consult your local Agricultural Extension office concerning specific varieties of interest to you.



stem rust, powdery mildew and summer patch. Bluegrass billbugs, chinch bugs, sod webworms and root feeding grubs are important insect pests of Kentucky bluegrass. Kentucky bluegrasses require a moderate level of mowing, fertilization and irrigation.

**Tall Fescue.** Tall fescue tolerates a wide range of soil and shade conditions and has good heat, drought and wear tolerance. Tall fescue has few serious pest problems, but is subject to the disease brown patch under warm, wet conditions and to stripe smut four to five years after planting.

Tall fescue grows rapidly and requires frequent mowing, but does not tolerate a close cut for extended periods, particularly during hot, dry periods. It is a bunchgrass that does not recover well from injury, thus must be reseeded if bare areas appear.

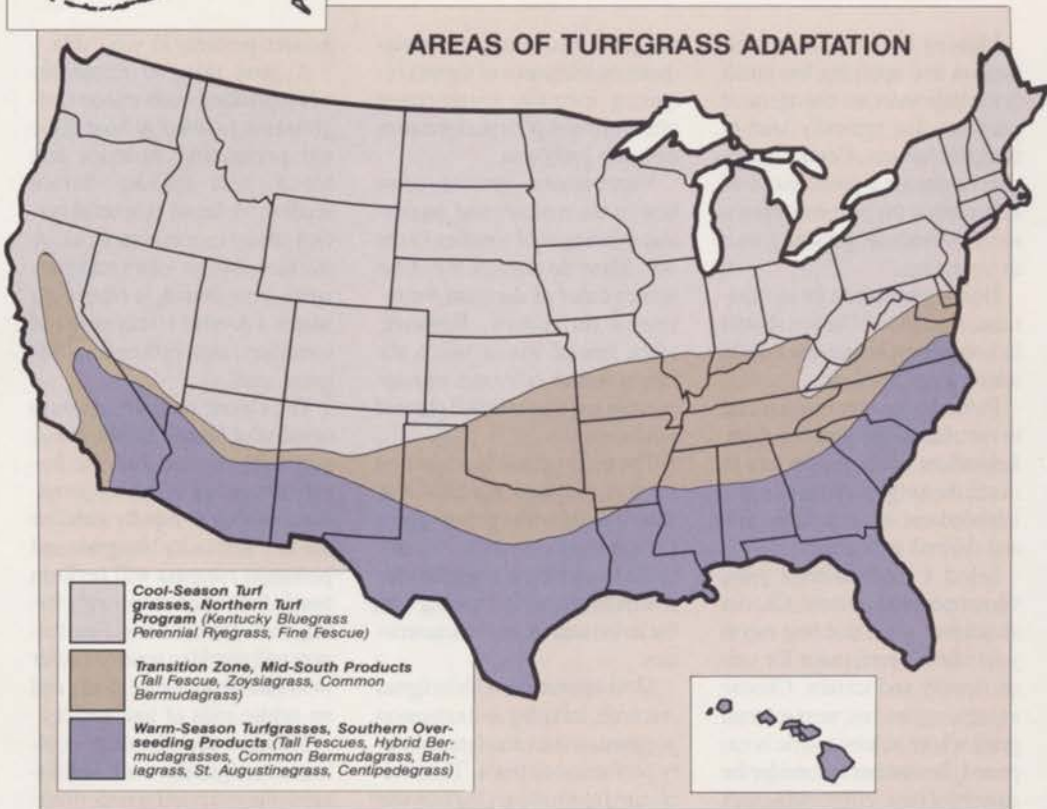
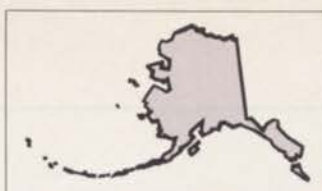
Tall fescue will perform well with a minimum of care. It is commonly grown in areas too hot for other cool-season turfgrasses and winters that are too cold for the warm-season turfgrasses.

K-31 is a tall fescue cultivar that has performed well for many years. A new generation of tall fescue cultivars referred to as "turf-type" tall fescues has been developed that is more shade tolerant and finer leaved than K-31. These characteristics become more evident as the turf matures. Claims of improved disease tolerance, easier mowing, lower growth habit, better wear and drought tolerance have recently been made; however, some of these claims have yet to be fully documented.

**Fine Fescues** — *Chewings*, *creeping*, *hard* and *sheeps* fescues — are very fine-leaved grasses. These grasses are capable of performing well under poor soil conditions including low fertility and low pH. They have good tolerance to drought and shade.

Fine fescues can perform well with low maintenance and are well suited for many turf situations. Fine fescue tolerates drought and infertile soil conditions better than Kentucky bluegrass.

These characteristics make it an excellent companion with bluegrass where it will provide turf cover in shady, drought prone sites. However, the fine fescues may not persist in sunny locations exposed to high temperature extremes or heavy traffic. Fine fes-



cues will also not do well when soils are excessively wet or poorly drained, especially during hot weather.

**Perennial Ryegrass.** This species has gained acceptance during the last two decades as an important long-term, good performing turfgrass when used alone or preferably in mixtures with Kentucky bluegrass and the fine fescues. The new turf-type perennial ryegrasses have marked improvements in appearance and persistence when compared to types used extensively in past years.

The perennial ryegrasses have a rapid germination rate and are easily established. They require similar conditions and management as the Kentucky bluegrasses for best performance.

The newer turf-type perennial ryegrasses are darker green, lower-growing, finer-textured, more dense and are more tolerant of heat, cold and shade than earlier varieties. Although newer varieties are more resistant to insects and diseases than older varieties, the turf-type varieties are subject to diseases such as brown patch, red thread, pink patch, dollar

spot, crown rust and stem rust when environmental conditions are favorable for these diseases to develop.

Poor mowing quality often occurs in the spring and early summer for many of the perennial ryegrasses. Mowing with a reel type mower, especially during these periods, will provide a better cut and appearance.

**Annual (Italian, Common) Ryegrass** is an annual bunchgrass that should only be seeded when temporary cover is desired. It establishes quickly, often at the expense of desirable grasses, and persists for only one season. It is very vigorous, grows well in sun or shade and makes a temporary lawn in four to five weeks.

It is a good choice for temporarily keeping down the mud and dust until a permanent grass can be planted. In general, avoid purchasing seed that contains a high percentage of annual ryegrass unless you plan on replanting in the near future.

**WARM-SEASON GRASSES.** *Bermudagrass* is extremely drought resistant and grows well on all

but poorly drained soils and shady sites. It must be fertilized well, mowed low and often and planted in full sun for high-quality turf.

*Bermudagrass* withstands wear, establishes quickly and recovers rapidly from injury. Its rapid spread can often lead to invasion of areas (e.g. flower beds) where it is unwanted.

Common bermudagrass can be planted by seed or sprigs. It is found over most of the Coastal Plain and Piedmont regions. Common bermudagrass, compared to the hybrid cultivars, produces a more open (weed-prone) turf, has a wider leaf, is less cold tolerant and exhibits more unsightly seedheads, but requires less maintenance.

*Tifway* and *Tifway II* are general purpose hybrids but both require intensive management. Their resistance to frost results in a longer growing season. They are finer in leaf texture, denser and exhibit less seed heads than common bermudagrass, but must be vegetatively planted.

*Zoysiagrass* is a low, slow-growing, sod-forming grass that

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## Turfgrasses

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makes a dense, wear-resistant turf. It has good drought resistance. Zoysiagrass grows in full sun or moderate shade, requires less mowing and is easier to keep out of flower beds than bermudagrass.

Zoysiagrasses grown in the United States are planted vegetatively from plugs, sprigs or sod. Most commercial varieties planted as plugs establish and recover from injury slowly. Newer varieties are being developed that establish faster and recover from injury more quickly. Once established, zoysiagrass produces a dense, weed resistant turf.

The most commonly grown zoysiagrasses include varieties such as emerald and Meyer. However, tremendous interest exists for development of both new vegetatively propagated and seeded varieties. In the near future, many Agricultural Experiment Stations will begin evaluating new zoysiagrass varieties for adaptation in areas throughout the

United States.

*Centipedegrass* is a slow-growing, light-green, coarse-leaf turfgrass that grows well in full sun to moderate shade. It is adapted for use as a low maintenance, general purpose turf. It requires little fertilizer, infrequent mowing and does not become a problem around flower beds. This turfgrass does not tolerate traffic, compaction or high soil pH.

Centipedegrass can be established from seed or sprigs. Varieties such as Common, Centennial, Tennessee Hardy and Oklawn are available in some regions, but are more common to the Southeastern United States.

*St. Augustinegrass* is a medium-dark green, coarse-leaf grass that is well adapted to sunny or shady locations near coastal areas in the Southern U.S. It forms a turf which is moderate to low in wear resistance, but has a tendency to become thatchy when heavily fertilized.

*St. Augustinegrass* is a very vigorous, fast spreading grass that can be easily controlled if it invades flower beds. It is suscepti-

ble to the disease brown patch and to chinch bugs and must be vegetatively planted. Raleigh *St. Augustinegrass* is a cold-tolerant variety that has exhibited good disease resistance. Common, Floratam and Seville are not as cold tolerant as Raleigh and are best adapted for areas near the coast line in the Southern United States.

*Buffalograss*, unlike most of the turfgrasses, has both male and female plants. In the past, buffalograss was only considered for use on low maintenance areas and was not considered of any major consequence in turf production. It was used in native plantings because of the male flower that some find attractive and that range in color from white to orange.

With the tremendous interest in water conservation, buffalograss has received considerable attention for use on turf sites. Texoka was one of the first improved seeded buffalograsses used in the Midcontinental U.S. Only until recently have improved turf-type buffalograsses become available.

Prairie and NE 84-609 are two

newly released varieties specifically for turf use. They are both female plants that must be vegetatively propagated to ensure genetic purity. These new varieties are best adapted from the South Texas Plains north into Nebraska. Both will perform best on heavier soils with neutral to alkaline pH in full sun. They have good wear tolerance and survive well on moderately compacted soils.

In comparison to most warm-season grasses, buffalograss has excellent cold and heat tolerance and drought resistance. These new varieties are recommended for use as a minimal maintenance turfgrass for roadsides, industrial parks and non-irrigated landscape sites throughout the southern Midcontinental U.S.

With modest fertilization and minimal supplemental irrigation, they will provide a good quality turf for most residential lawns, domestic landscape sites and golf course roughs.

Buffalograsses perform best when mowed at two to four inches. Although the improved turf-

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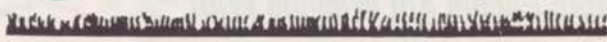
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# EYE-CATCHING WILDFLOWERS

## OFFER AN ATTRACTIVE LANDSCAPE ALTERNATIVE

*Wildflower use isn't expanding quite as fast as it once was, but interest is still strong from an environmental point of view.*

*By Julie A. Evans*

WHEN THE OWNERS of Dawson Creek Corporate Park in Portland, Ore., called upon Bizon Landscape Maintenance Co., Wilsonville, Ore., they requested something "different" for their undeveloped land. "They wanted something other than common flowers," said Steve Bizon, president. "I suggested they try wildflowers."

