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Bridging the 1 the 1 Cap Gap

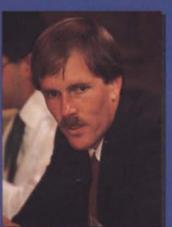
An education void threatens the development of the professional irrigation market. Who's responsible for filling the gap? Industry leaders debate this controversial issue.

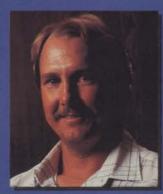
Larry Keesen, left and Bob Dobson, right.











Jack Zendt and Dick Crowl, center, Doug Berlin, bottom left, and Larry Bareis, bottom right.

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Lawn & Landscape VOLUME 12. NUMBER 10

FEATURES

An Special Report: Bridging The Irrigation Gap

An education void threatens the development of the professional irrigation market. Who's responsible for filling the gap?

31 Savvy Contractors Aligning JZ Themselves with Xeriscaping

Xeriscaping doesn't mean eliminating turf and ornamentals; it's the promotion of beautiful landscapes while conserving water.

Cover Photos: Lee Zaichick, Las Vegas





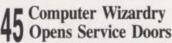
to designing a system. Are Multipurpose Landscapes

Replacing Designs of Old?

The days of designing landscapes purely for aesthetics are over for the landscape architect.

↑The Cold War: Profit-Making **L**Strategies for Snow Removal

There's no avoiding snow removal in some parts of the country. So if you're going to plow, why not make some money at it?



Whether it's landscape design or financial services you're looking for in a computer, know your firm's needs before selecting a system.

Anticipation Surrounds Second Run of the GIE Show

The Green Industry Expo heads south to Tampa for its second year of association-sponsored education and exhibits.

Future Pesticide Laws Shouldn't **JJ** Spell Doom For Maintenance Operators

The future of the lawn and landscape maintenance industry may appear bleak at times, but the credible and accountable operator should have no problem maintaining profitability.



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Editor's Focus

IT'S TIMES LIKE these that test the endurance and professionalism of lawn maintenance contractors.

A Florida operator recently called LLM desperate for a solution or a formula, anything to make money from his fledgling mowing business. It seems that no matter how he approached the business, labor, equipment breakdowns or weather were making his life, as well as those of his customers, miserable.

More and more frequently, we're receiving calls and letters from our readers looking for suggestions on how they can survive these trying times. While no two lawn maintenance companies are alike, it's important for all contractors to know and continually tinker with their mowing and operations costs.

But when you're playing with the numbers, remember these related costs: depreciation, interest, gas and repairs in regard to actual mowing costs, as well as wages, salaries, social security and insurance in regard to operator costs. Knowing these costs will enable a contractor to better price each job, and actually make some money in mowing.

In this day and age, when landfills are reaching their fill point, when drought and torrential downpours are hitting various parts of the country, when legislation is making it even more difficult to run your businesses, it's important to communicate your needs and concerns rather than panic.

To address some current needs, LLM is initiating a new monthly column called "Business Watch." This department will take a look at housing starts, retail sales and unemployment figures as well as regional reports from across the country. We hope this column will help you get a better focus on the economy, and we look forward to your comments and contributions to the articles.

In addition, this month's LLM is offering its readers a 2,4-D fact sheet to better explain the current situation surrounding the popular herbicide. It's found on page 8A.

Sometimes, things aren't always what they seem. Since we began profiling lawn maintenance professionals on the cover of our magazine, we've presented a wide array of individuals performing various services in different competitive situations. We've been told over and over how much you appreciate these articles and how you gather ideas from the successes and lessons learned by others.

Never before, however, have we received



such a negative response to one cover profile as we did to Green Masters of Minneapolis. A somewhat small, but fiercely competitive Minnesota market has only intensified as a result, sparked by assertions of price cutting in our July feature.

It seems the recession has taken its toll on Minneapolis contractors. Property managers are living for the short-term, bidding jobs out at every opportunity in order to get the low bid, not necessarily the best service. As a result, landscape contractors are said to be working cheaper today than 10 years ago and "beating each other up unmercifully," according to one operator.