The owners agreed, and wildflowers now cover nearly three acres of previously undeveloped grounds. The flowers add colorful contrast to the lakes, fountains and finely mowed lawns that dominate the remaining landscape. In addition, perennial wildflowers are planted in islands in the parking lot.

From coast to coast, people are turning to wildflowers for landscape design alternatives. Wildflowers can be found on golf courses and roadsides, in residential areas and near commercial buildings. Many wildflower devotees have simply rediscovered the beauty of native plants and flowers. Others have been encouraged by the nationwide "back to nature" movement that focuses on conservation and limited use of pesticides and fertilizers.

Wildflowers are catching on across the country gradually, said Crystal Fricker, plant breeder for Pure Seed Testing and researcher for sister company Turf-Seed, Hubbard, Ore. "Once people travel through a state with a lot of roadside wildflowers, they want to learn more" about the native plants, she said.

To meet the demand for consumer education, seed companies and associations are fielding inquiries and distributing literature.

Elizabeth Carmack, public information coordinator for the National Wildflower Research Center, Austin, Texas, reports that membership at the center has grown from 1,000 in 1982 to nearly 16,000 in 1991, with the goal of reaching 35,000 by 1994. Among its members: landscape architects and contractors, as well as the general public.

The center maintains a clearinghouse that includes more than 250 fact sheets, bibliographies and lists of commercial sources of native plants, as well as names of resource people and related interest groups.

Gene Milstein, president of Applewood Seed Co., Arvada, Colo., estimates the market for wildflowers, including resales, is somewhere between \$25 million and \$50 million. As chairman of the Wildflower Group of the American Seed Trade Association, Milstein said, that wildflowers are still a growth industry.

"It isn't expanding as fast as it used to be, but consumer interest still appears to be strong from an environmental point of view and an awareness point of view," Milstein said.

Like others, Milstein attributes strong interest to the xeriscape movement and a national effort to "save the plants," as well as the beauty of the native plants.

According to Marie Pompei, agronomist for Lofts Seed, Bound Brook, N.J., demand for wildflower seeds has been strong enough to limit the supplies of some seed varieties.

"We've been working with wildflowers for the past 14 years, but the last five years have been the busiest," Pompei said. "Lady



Bird Johnson has done a lot to promote wildflower use for the state highways."

Pompei also noted conservation of time and resources and nostalgia as reasons for wildflower popularity.

**WILDFLOWER BENEFITS.** Wildflowers require minimal maintenance. For this reason, they are often the flowers of choice for roadsides and underdeveloped areas such as new housing developments. Wildflowers also offer a solution to hilly, steep landscapes that are difficult to mow. And increasingly, wildflowers are being planted on residential and commercial projects as a complement — not substitute — to traditional landscape plantings.

Despite their low maintenance needs, wildflowers do require the expertise of a landscape contractor for design and upkeep.

According to Milstein, wildflowers do best where there's ade-







Wildflower sod is an alternative to seed planting (left). Wildflowers are becoming popular on home, commercial and industrial properties (p. 40). Photos: Applewood Seed.

quate moisture. The strongest areas for plantings are the Northeast, Midwest, Southeast and West Coast — areas with the greatest rainfall. But the right mix of wildflowers, especially those native to the region, can thrive in drought-riddled or arid regions, as well.

To find the best mix for a particular area, it's important to consult with a seed company or distributor. Most wildflower seed producers offer consulting services, according to Milstein.

"Normally, we recommend that people first consider what they want to achieve," Milstein said. "Do they want a native planting, are they looking for annuals or perennials, do they look for color?"

"Do they want to try irrigation or are they going to rely on natural rainfall? Are they in a position to do soil preparation? We normally recommend mixtures over individual species because they tend

to bloom over a longer period of time."

**PREPARATION.** Wildflower planting dates vary by region and by mix. For most of the country, early spring seedings bring good results. Seed specialists at Lofts Seed say that late summer plantings can bring excellent results, but you must schedule seeding at least eight to nine weeks before the first expected frost. Late fall seedings are not advisable.

When it's not possible to plant during optimum seeding dates, winter dormant seeding is an option.

Central and southern Florida and southern Texas require special consideration; fall and early winter seedings bring best results and summer seeding is not recommended.

Weed control is critical to health and maintenance because weeds tend to compete vigorously with wildflowers. Unfortunately, eli-

minating weeds is no easy task. Prior to planting, Milstein recommends removing weeds by pulling and tilling or by applying an herbicide such as Roundup.

After weeds have been removed, Brian O'Neill, Wild Meadows, Haverford, Pa., recommends a two-week wait between herbicide application and the next step, mowing the area as short as possible. Next, O'Neill said, rake the area with a garden rake to loosen the soil surface but avoid deep tilling, which stimulates weed growth.

To plant on bare soil, seeds should be broadcast evenly with a cyclone spreader, or by hand (in small areas). Planting rates vary from about five pounds to eight pounds per acre, depending on the regional mix.

Mulching is an option for areas where wind, water or other environmental factors cause seed loss. For steep slopes and other hard-to-reach areas, hydroseeding is an option. Check with a seed company consultant for special considerations.

Wildflowers need moisture to establish good growth. If relying on rainfall for moisture, planting should be done in the spring when rainfall is heaviest. If there is little rainfall after seeding, moisture must be added and maintained for several weeks. After seedlings are

sod. The plants have developed roots and grow on five-square-foot shallow mats. The wildflowers grow in a shallow layer of planting mix spread over fabric.

Wildflower Carpet is comprised of sun-loving perennials, including Black-Eyed Susan, Purple Coneflower, Dame's Rocket and other varieties. Pinks, whites and purples bloom in the spring, and yellows and reds in the fall.

Boaz Meir, Meir's Drip Waterworks and Beautiful Landscapes, White Plains, N.Y., chose wildflower sod for a steep slope on a residential installation. Meir, who calls himself an "originator," said he selected wildflowers for their beauty and for their ability to stabilize slopes.

The flowers did not fare well their first year, however, which Meir attributes to improper maintenance.

"We lost a lot of seeds by not mowing. Some weeds became dominant," Meir explained.

This year, the flowers are performing well with proper mowing and maintenance, Meir said. So well, in fact, that he's acquired new business from admiring neighbors and passersby.

**MAINTENANCE.** Although wildflowers require minimal maintenance, they still need aggressive weed control to survive. Some

## Wildflowers offer an alternative option for hilly, steep landscapes that are difficult to mow and maintain.

established, watering may be reduced in most regions.

For an alternative to seed planting, Applewood Seed Co. offers Wildflower Carpet, a wildflower sod that installs similar to grass

weeds are likely to return, despite the best preemergent efforts.

For small areas, hand pulling weeds may suffice, but larger areas call for more aggressive tactics. This includes mowing the



area about three times per season, with a mowing height above the tops of the flowers.

Postemergent herbicides also help combat weeds, but are generally recommended for spot-treatment only. Evelyn Dennis, seed manager for LESCO, Rocky River, Ohio, advises against using selective herbicides for weed control.

"I would be hesitant to do that because they are delicate plants. There just isn't a selective herbicide that you can use that wouldn't harm the wildflowers," Dennis said.

For persistent perennial weeds, she recommends a systemic non-selective herbicide, for spot treatments only.

Fertilizer is rarely recommended for wildflower maintenance because it stimulates weed growth. Topsoil usually harbors a large reserve of dormant weed seed.

**DESIGN.** Whether creating a wildflower meadow or garden bed, certain design considerations must be taken into account for op-

timum results.

First, lower blends are often the preferred choice for residential applications. Higher blends, such as those seen along roadsides, can look weedy. Also, some mixes have meadow grasses in them. To avoid unwanted grasses, specify the mix without them. Keep in mind, however, that native grasses add support and protection to tall

lo. Therefore, the selection of perennials is paramount to the design.

"Keep in mind that what you see the first year is not what you're going to see the following year," Steinmeyer said. "Make sure that the perennials in the mix are what you have in mind for the long term of the design."

Also consider that wildflowers

maximum results can be achieved.

**CONCLUSION.** Despite their lower maintenance needs, wildflowers can actually boost a landscape business several ways.

First, wildflowers are still considered somewhat of a novelty in residential and commercial landscape applications. Client referrals and word of mouth advertising can make you the local expert.

Also, wildflowers can free up mowing and maintenance time, thereby lending more attention to other areas of the landscape.

Finally, wildflowers are going to remain popular, as more and more clients join the "back to nature" movement that characterizes much of the '90s. As long as clients seek environmentally conscious options, the landscape industry should respond with the products and services they demand.

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

## Although wildflowers are low maintenance, they still need aggressive weed control to thrive.

flowers.

Second, the ratio of annuals to perennials in wildflower mixes is important. Annuals will bloom the first year, then take as many as three years to reseed, said Barb Steinmeyer, project director for Habitat Landscapes, Aurora, Co-

and bedding plants are generally on different blooming schedules. "Wildflowers tend to bloom in early spring to midsummer," Milstein said. "Bedding plants are just the opposite. They tend to bloom in summer and into fall." By coordinating plantings,

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# GAINING ACCEPTANCE:

## HIGH VISIBILITY APPLICATIONS GENERATE INTEREST IN HYDROSEEDING

PEOPLE LAUGHED when hydroseeding was introduced some 40 years ago, said Neil Reinecker. "Twenty years ago the public still thought it was some mysterious process. Ten years ago customers began to take notice. But today, hydroseeding is a household word."

Public awareness of hydroseeding is helped by its high visibility on highways and housing subdivisions, said Reinecker, vice president of sales and marketing for Reinco Inc., Plainfield, N.J. "With that plume of spray, hydroseeding really catches the eye."

A technology that's been around for more than 30 years "is bound to penetrate public thinking," added Don Sharp, sales manager for Finn Corp., Fairfield, Ohio. "Landscape contractors and lawn care operators are getting more questions about it from customers who see hydroseeding as an option."

For that reason, Sharp said, his biggest market is becoming the small and midsized operator "who must respond to the public interest in hydroseeding."

Reinecker agreed that smaller machines "are definitely in vogue." "Our lowest priced unit several years ago was \$14,000, but now we sell units for half that price."

In an effort to scale down, Finn now offers a portable 300-gallon hydroseeder, and Reinco sells a 650-gallon machine. With such smaller units, lawn and landscape maintenance firms can enter hydroseeding for an initial in-

*Running several years behind market capacity, hydroseeding opportunities abound in the lawn and landscape maintenance industry.*

*By Mark Ward*

vestment of \$6,000 to \$8,000.

By contrast, the two manufacturers also sell hydroseeding units with capacities exceeding 3,000 gallons and selling for more than \$30,000.

One manufacturer aiming exclusively for the low-end market is Little Squirt of Alexandria, Va. The five-year-old firm introduced portable hydroseeding units, said President Jim Lucore, "so the smaller landscapers could do touch-up jobs that bigger hydroseeding companies wouldn't handle."

Companies specializing in hydroseeding indicate they are al-

Norman Gray Jr., president of Transit Seeding, Norfolk, Mass. "Homeowners call us all the time," he said, "because public perception about hydroseeding is finally up to speed."

Both suppliers and operators agree that lawn and landscape maintenance firms must address growing consumer demand for the service. But they differ on whether operators should purchase their own equipment or subcontract the work to a specialist.

**BUSINESS BENEFITS.** "The first question you should ask is why your business would benefit by

said. "With sod installations or conventional spreading, you often don't get proper soil preparation and watering. But the slurry in hydroseeding holds moisture and temperature conditions in place until seeds germinate."

Compared to straw blowing, Sharp said, hydroseeding initially costs more to apply. But straw does not lay down moisture or nutrients, and is often blown off site by wind. Once seeds germinate, the operator must revisit the site to remove the straw.

Reinecker agreed hydroseeding can be a preferred planting method because seeds are presoaked and therefore germinate more quickly. "Hydroseeding gives you another planting option," he said, "so that for any given job you can choose from the most appropriate method."

The economics of hydroseeding are also attractive, added Reinecker. According to annual Reinco cost studies, the profitability of hydroseeding compares favorably with other landscaping and lawn maintenance services. He also suggested hydroseeding can generate new business since the work is highly visible to passersby.

Hydroseeding is appropriate in wide open areas as well as in tight spaces. "For large areas, say over a thousand square feet, hydroseeding can be applied much faster than sod or conventional planting," Dietz said. "Thus your labor costs are reduced, and the materials are also less expensive than sod."

Areas with significant slopes

**Affordable equipment is opening up a new hydroseeding market for maintenance contractors.**

so responding to the demand for smaller projects. "We've obtained equipment that lets us serve both the larger and smaller jobs," said Ron Dietz, president of Dietz Hydroseeding, Van Nuys, Calif.

His sentiments are shared by

adding hydroseeding as a service," Sharp said.

Hydroseeding offers agronomic advantages over other methods of planting because "seeds have brains and only germinate when conditions are right," Sharp



are easily planted by hydroseeding, he added. Other projects especially suited for hydroseeding include erosion control sites, low-lying wet areas where footing is uncertain or mature neighborhoods where access and obstacles are problems.

"But in America today," Gray said, "the bottom line for many homeowners is getting an instant lawn. Hydroseeding gives you an alternative to sod. You can tell customers the lawn won't be quite as instant, but it will come up quickly — and for a lot less cost than sod."

In fact, Gray does frequent business for developers and homeowners who are hosting open houses or private gatherings. "The event is only a day or two away. They don't want bare earth for all their guests, and they don't have enough time to lay sod. So they basically call my company in to paint the grounds green."

**SMALL COMPANIES, TOO.** Because the process is so visible in highway and subdivision projects, hydroseeding is often identified with large landscape contractors. Indeed, these firms still comprise a substantial share of equipment sales for Reince, Finn and a third major manufacturer, Bowie Industries of Bowie, Texas.

Five years ago, Lucore of Little Squirt scouted the Washington, D.C., area for hydroseeding contractors. The cable television firm for which he then worked was often asked to restore lawns disturbed by laying cables. "But on-

ly big contractors offered hydroseeding, and they wouldn't touch a 4-inch-wide strip of turf. With their big rigs and equipment, small jobs weren't economically feasible."

When Lucore considered building a portable hydroseeder, some suggested a small nozzle would clog too easily with the mulch fiber contained in the slurry. But, he said, he developed a recirculation hose "that keeps the mulch moving."

Now, he said, hydroseeding is within reach of smaller contractors "who can do a \$60 job for \$200 that bigger companies wouldn't touch."

Sharp suggested, however, that with highway systems being completed and housing construction slow around the country, some larger firms may be purchasing smaller hydroseeding machines. But Lucore noted that of 2,900 sales leads his firm recently generated, only 200 came from companies operating with larger equipment.

"The rest are small lawn care

operators and landscapers who are looking to enter hydroseeding," he said. He does not suggest portable units will replace larger machines, and believes the latter will always have a role in the industry.

"But now that affordable equipment is available, a whole new market is opening up for operators to do small hydroseeding projects. Plus it's a market they'll have to themselves, since the economics aren't there for bigger companies."

Dietz and Gray, both hydroseeding specialty contractors, said there are two sides to the small-project theory.

"I agree that a lot of small to midsize LCOs are interested in hydroseeding because their customers are asking about it," Dietz said, "but I disagree that companies like mine can't do these projects. We subcontract for many smaller operators."

Transit Seeding also subcontracts for numerous small and midsize lawn maintenance firms, according to Gray. "Our mini-

**Hydroseeding is now within the reach of smaller maintenance operators. Photo: Finn Corp.**

mum is 1,000 square feet, which isn't that big an area. But we'll do even smaller jobs for clients who are providing us regular volume."

#### **BUY OR SUBCONTRACT?**

Once an operator has decided to offer hydroseeding as a customer service, the company can either subcontract the work or perform the job with its own forces. The issue boils down to cost vs. control.

"The decision isn't black and white, whether to subcontract or buy your own equipment," Reinecker said. "First look at the size of the jobs you're doing. If you're doing large tracts, it's ridiculous to subcontract."

But when the work is smaller, Reinecker advised, operators should find out what local hydroseeders are charging. "The cost for seed and materials varies around the country," he said, "so you must make the determination whether your company can do hydroseeding profitably at what others charge."

Reince periodically conducts cost studies, "because virtually half our inquiries are from prospects lacking the expertise needed to evaluate whether to buy a machine." It's Reinecker's belief that hydroseeding units often prove to be profitable investments.

Lucore said his 300-gallon unit can perform up to a dozen residential jobs per day. "You don't need a big rig to haul the machine, and you don't have big material costs tied up because it only takes two





tankfuls to do 10,000 square feet," he said, "so that's why a lot of my buyers are companies with two or three employees."

Since the initial investment is within the reach of smaller operators, Lucore said, he recommends purchasing equipment soon after any decision to offer hydroseeding. "Most homeowners want instant results and want you to start tomorrow," he said, "so it's hard to generate work if you don't have the machine first."

According to Sharp, the money an operator pays a hydroseeding subcontractor in one year is often enough to buy a machine outright.

"It's like the decision between buying or renting a home. When you pay a mortgage, you own something. But when you rent, you've got nothing to show for your money."

Beyond the economics, job control is a second key reason Sharp recommends performing work inhouse; subcontractors cannot serve all clients with equal promptness. Reinecker agreed and cited the booming 1980s as a time when most hydroseeding specialists had backlogs, often responding slowly to work requests.

"In theory a specialist can perform work more efficiently than a generalist, but you don't need to be a rocket scientist to do hydroseeding," Sharp said. "Any reputable lawn care operator or landscape contractor already has the agronomic knowledge to do the site evaluations needed for hydroseeding."

He added that the ability to spread grass seed evenly is built into the equipment, and is not so much dependent upon the user.

According to Reinecker, a specialist that has "done hydroseeding for 20 years will certainly know his business, but I believe a lawn care or landscaping company can serve its customers' needs just as adequately with only a year of experience."

According to Bob Jones, sales manager for Bowie Industries, hydroseeding is "more technical than other seeding methods.

**The slurry mix in hydroseeding holds moisture and temperature in place. Photo: Finn Corp.**

You're dealing with sophisticated machinery that requires more training. And you have to be much more careful when applying, or you'll end up throwing away your profits."

Dietz countered: "People may say they can put you in the hydroseeding business for \$6,000. So I guess anybody can buy a machine and call themselves a

justify the investment. You have costs not just for equipment but for needed accessories, materials and training."

Gray noted that keeping an inventory of slurry materials is a logistical challenge. For maximum efficiency a warehouse is needed, he said, "so the operator can perform work on demand. Mulch fibers are commodities

## Ease of entry in the hydroseeding business is leading to concerns over professionalism.

hydroseeder, just like anybody can buy a mower and call themselves a lawn care company. You can have your own machine—but by the same argument, you can also have your own sod farm."

Saying there is "more to hydroseeding than meets the eye," Dietz explained the process requires "product knowledge you can't buy" to calculate proper slurry combinations and amounts.

Indeed, he is concerned the public may sour on hydroseeding as "many marginal operators are entering the field and giving its reputation a black eye."

At least in his area, Dietz said, most operators who tried hydroseeding have failed and since sold their equipment. "I don't know how a company could afford to offer hydroseeding, unless they had subcontracted out the work for several years and finally built up enough reliable business to

whose availability can vary, so you need the material on hand. And since prices can vary widely, warehousing lets you buy and stock materials when prices are low."

Smaller machines at first seem attractive, because of the lower initial investment. Because the units cannot perform larger volume jobs, Gray argued, the investment can only be justified by a steady volume of separate small jobs.

"Big jobs build volume with a smaller number of sales," he said, "but to build volume through a large number of small jobs means you really have to hustle. It's not easy. Customer mailings and advertisements are expensive. That's why I get calls all the time from people asking if I'd like to buy repossessed machines."

Gray is also worried about public perception to increased firms

handling hydroseeding. In his area, most operators of small machines don't do callbacks and don't offer guarantees. Both he and Dietz believe contractors offering hydroseeding should be licensed to protect both consumers and the industry.

Hydroseeding subcontractors typically offer free estimates as a service to lawn and landscape firms, said Gray and Dietz. "We will do everything," explained Dietz, "including surveying the site, making agronomic recommendations, sitting down and explaining everything to the customer and working with all parties to make sure the customer

gets the best lawn for the best price."

Hydroseeding manufacturers and specialty contractors also differ on their outlooks for the future. As markets expand, manufacturers see the process being used by growing numbers of lawn care operators and landscape contractors, especially among small to mid-sized firms. But Gray and Dietz see public demand for cost-efficient hydroseeding leading to increased specialization.

However, all sides agree consumer acceptance and demand for hydroseeding is on the upswing, particularly among smaller applications where the technology has not yet been fully exploited.

"Right now hydroseeding is about five to seven years behind the available market," said Lucore, "so there are tremendous opportunities out there for LCOs."

Reinecker agreed: "For 25 years most hydroseeding improvements have been in the slurry materials and not the basic equipment itself. The emphasis has been on catching up with the market, and hydroseeding still has a long way to go before reaching its real potential."

For his part, Sharp won't flatly state all lawn and landscape companies should offer hydroseeding as a customer service, whether on their own or through a subcontractor. "But I believe every operator should check it out. The public has taken notice and hydroseeding is something every company will have to address."

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





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# ELIMINATE BROWN TURF THROUGH QUICK DIAGNOSIS

*About 75 percent of all irrigation problems can be attributed to electric valves, while programming errors account for 75 percent of all controller malfunctions.*

*By Paul Roche*

"HELP, MY IRRIGATION system isn't working." Quite often this is the desperate voice of a homeowner midseason when his irrigation system has failed. Since you just completed a new landscape at the residence and mentioned that you were familiar with irrigation systems, the owner thinks you're the expert and expects you to solve the problem.

Don't worry, irrigation problems are generally not that difficult to diagnose. Irrigation problems can be broken down into two categories: electrical and hydraulic.

Electrical problems are those associated with the power supply, irrigation controllers, zone wiring and valve solenoids. These types of problems most often occur in older irrigation systems or systems damaged from various forms of construction.

Hydraulic problems consist of difficulties associated with the movement of water from the water source to the sprinkler heads. Assuming the system was designed and installed correctly, a malfunctioning sprinkler or valve is generally the culprit in this case.