Apparently, price cutting has become the norm rather than the exception in the Minneapolis/St. Paul area and even established companies are finding themselves in the trenches of price wars. Our articles are designed to encourage business growth through professional service. And while we may profile one company over another in a particular city, it's not meant to be at the expense of other quality firms.

We appreciate hearing from you and hope you continue to respond to articles which appear in LLM.

Several readers have called to inquire about the report available from the American Council on Science and Health titled, "Lawn Care Chemicals: What Consumers Should Know." As it turns out, the information printed in this column last month was incorrect.

So here we go again. To receive a copy of the report, send \$3.85 (includes postage) to ACSH, 1995 Broadway, 16th Floor, New York, N.Y. 10023-5860; 212/362-7044. - Cindy Code

EDITORIAL

Cindy Code Editor

Julie A. Evans Associate Editor

GRAPHICS/PRODUCTION

Charlotte Turcotte Art Director

Jami Childs Production Manager

> Helen Duerr Tracy Green Tracy Brubaker

Richard J. W. Foster

President

Christopher W. Foster Group Manager

Rosalie Slusher Circulation Manager

Mark Fosse Market Research Manager

> Fran Franzak Office Manager

ADVERTISING/MARKETING

Maureen Mertz Publisher National Sales Manager 1723 South Hill Milford, Michigan 48381 313/685-2065 Fax: 313/685-2136

Tim Kasperovich Midwest Sales Dave Miethke West Coast Sales 4012 Bridge Avenue Cleveland, Ohio 44113 216/961-4130 Fax: 216/961-0364

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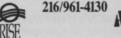
Karl Danneberger, Tom Garber Des Rice, Joe Vargas Patricia Vittum, Richard White

EDITORIAL OFFICES

4012 Bridge Avenue Cleveland, Ohio 44113 Phone: 216/961-4130

Fax: 216/961-0364

Subscriptions and Classifieds:







News in Brief

NEWS DIGEST

Deere Posts Third Quarter Loss

Deere & Co., Moline, Ill., citing sluggish sales in its key equipment sector, said net income fell 73 percent in its third quarter ended July 31. Net income fell to \$31.3 million, or 41 cents a share, from \$114.1 million, or \$1.50 a share, a year earlier.

Sales fell 13 percent to \$1.79 billion from \$2.05 billion.

The company said the results reflect a 19 percent drop in production because of "lower retail demand," as well as "extremely competitive conditions," which increased sales incentive costs.

The company said it expects fourthquarter results to show a "significant decline," citing lower volumes and "strong price competition."

Excel Introduces New Corporate Identity

New corporate graphics including a changed logo will soon appear on all Excel Turf Products.

Excel, Hesston, Kan., will continue to produce the Hustler line of out-front rotary mowers as well as the Excel Compact series, the Snow Track 440 and the new 9400 UTR.

Foley Begins Two-Step Distribution

Foley-PLP Co. service parts are now sold exclusively through distributors. The two-step policy gives dealers and service center customers additional buying power and pricing and assures them of parts availability.

Foley-PLP has 190 distributors covering all 50 states as well as 113 distributors in Canada and overseas.

Husqvarna Relocates Offices to N.C.

Husqvarna relocated its marketing and sales offices from Itasca, Ill., to Charlotte, N.C., Oct. 1. The majority of those employed at the Illinois office, including president Dave Zerfoss, made the move to North Carolina.

Husqvarna, owned by Electrolux, still handles most of its manufacturing in Sweden, although some of the mower line is made by AYP, Husqvarna's sister firm in Orangeburg, S.C.

Charlotte, N.C., was previously the site of Husqvarna's largest distributor.

RISE Conference Presents Challenges Facing the Pesticide Industry

LEGISLATION, RESEARCH and development and environmental affairs dominated the agenda of the Responsible Industry for a Sound Environment, when it met recently in Reston, Va., to discuss the many challenges facing the specialty chemicals industry.