The three major components of an irrigation system are: electric valves, sprinklers and controllers. This article will take a closer look at these components, as well as discuss the symptoms and solutions to potential hydraulic and/or electrical problems.

**ELECTRIC VALVES.** Electric valves operate hydraulically, but are electrically activated. Since 75 percent of all irrigation problems can be attributed to electric valves, it is a good idea to have a thorough

**Typical diagram of closed and open bronze valves. Illustration: P.I.E. Supply.**

understanding of how a valve works.

The electrical portion of the valve is the solenoid assembly. It controls the flow of water between the upstream and downstream side of the valve.

When a solenoid is de-energized, water enters the upper chamber of the valve (B) through a port on the valve body or the diaphragm (A). Since the area on top of the diaphragm is larger than the seating area on the valve body (E), the water pressure keeps the valve closed.

When the solenoid is electrically activated, the coil (C) lifts the plunger over the downstream port (D), and the pressure above the diaphragm is lowered, allowing water to flow through the valve

and downstream.

The valve will remain open as long as the solenoid is energized. Some valves will have a manual bleed screw (F) that will permit the valve to be manually operated when removed.

The three most common valve problems are: The valve will not open, the valve will not close and the valve weeps.

*If the valve will not open:*

- Check to see if the flow control stem is open by turning it counterclockwise.

- There may be an internal blockage in the valve.

Open the valve manually with the manual bleed screw. If the valve opens, there is either a blockage in the solenoid port or there is some type of electric

cal problem.

- Disassemble the valve and carefully clean the solenoid port.

- Test the solenoid coil using a volt ohmmeter. By reading the resistance across the two leads of the coil, check with manufacturer recommended readings for the particular valve. Generally a good reading will be between 13 and 25 ohms.

If needed, replace coil and retest the valve. If the resistance reading is correct, turn the water off and remove the solenoid. Clean the entire solenoid assembly since particles can enter the solenoid assembly and lodge the plunger. If the assembly cannot be cleaned, replace it.

- Test the system for power. Using a volt meter, check for power at the solenoid by activating the zone in question at the controller. Test for 24 volts across the power lead and the common wire. If no voltage registers, try sticking the meter lead from the common wire into the earth. If you still get no voltage, you have a broken wire or defective station on the controller.

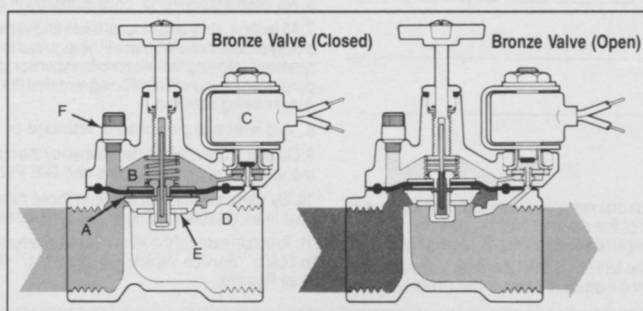
If you do get a voltage reading, you have a break in the common wire or a bad connection somewhere between the last valve that operates on that common wire and the one you are testing. Check your systems for any recent construction that may have nicked or cut the wires. If you cannot find anything, locate a wire fault finder and track down the break.

*If the valve will not close:*

- Remove the solenoid assembly and clean all ports including the diaphragm. Clean the post assembly thoroughly since the plunger may be lodged open and is not sealing the upstream port.

- The diaphragm may be dam-

*(continued on page 50)*





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## Irrigation Problems

(continued from page 48)

aged or ruptured or may not be seating correctly. Remove the diaphragm and inspect it closely. Replace diaphragm if necessary.

- The valve may be oversized and preventing pressure differential between the upstream side of the valve and the downstream side. If the valve has a manual flow control stem, try turning it down clockwise several turns. This will help create a larger pressure differential through the valve. Check to see what the manufacturer recommends for valve sizing. The valve may have to be replaced.

### If the valve weeps:

- In this instance, the diaphragm may be damaged. Remove the diaphragm and inspect the seating area. Look closely for nicks or scars on the seating area. Replace the diaphragm if necessary.

- The valve body seat may be scratched, nicked or need cleaning. Inspect and clean if needed.

**SPRINKLERS.** The sprinkler head is arguably the most important



component of an irrigation system. The best way to diagnose a sprinkler problem is to check the system under operating conditions.

Unfortunately sprinkler problems generally yield dead grass and plant materials before a problem is diagnosed. The most common sprinkler problems and their symptoms are:

1. Physical or mechanical prob-

lems; and

2. Incorrect operating pressure.

### Physical or mechanical problems:

- From the controller observe individual sprinklers by allowing each zone to run long enough to see at least two complete sprinkler revolutions (on rotors) or one minute for sprayheads.

Physically inspect sprinklers for damage that can occur from moving equipment, traffic or van-

Testing a controller for 24-volt output. Photo: P.I.E. Supply.

dalism. Make sure sprinklers are not out of alignment and, if necessary, re-adjust the sprinkler so that it is perpendicular to its grade of installation. Replace damaged sprinklers.

- Observe the rotation of part circle sprinklers and witness the proper arc stop. If necessary re-adjust the sprinkler's arc stop. Carefully observe sprinklers that are installed next to a pavement or building.

### Incorrect operating pressure:

- Sprinklers that are operating at the wrong pressure will yield an inefficient water distribution pattern. Low operating pressure can be discovered by a poor break-up of the sprinkler's discharge streams, usually resulting in excess water applied to the end of the sprinkler's throw. Because high operating pressure tends to mist at the sprinkler's discharge stream, water distribution must be observed.

- Check sprinkler operating pressure with a pilot tube and

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gauge. Hold the pilot tube ¼ inch from the discharge stream of the sprinkler's range nozzle. Record pressure reading and compare it to the manufacturer's recommended operating pressure for that nozzle and spacing.

- High pressure readings can indicate an increase in originally designed operating pressure. If a high pressure condition is affecting the entire system, a pressure reducing valve may be necessary. If the high pressure is affecting only one zone, decrease the zone pressure by throttling down the flow control stem on the electric valve or install a pressure reducing valve.

- A low pressure reading indicates a change in the system's available pressure or a restriction in the system. First make sure all gate valves are open. In affected zones, make sure the flow control stems are in the open position — turn the stem counterclockwise. If only a few sprinklers are affected, check inlet screens, remove screens and flush. If low pressure still persists, consider reducing the nozzle sizes on the

affected zone. This will increase your pressure, but may reduce the effectiveness of the coverage and additional run time may have to be increased.

- A low pressure reading on every zone indicates a possible change in the system's available pressure at the water source. As a last resort, a booster pump may be necessary to increase the pressure and to operate the system correctly.

**IRRIGATION CONTROLLER.** Today's irrigation controllers are extremely flexible and reliable. Most mechanical failures will occur within the first week of operation. The most common controller problems are:

1. programming error
2. total system failure
3. no output

*Programming error:*

- Completely read the owners manual before programming the timer. All controllers need three programming inputs for proper operation: start time, station run times and schedule (days on).

If one of these functions is miss-

ing your controller will not operate. Programming errors account for 75 percent of all controller malfunctions.

*Total system failure:*

- Test the controller's power supply with a volt meter and see if the voltage meets the manufacturer's recommendations.

- If there is no power, check the fuse and/or breaker at the power source and replace as necessary. Test the power supply again.

- Check the controller by looking for any obvious problems such as disconnected wires or blackened areas on the circuit board. Reconnect wires if necessary and replace any boards.

- Check the fuse or circuit breaker on the controller's power supply, and replace or reset if needed. Never replace a fuse that does not meet the manufacturer's recommendations since it could cause permanent damage to the controller. If the controller still malfunctions, return controller to an authorized service center.

*No output.*

- Test each station at the controller's output terminal strip for

24 volts. To do this, first manually select station one on the controller and test for voltage between station one and the valve common wire with a volt meter. If 24 volts are present, the problem lies in the wire or the electric valve solenoid.

- Check the field wiring and valve solenoids by referring to the section "if valve will not open." Generally a whole series of valves would not fail unless all the zone wires were cut or the valve common was cut. Use your wire tracking equipment or contact your irrigation distributor technical services department for assistance.

In conclusion, it is a good idea to contact your irrigation supplier and get product information on all valves, sprinklers and controllers used in your projects. Ask for any available maintenance guides and service videotapes. Also, make it a point to learn how to use a volt ohmmeter. Hopefully these tips will help you become better at diagnosing irrigation problems.

*The author is vice president of P.I.E. Supply Co., Milford, Conn.*

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# COMMERCIAL PARTICIPATION THRIVING AT POWER EQUIPMENT EXPO

THE EIGHTH ANNUAL International Lawn, Garden and Power Equipment Expo returns to the Kentucky Fair and Exposition Center in Louisville, July 28-30.

Approximately 25,000 participants are expected to attend the event, which features an expanded commercial demonstration site and free seminars for the maintenance professional.

This year, an estimated 600 manufacturers and suppliers of lawn and garden products, outdoor power equipment and related products will be exhibited on more than 1 million net square feet of interior and exterior space.

This includes an expanded 169,475 net-square-foot outdoor demonstration area for commercial product users.

"The commercial demo area last year exceeded our expectations," said Warren Sellers, show director. "We expected only 15 manufacturers and had well over 40 manufacturers. I envision that area getting larger."

Dean Meyer, sales and marketing manager for Encore, Beatrice,

Neb., said he sees an improved commercial focus to the show. "The landscaper doesn't have to weed through all the consumer products to find what he's interested in. I think the show has improved tremendously."

Show attendees can view the best of new lawn and landscape products, said Ken Raney, advertising manager for Excel Industries, Hesston, Kan. Raney said to look for new products at this year's show that will "knock the socks off" of professional landscape attendees.

Commercial segment attendance continues to exceed previous year figures. In 1990, attendance for landscape and commercial mowing contractors reached 1,581, an 82 percent increase.

This year's show offers a healthy balance of products for buyers, dealers, distributors and landscapers, according to Dennis Dix, president and CEO of the Outdoor Power Equipment Institute, which sponsors the show.

To demonstrate this balance, show sponsors have categorized



## EXPO 91

exhibitors into two groups: commercial/consumer products and power/nonpower products.

In the commercial/consumer products category, 75 percent will exhibit commercial and consumer products; 14 percent, commercial products only; and 11 percent, consumer products only.

In the power/nonpower products category, 50 percent will exhibit nonpower products; and 32 percent, power products.

Pre-Expo sessions are scheduled for Saturday, July 27. Speakers and their topics include David Baker, an extension safety and occupational health specialist with the University of Missouri, "Integrating Safety into Your Total

Lawn Care Management System"; and Charles Vander Kooi, a landscape and irrigation construction consultant, "An Overview of an Estimating System."

Other seminars, open to all attendees, will be offered throughout the show.

Expo attendees can also visit the Model Store, an international visitors center, Hall of Yesteryear, All-American Engine Repair Championship, an international restaurant in the new South Wing lobby of the Expo center, sightseeing tours and Exhibit Awards '91. Entertainment includes "An Evening of Racing at Louisville Downs" on Saturday, July 27; and a Reba McEntire concert on Monday, July 29.

Indoor exhibit hours are 9 a.m. to 5 p.m. Sunday and Monday, and 9 a.m. to 3 p.m. Tuesday; outdoor exhibit hours are 8 a.m. to 5 p.m. Sunday and Monday, and 8 a.m. to noon on Tuesday.

Admission to the show, including the seminars, is free with pre-registration. An on-site registration fee will be charged. ■

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## People

**DAVID CHAMBERS**, regional marketing supervisor for the Monsanto Lawn & Garden business unit, assumes responsibility for marketing activities in the Southeastern United States.

Since 1988, Chambers had been marketing supervisor in the Southwest. He now oversees activities in Alabama, Florida, Georgia, Mississippi, North Carolina, South Carolina and Tennessee.

As regional marketing supervisor, he is responsible for managing distributor relationships and directing manufacturer representative organizations in the Southeast to support retail accounts.

Four group product managers have been promoted at Lebanon Turf Products, a division of Lebanon Chemical Corp.: **Paul Grosh, Harry Mathis, Ed Price and Randy Rogers.**

Grosh and Rogers will concentrate on the Country Club brand of products for professional and golf course use. Mathis will market the Greenskeeper and Lebanon Pro line of products to the lawn care and landscaping fields. Price will coor-

dinate development of the Green Gold, Turf Master, WonderGro and private label lines.

**Michael Anderson** has joined The Toro Co. as director of sales for commercial products. Previously, he was vice president of national sales for the Waterous Co. In his new position, Anderson will direct the national sales activities for Toro's commercial products business.

Cushman has appointed **Ed Nachtsheim** to the position of vice president of finance and treasurer.

Prior to joining Cushman, Nachtsheim was a chief financial officer for Reach All Company.

**Brenda Corbett** has joined Glen-Hilton Products as director of marketing. Corbett brings 12 years of product sales and marketing experience to the company.

In her new position, Corbett will coordinate all marketing and communications to irrigation industry distributors, contractors and designers.

Scag Power Equipment has named



Corbett



Anderson

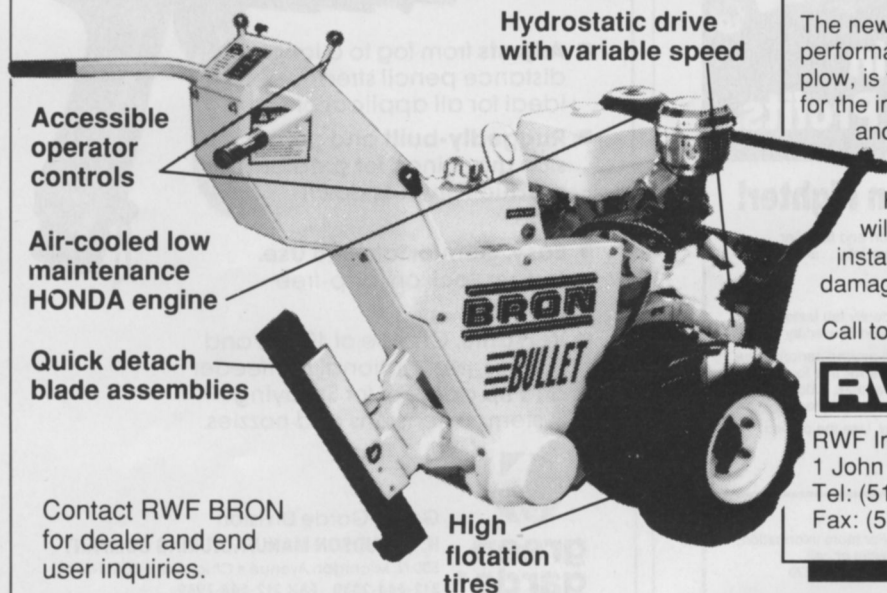
**Charles "Buddy" Danko** as Southeastern regional sales manager. Danko, a 20-year veteran of the power equipment industry, will serve distributors in Florida, Georgia, Alabama, Mississippi, Louisiana, Tennessee and the Carolinas.

**Al Money** has been appointed vice president of sales and marketing for the Bunton Co. Money joins the firm after marketing Bunton equipment as an independent sales representative in Dallas.

Aquapore Moisture Systems has appointed **Shannon Bard** to the position of president and chief executive officer. Bard was previously vice president of sales and marketing for the company. ■

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## Product Profile

# ROOT ZONE THERAPY DRIVES OUT ROOT DECLINE

"ROOT ZONE THERAPY," a new term in arboriculture, may have been coined by arborist Dick Proudfoot, manager of Pruet Tree Service, Portland, Ore. His firm practices root zone therapy quite often using a new piece of equipment called the Grow Gun®.

Root zone therapy is an effective treatment for tree decline stemming from a variety of factors, according to Proudfoot. The most prevalent problem is soil compaction resulting from construction activity. Compacted soil reduces the amount of water available to roots and changes the oxygen balance. Reduced water availability also influences the release of nutrients to the roots.

Other factors include soil glazing from



To relieve compaction, holes are drilled every four to six feet.

transplanting, planting in dense soil such as clay or changing the grade around trees. Roots cannot penetrate soil with a bulk density greater than 1.48. In addition, dense soil or transplanting glaze is often greater than the acceptable density for root penetration.

More attention has been focused on soil compaction since it was discovered that the root mass is concentrated within the first two feet of grade. Absorbing roots are even closer to the surface.

"Traditionally, we aerated by drilling holes

(continued on page 66)



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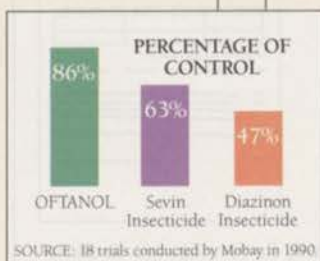


# OFTANOL USERS KNOW THE BEST WAY TO OUTSMART GRUBS IS WITH A LITTLE EXTRA HOMEWORK.

Getting rid of grubs that attack your customers' lawns can be pretty tricky sometimes. Unfortunately, simply treating against these destructive pests doesn't always guarantee success.

But many lawn care operators have learned that all it takes to outsmart grubs is a little preparation—finding the right product and the right time of year for application. The product is OFTANOL® Insecticide. Studies show that time after time, OFTANOL provides consistent grub control. And delivers superior control over widely used products such as Sevin® and Diazinon Insecticides.

The right time to apply it? That will vary from region to region. But a good rule of thumb is



to treat with OFTANOL when grubs are at the surface. An easy way to check is by just pulling back a bit of sod and looking for infestation. Or call your local Extension office to determine peak periods of grub feeding in your area.

These are, of course, just the basics of effective grub control. If you'd like to learn more about OFTANOL and its proper usage, contact your local Mobay representative. Or just give us a call at (800) 842-8020. One of our trained professionals will be standing by to answer your questions. Mobay Corporation, Specialty Products Group, Box 4913, Kansas City, MO 64120.

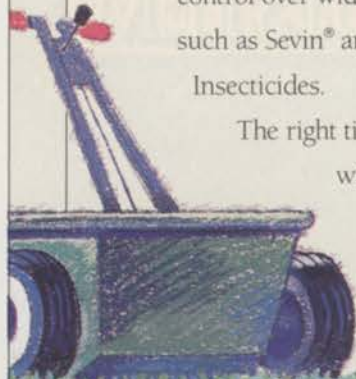
So why let grubs continue to test your patience when the easy answer is OFTANOL.



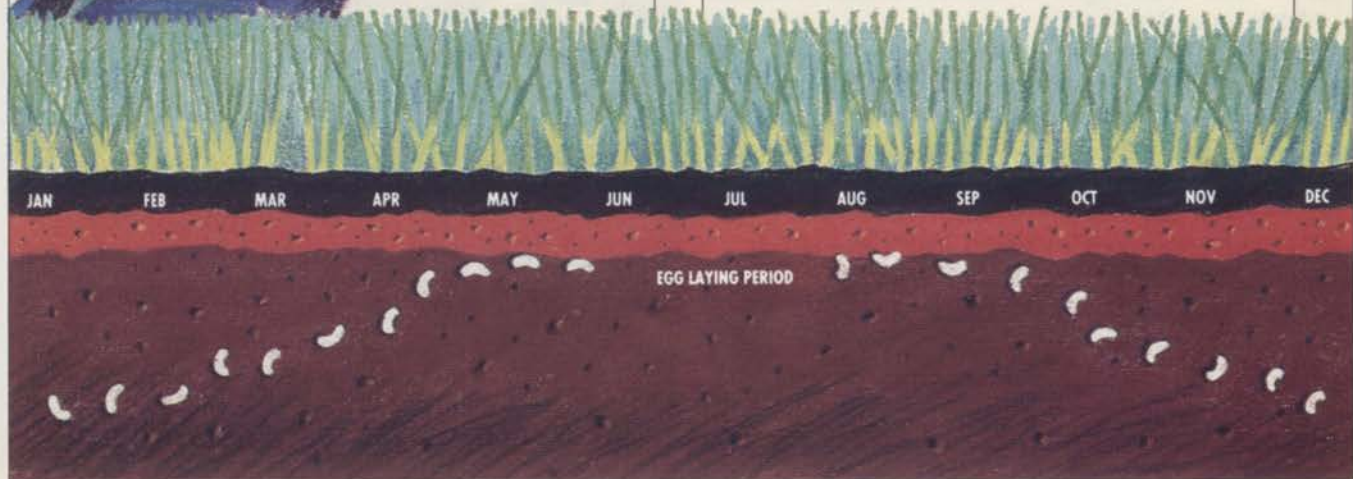
reader service 33

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## Financial Corner

# HAVING TROUBLE GETTING PAID? HERE'S SOME STRATEGIES

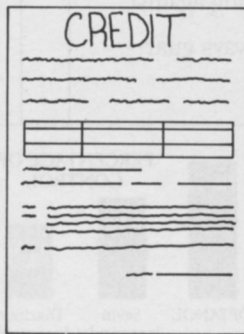
MANY LAWN MAINTENANCE professionals are surprisingly naive when it comes to collecting their money. If payment is not received or if the collection program is too time-consuming or expensive, the results can be disastrous. But a number of strategies and collection techniques can make the whole process easier and more rewarding.

Every landscaping business takes a different approach to collecting money that's owed them, but few have a coherent, formal collection process.

The right process depends on many variables outside the control of the lawn maintenance professional. For instance, does the competition offer easy-payment

terms? Is expecting cash payment unreasonable? Are credit card sales inappropriate or too expensive?

Many landscape operations can't afford to offer more favorable terms to customers than those prevalent in the market — unless the position it enjoys is dominant, its services are in short supply, its quality is superior or the prices



far lower than any competitor. It is when these terms are established that the success or failure of the entire collection process is really determined.

First, the credit application helps determine whether and with what degree of ease or difficulty the maintenance professional will get paid.

One recent survey revealed that nearly one quarter of all bad debts are caused by misunderstandings. When a customer signs a credit application, information sheet or contract, he agrees to the terms incorporated and spelled out above the signature. The customer legally obligates himself to pay if the business lives up to its end of those terms. A good credit application will

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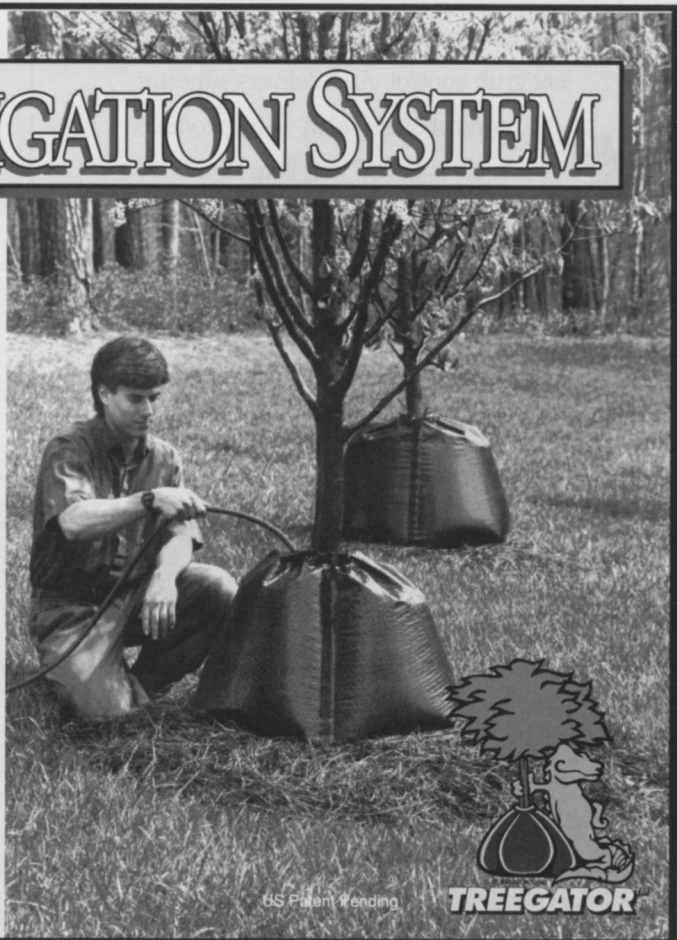
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also provide enough information for the professional to make an educated decision about whether and to what extent to extend credit.

Even if a credit application is inappropriate or not employed, a number of steps can be taken to speed up and increase the rate of collection. Offering a cash discount for prompt payment, for example, is especially beneficial to a business with a high percentage of slow-paying accounts.

An important objective is to collect amounts as rapidly as possible with a minimum of bad debt writeoffs and without a significant loss of profitable business as a result of aggressive collection procedures.

To ensure that collection efforts are consistent and fair, one person should be assigned this responsibility and credit customers should be contacted at regular intervals.

Many maintenance professionals have found that the best collection results are secured with a notice sent after only 10 days delinquency, followed by a telephone contact or letter at least twice during the following 30-day period.

While notices are less expensive, they have proven far less effective than a properly planned telephone call to prod the customer into paying. If properly handled, that phone call will also reveal any problems that might exist. After all, six out of every 10 credit defaults are blamed on wrongdoing on the part of the service provider.

The problem revealed may simply be that the bill is due on the wrong day for the customer's cash flow. There may be a complaint. But a capable person can usually solve the problem, satisfy and retain the customer and, most importantly, collect the amounts due.

All too often, the customer can't be reached on the phone, so a personalized or form letter is used instead. If the account remains delinquent and contact cannot be made via phone, it may be necessary to have someone visit the customer to determine the trouble.

At some point, the contractor must decide to turn the unpaid bills over to a collection agency or attorney. There are two schools of thought concerning what stage the matter should be placed with outside agents.

One landscaping business, for example, operates with few credit accounts and doesn't have one employee performing full-time credit functions. The landscaping contractor routinely refers overdue accounts to collection agencies after relatively few requests. Collection agencies eagerly solicit this contractor's business because the agency has a higher percentage of collections on the amounts referred to them.

Another landscaping business, of about the same size, has a full-time credit staff. They hate to give up on an overdue account and, consequently, the ones which do reach collection agencies have little life left in them.

Either of these approaches to collection can be overdone, but the first is usually preferable. Quick referral to a collection agency allows the office manager, bookkeeper or credit staff to concentrate on accounts with better potential for both col-

lection and future relationships.

Finally, there is one alternative that more professionals are considering: accounts receivable financing. Even the smallest operation can sell the amounts due from customers to a third party for immediate cash. This can either be accomplished by means of the finance company assuming responsibility for collections (non-recourse) or merely borrowing funds using the unpaid bills as collateral or recourse financing. — *Mark Battersby*. ■

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## Products

**REBEL JR.**, a new tall fescue from **Lofts Seed**, features lower growth and a darker green color. It also offers strong performance in full sun or moderate shade and low to medium maintenance needs.

The tall fescue resists damage from insects and disease and adapts to a range of environmental conditions, including heat,



### Product Spotlight

THE **PEPCO** Quadra Bubbler watering system is designed to apply up to 70 percent less water than conventional shrub spray watering systems.

The quadra bubbler acts as a flow control device and splits a single water source into four separate water sources. Water is transferred to the plant via a laser soaker line or tubing. The lines are then run to ground cover, shrubs or trees.

The system is designed for above or below grade installation and for five- to 10-minute watering cycles once or twice daily. Each quadra bubbler waters four plants or up to 120 square feet of landscape.

**Circle 126 on reader service card**

drought and cold.

Classified as a moderately low-growing tall fescue, Rebel Jr. shares the fine leaf texture of extremely low-growing "dwarf" varieties, but establishes quicker and does not display the summer decline seen in some extreme dwarfs.

**Circle 127 on reader service card**

Two new service videos provide step-by-step procedures for the care and maintenance of **Kohler** engines.

"An Ounce of Maintenance" is a 22-minute video owners manual for Kohler engines. Topics include lubrication, fuel, engine cooling, carburetor, air filter, ignition and electrical systems for Kohler K-Series, Magnum and Command engines. Tips and proper service methods are offered for each topic with a visual explanation of engine components.

"Balance Gear Assembly" is a 10-minute instructional video that illustrates

(continued on page 60)

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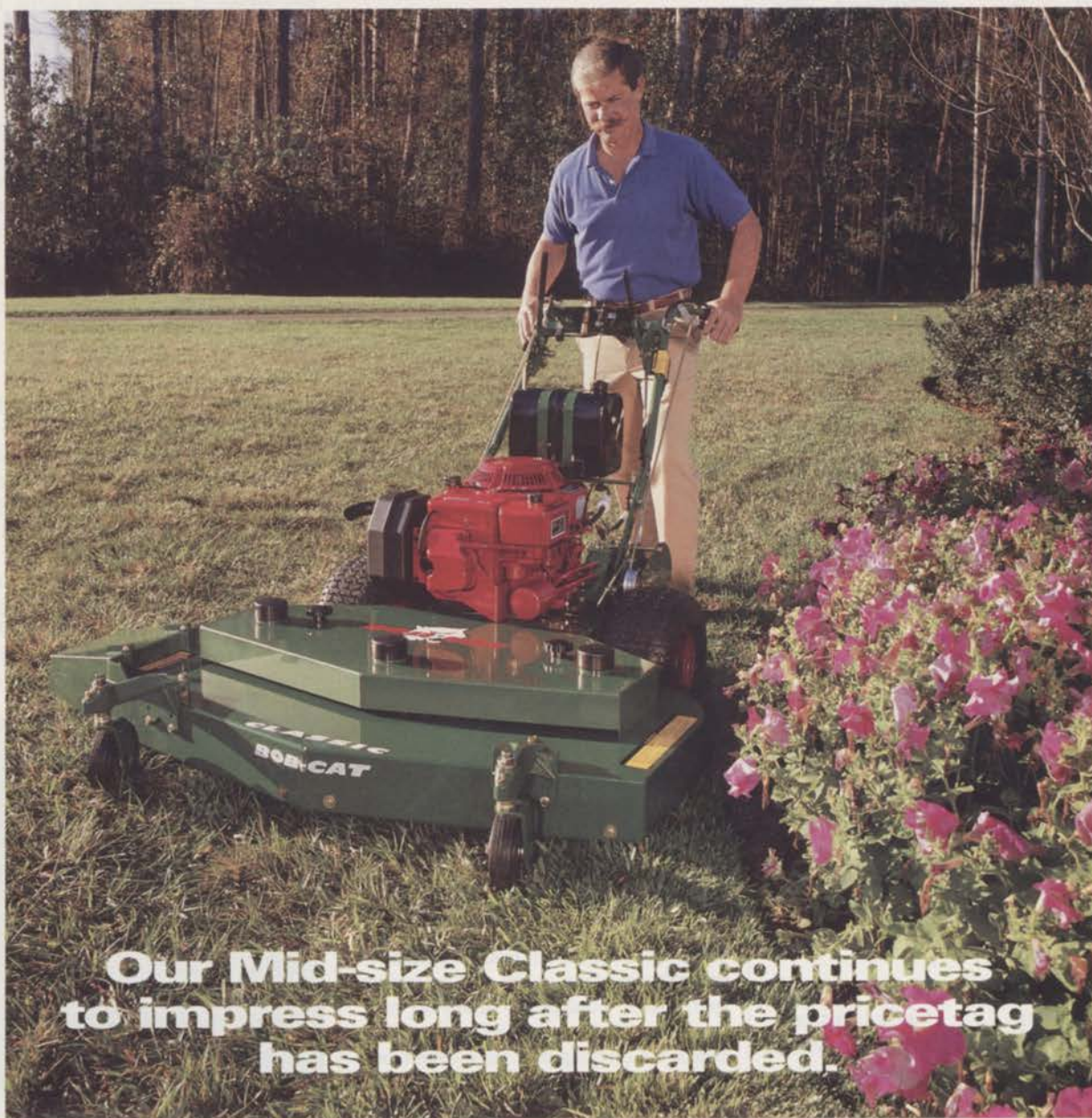
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## Products

(continued from page 58)

new procedures for installing the crankshaft and demonstrates the timing of the two- and three-balance gear systems in Kohler's 10- to 18-h.p. single cylinder engines.

### Circle 128 on reader service card

The Pro-Line Edger from **Encore Manufacturing** maneuvers easily along sidewalks, curbs, driveways and beds. Two

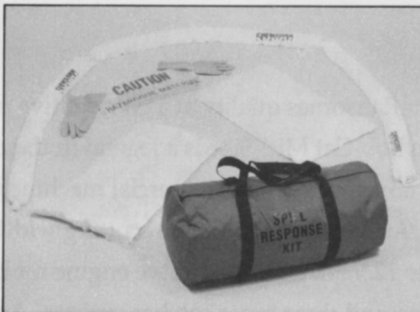


engine selections are available: 3 h.p. Briggs and Stratton and 4 h.p. Honda with oil alert.

Features include a counter rotating blade to protect the operator from debris, a hardened steel 0.15-inch blade with sharpened edges, a single lever to control both height adjustment and blade engagement, safety-minded belt idler design and front-to-rear wheel alignment.

### Circle 129 on reader service card

The Spill Response Kit from **Precision Laboratories** offers on-the-spot emergency spill control. Equipped to handle up to a 6-gallon spill, the kit includes a fluorescent nylon carrying bag, three large tubes to surround and contain the spill and two pillows to absorb and contain the spill.



The kit also includes three disposal bags with closures, gloves and identification labels indicating "hazardous" and "non-hazardous" contents. It fits into trunks, small storage compartments and other confined spaces.

### Circle 130 on reader service card

**Fine Lawn Research** now offers Flyer, a new variety of creeping red fescue. Flyer produces a fine, dense, deep green turf. It was judged the top creeping red fescue in overall quality in the 1984 national fine leaf fescue tests.

Flyer blends well with Kentucky bluegrass and enhances turf-type tall fescues and perennial ryegrasses. A cross of several southern U.S. varieties, the fescue performs well in hot, humid weather and under heavy shade and damp areas.

Other benefits include resistance to red thread and powdery mildew and quick emergence.

### Circle 131 on reader service card

**O.M. Scott** introduces Turf Starter Plus Ronstar, a high-phosphorus fertilizer with preemergent weed control to fight annual grassy weeds. The product is for use during bermudagrass sprigging, and helps bermudagrass re-establish itself after winter damage.

The fertilizer contains oxadiazon, a pre-emergent herbicide to suppress crabgrass, Poa annua, goosegrass and foxtail. With a sulfur-coated urea base for sustained nitrogen release, the product supplies am-



moniacal nitrogen and urea for quick greenup.

Dry applied, it's designed for rotary spreader application.

### Circle 132 on reader service card

**Power Lawnmower Parts** is offering Universal Mulching Blade kits. The kits are available in three sizes to retrofit 19-, 20- and 22-inch side discharge mowers.

Each kit contains one mulching blade with 13/16-inch center hole, two reducing washers, a cover washer, a mulching door and a locking strap for lawn mowers with riveted chute deflectors.



The blade is designed to allow maximum air flow within the cutting chamber for fine-cut mulch.

**Circle 133 on reader service card**

The new Turf Master turf spray vehicle from **Cushman** is mounted onto a three-wheel Cushman turf-truckster vehicle with the pin-disconnect mounting system.



The vehicle is equipped with high-flotation tires that reduce ground pressure. The vehicle also includes a new spring-over-shock absorber front suspension system with automotive-type rubber mounts at the pivot points. The system does not require lubrication.

The sprayer unit is available with either 15- or 20-foot spray booms, supplied by a 160-gallon molded fiberglass tank. Spray action halts when the vehicle stops.

Accessories include a 7-foot hand-pushed "walking boom," which can be mounted for transport from green to green; a regular hand gun sprayer; foam marker; and an electric boom lift.

**Circle 134 on reader service card**

Sierra Controlled Release Fertilizer Tablets from **Grace-Sierra** are now available in a new formulation of 12-12-12 plus



minors. The 7.5 gram tablets are engineered to last up to five months with a single application.

The tablets are designed to give greenhouse crops and bedding plants a continuous and consistent supply of essential nutrients, triggered by soil temperature. Nutrient release increases as the soil warms up and decreases as the soil cools.

A 16-8-12 formulation is also available for nursery stock and crops with longer growing cycles, including poinsettia or geranium plants; and for interiorscapes and landscape plantings, including annuals, perennials, trees and shrubs.

**Circle 135 on reader service card**

**Finn Corp.** introduces Fiber Plus, a mulch stabilizer used in hydroseeding. Designed to improve seed germination, fiber plus is a specially coated synthetic fiber that improves the bonding of fiber mulch to the soil surface.

When a slurry containing fiber plus is applied, the longer length fibers attach to the soil particles and form an erosion-control mat. The mat helps to control seeds during germination.

Fiber Plus is also designed to reduce the need for chemical tackifier.

**Circle 136 on reader service card**

**John Deere** has introduced the 10-h.p. AMT626, a new two-passenger utility work vehicle. The AMT626 replaces the AMT622 vehicle and has a wider stance by 7.7 inches, allowing it to straddle 30-inch crop row spacings based on a 39.5-inch spacing between the inside rear tires.

Mid- and rear-axle shafts are longer and



larger in diameter and heat-treated for strength. Outer axle bearings are larger.

Other features include a pressure-lubricated engine that uses 1/2-gallon of fuel per hour at full load, 4.75 gallons fuel capacity, 32-amp/hour battery and 13-amp alternator with regulator.

**Circle 137 on reader service card**

**Excel** offers the Hustler Range Wing attachment for models 340, 400 and 440. The attachment allows operators to mow over 12 feet in one pass. Side wings feature a working angle of 20 degrees above and below horizontal ground level to eliminate scalping.

The hydraulically controlled 48-inch



wings can be raised and lowered independently for mowing in close quarters and transporting.

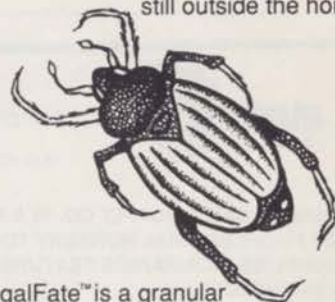
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# Calendar

**JULY 12-16**

American Association of Nurserymen Annual Convention and Nursery Industry Trade Show, The Dolphin, Orlando, Fla. Contact: Kevin Morales, AAN, 1250 I St. NW, Suite 500, Washington, D.C. 20005; 202/789-2900.

**JULY 18**

Annual Nursery Field Day, Virginia Polytechnic Institute and Virginia Tech Research Station, Virginia Beach, Va. Contact: Hampton Roads Agricultural Experiment Station, 1444 Diamond Springs Road, Virginia Beach, Va. 23455; 804/363-3900.

**JULY 25**

Facilities Management Seminar sponsored by the Professional Grounds Management Society, Ohio State University, Columbus, Ohio. Contact: PGMS, 10402 Ridgland Rd., Suite 4, Cockeysville, Md. 21030; 301/667-1833.

**JULY 31 to AUG. 2**

American Sod Producers Association Summer Convention and Field Days, The Red Lion Lloyd Center, Portland, Ore. Contact: Thomas Ford, Meetings Administrator, 1855-A Hicks Rd., Rolling Meadows, Ill. 60008; 708/705-9898.

**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.

**JULY 30**

Midwest Regional Turf Field Day, trade show and equipment demonstration, Purdue University, West Lafayette, Ind. Contact: Clark Throssell, 316/494-4785.

**JULY 31**

The University of Georgia Turfgrass Field

Day, Griffin, Ga. Contact: Gil Landry, The University of Georgia Experiment Station, Griffin, Ga. 30224; 404/228-7300.

**AUG. 2-4**

Southern Nurserymen Association Trade Show and Convention, Atlanta, Ga. Contact: SNA, 1511 Johnson Ferry Road, Suite 115, Marietta, Ga. 30062; 404/973-9026.

**AUG. 16-18**

Texas Association of Nurserymen Annual Convention and Trade Show, Dallas Convention Center. Contact: Patti Willey, TAN, 7730 South IH35, Austin, Texas 78745-6621; 512/280-5182.

**AUG. 22**

Turfgrass Field Day, Trade Show and Equipment Auction, Hancock Turfgrass Research Center, Michigan State University. Contact: Bruce Branham, Michigan State University, Dept. of Crop and Soil Sciences, E. Lansing, Mich. 48824; 517/353-2033.



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## Product Profile

(continued from page 54)

into the soil under the canopy; however, we seldom continued this process beyond the dripline," Proudfoot said. "We need a way to fracture soil below the surface and to extend fractures for great distances from the point of penetration."

One of the most frequent causes is the contractor who parks vehicles under the shade of tree canopies or stores equipment and supplies there to keep them away from the elements. Some contractors are unaware they are killing the trees; assuming that trees have deep tap roots.

Decline symptoms can manifest themselves years after construction is completed. By then, the rate of decline is fast and drastic measures are required if the tree is to be saved. The soil has to be loosened and watered and nutrients and oxygen must be introduced. The arborist must then hope that sufficient roots are left undamaged to begin the absorption process at an accelerated rate.

A 2-inch diameter hole is drilled into the soil with an auger; the same as traditional aeration holes. The depth is determined by tree species, but it's important to fracture the soil below the root mass.

The fractures will move upward instead of downward.

After holes are drilled at the proper spacing distances, the Grow Gun is lowered into each hole. The operator stands on the ground plate and controls the injection process. Compressed air at 125 to 175 psi at a volume of 100 to 250 cfm is forced into the ground at the base of the injection stem to lift and create soil fractures.

Fractures may occur up to 12 feet from the hole. Proudfoot said his crews space the holes so they overlap every four to six feet since the fractures decrease in size as they move further from the hole. Holes are often required every eight to 12 feet and should be drilled close to the trunk. Additional holes may be drilled away from the trunk if required.

After the initial fractures are made, water can be added by injection to fill and seal the fractures. More air is then applied, pressurizing the water. As the compressed air expands, it pushes against the water which opens more and larger fractures.

When the soil is sufficiently fractured, granular or liquid fertilizer may be injected. Granular fertilizer is poured into a hopper, a plunger is depressed, the fertilizer slides down inside the housing and is forced into the fractures by the same

pneumatic pressure that made the original fractures.

Soil amendments and organic matter can be introduced the same way. Liquid fertilizer can be introduced through the water valve.

Proudfoot cautions that soil fracturing is an effective treatment only for cases involving dense or compact soil. Construction damage caused by the cutting of roots for utilities, drives or walks must be dealt with differently.

Soil glazing during transplanting has recently caused a great deal of concern among arborists because it is visible in the large holes dug by mechanical, and sometimes even manual, transplanters.

Glazing is caused by the compacting of soil around a planting hole. After a spade has removed the plug of soil, the walls of the hole may appear so dense that they shine, thus the term glazing. Proudfoot said the soil's bulk density at that point may be more than 1.48, preventing the roots of the newly planted tree from penetrating.

While the prognosis for root problems used to be grim, the Grow Gun has helped Pruett Tree Service save many trees from death due to root compaction.

**Circle 125 on reader service card.**

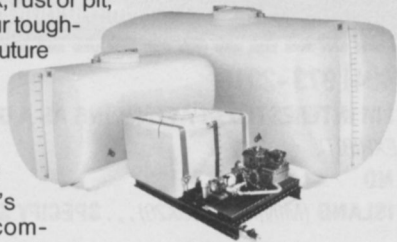
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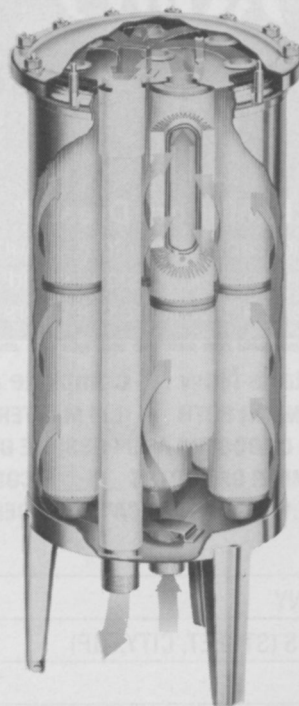
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## Is It a Glut?

(continued from page 30)

from Jacklin's Japonica species will continue.

In addition, Jacklin is launching quality standards in the grass seed industry by singling out turfgrass varieties that have superior genetic characteristics and those with diminished impact on the environment. Jacklin's "Green Seal of Quality" will mark each variety that meets both the genetic standards and newly elevated analysis standards.

Though most breeders are searching for reduced maintenance varieties, Zajac said, he doesn't necessarily agree.

"I don't subscribe to the theory about no maintenance type grasses," Zajac said. "People who are investing in turf and want it to look good are spending time with fertilizers and mowing. So we're concentrating on grass performing under normal maintenance; a normal maintenance program using water more sparingly."

Turf-Seed is researching a variety with natural pest resistance, using endophyte in a way not previously considered, according to Stanley. He predicts a variety using this technology will be on the market in several years.

"The varieties we find most interesting are fine fescues," Green said. "There's not

many to choose from now, but the explosion of varieties coming onto market has really broadened the field of fine fescue."

The question of "What is a dwarf?" will be asked for a long time to come as dwarf means a different height to various breeders and end-users across the country. Nevertheless, the hunt for shorter varieties continues.

"Low maintenance used to be thought of as low quality, but now we're getting better quality than ever," McCarthy said. "Everybody is running the same foot race. You hope plant breeding and evaluation come up with the types of materials that fit your program."

How far off are these new varieties? Five to 10 years by most estimates.

**SEED PRIMING.** Several years ago, seed priming was greeted with much anticipation by those desiring quicker establishment. But it's a different story today as most suppliers are hesitant to place much stock in it.

Jacklin has scaled back its seed priming because it questions whether the small benefit the homeowner or professional would see is really worth the added cost per pound of seed. Additional research is also needed to answer questions on storage, shelf life and inconsistent germination among varieties of the same species.

Jacklin research has found the shelf life to be sporadic, germination to vary by variety and lot and effectiveness in some varieties and not others, according to Gayle Jacklin.

"We need to do more work to come up with what I consider to be economically satisfying costs for priming seed and getting consistent, measurable results," Zajac said. "Some species hold more promise, such as bluegrasses and tall fescues which are slower to establish."

Inherent differences such as the age of the seed, the viability of the seed, the moisture content, etc., makes it necessary to prime lots individually rather than jointly, Wick said.

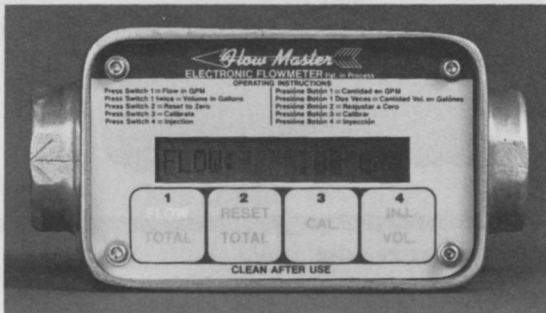
"The problem is that unless you're dealing with a species which is slow to germinate like bluegrass, we see no economic benefit," Wick said. "If you're priming bluegrass and mixing it with unprimed ryegrass, in theory that has merit."

But golf courses may provide an outlet for primed seed.

Since golf courses can't shut down for overseeding, seed priming may be the answer for sprouting seed under playing conditions, Tubbs said. ■

The author is Editor of Lawn & Landscape Maintenance magazine.

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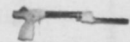
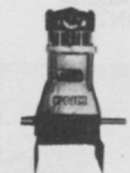
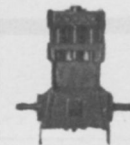
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**Evergreen**

(continued from page 25)

**A:** Water is in short supply in Seattle in terms of the capabilities of the area's delivery system.

Seattle is a central water distributor for many communities in the western part of King County. The supply system is based on water from rivers in the Cascade foothills. There are predictions that within 10 years the existing supply system will not be able to meet the water demands of the area.

People don't realize that from the middle of May to the middle of September we are essentially a drought area. There are years we have water restrictions.

**Q:** How do you promote water management to customers?

**A:** Our customers are aware that water is a precious and restricted commodity. There will be water surcharges in this area this summer, probably 15 percent to 25 percent, to discourage excessive water use for irrigation.

Some of our key customers are very interested. They pay large water bills, and we can show them how to achieve a minimum 35 percent to 50 percent reduction.

**Q:** That's quite a difference. How do you accomplish that?

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Once you know what the ET rate is, you know how much water needs to go into the ground and you can work out a water budget by zone for any property as to how much water should be applied each week. Then you project the cubic feet of water to be used on that site in a year.

By simply assuring a system is functioning to its original design standards, you can achieve a 25 percent to 35 percent reduction in water use. Gains greater than that typically involve an investment in retrofitting the system. It could cost \$1,000 to \$1,500 for controllers alone, and with total system redesign and moisture sen-

sors, the cost can go much higher. In terms of payback you are looking at one to two seasons, depending on water costs and restrictions in your area.

**Q:** How did you get involved in water management?

**A:** Frankly, we are still learning the applied technology ourselves. Ron Mark of the Xeris Group from Phoenix gave us a two-day training seminar, and that gave us the tools to start developing our own knowledge and expertise.

We are still in a training and learning mode, and are only in the very early stages of talking about this with customers. We will develop the expertise this year, and more aggressively market that in the future. ■

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



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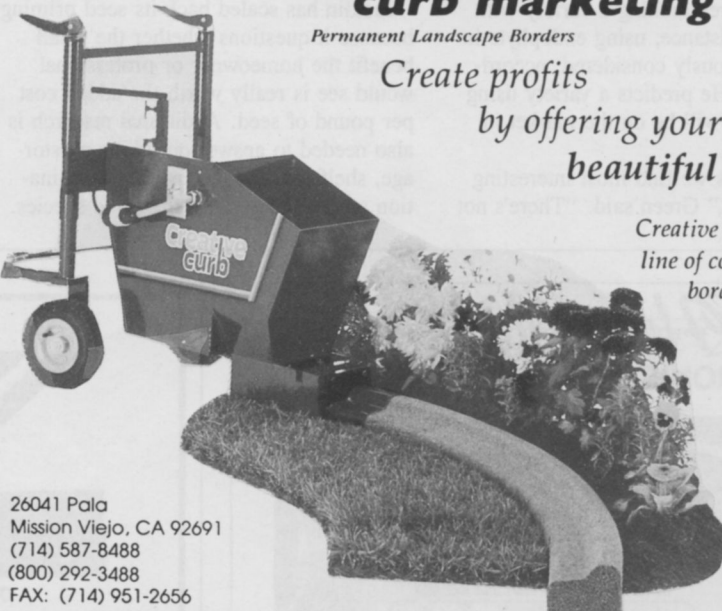


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*The author is a researcher and professor in the Crop Science Department at North Carolina State University.*

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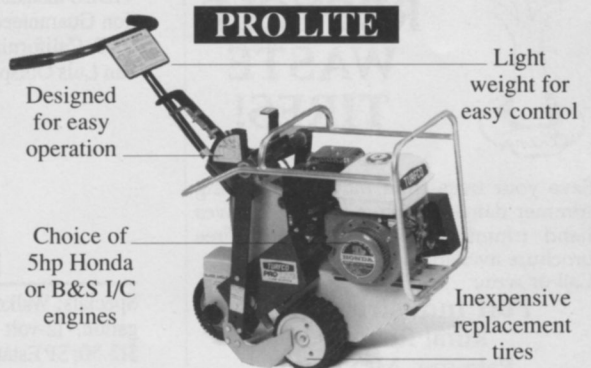
## COMING NEXT MONTH

Between emissions and noise regulations, the outdoor power equipment industry has been in the spotlight this year. Learn more about the benefits of power equipment and how the EPA's study on emissions will affect your business in the July issue of LLM.

Our next issue will also highlight soil wetting agents, fungicide performance and landscape lighting.

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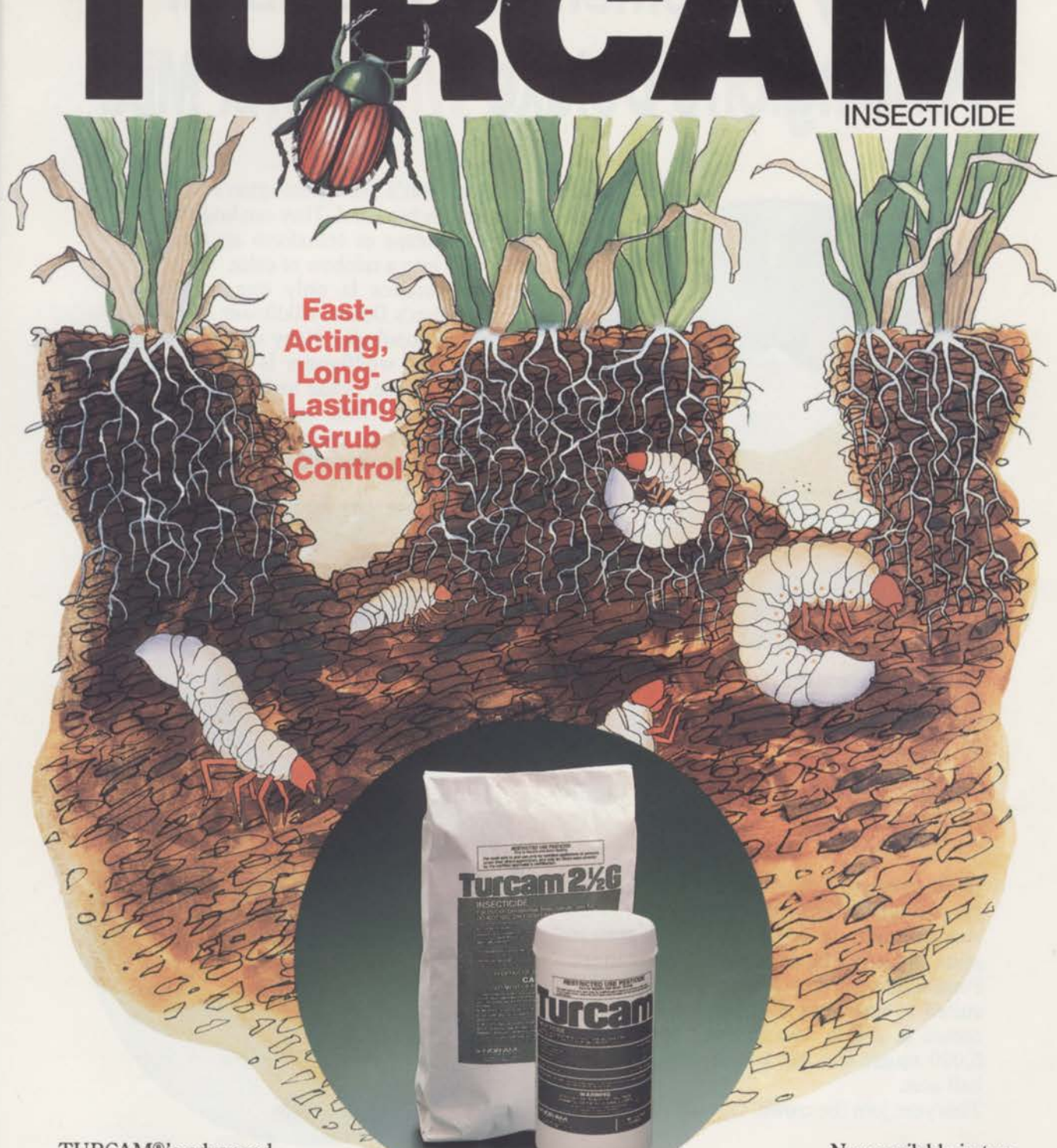
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