Now entering its second year, the fledgling RISE attracted a large number of leaders from throughout the industry, including manufacturers, distributors and trade associations.

Throughout the three-day conference, participants focused their attention on Wisconsin Public Intervenor vs. Mortier, the recent Supreme Court decision that allows local governments to regulate the use and sale of pesticides.

Jay Vroom, president of the National Agricultural Chemicals Association, said in his

keynote address that industry members cannot afford to be complacent in light of the Court's decision.

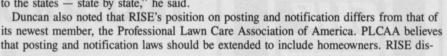
"We're as close to the sky falling as we ever want to come," Vroom warned. "Will we see many localities institute local ordinances? Yes," he said, adding that environmentalists are being very calculated in their approach to the decision. The National Coalition Against the Misuse of Pesticides and other organizations have already done mass mailings, Vroom said, urging communities to ban pesticides.

"The potential is high for hundreds of communities to move against pesticides," he said.

David Duncan of Monsanto Agricultural Co. and chairman of RISE's Government Issues Committee, said that the answer to the Court's decision lies at the state level of government.

"The answer is not at the federal level. We must go to the states — state by state," he said.

agrees.



"We've agreed to disagree with PLCAA. We need unity with PLCAA. An industry divided is an industry defeated," he said. "We don't want to appear non-unified, but we will if we have to. It's not (economically) prudent to us that homeowners should post for use of lawn care chemicals."

John Thorne, director of Alliance for a Clean Rural Environment, raised another pressing issue, water quality, and offered several reasons why public trust in pesticides is eroding so rapidly. He analogized the industry's ills to the "Custer syndrome": "The guy out front gets the most arrows," he said. Right now that "guy out front" is the pesticide industry.

Growing public mistrust of pesticides and water quality can in part be explained by the changing nature of agriculture. Thorne said that trust continues to diminish as agriculture turns away from the family farm to the seemingly more ominous agribusiness.

In addition, more homes and subdivisions are being constructed in or near farm communities, increasing awareness of pesticide use.

"We're seeing increased scrutiny, but has risk changed? No, the public is simply more aware."

Thorne said that the water quality issue is not going to go away; in fact, it's getting bigger.

"We can't go back. We need to get involved and participate in the change-making process," he said.

Also at the meeting, several university researchers explained the nature of their research and the potential impact of their findings.

From North Carolina State University, Joseph DiPaola, associate professor of crop science, turf, presented the economic and environmental benefits of turf pesticides. DiPaola zeroed in on plant growth regulators as an industry innovation that could reduce mowing costs and landfill waste.



RISE Chairman Bill Liles.

Peter Dernoeden, turfgrass specialist and professor in the Department of Agronomy and Extension at the University of Maryland at College Park, said that more money is needed to support research in the following areas: new uses and niches for pesticides, performance of pesticides used on the same area over an extended period of time and integrated pest management.

Several green industry associations were on hand to discuss their members' needs and concerns. Robert Dolibois, executive vice president of the American Association of Nurserymen, cited continuing development of safe and effective pesticides and their proper use as the number one research challenge.

Dolibois called for active communications between RISE, the Environmental Protection Agency and growers.

Representing the Golf Course Superintendents Association of America, Stephen Cadenelli said that his association sensed chemical opposition early on and urged members to examine how they applied pesticides. This proactive posture has served GCSAA members well, he said.

"We have to break down emotionalism vs. sound science. This can be done with the right people talking to the public." Like Monsanto's Duncan, Cadenelli believes the state level is where the most impact can be made. "We must remove the issue from local legislators. We must convince the public that when used properly, pesticides are a benefit."

Cadenelli asked manufacturers to provide end-users with more product information. He also called for improved formulations and packaging, as well as the development of ecologically sensitive products that are biologically based.

Finally, Cadenelli said, there is no substitute for education.

Ann McClure, PLCAA's executive vice president, presented a check for RISE membership during her presentation. "We are all in the same boat. We share the same goals," she said.

McClure said that lawn maintenance operators face several challenges: affecting public perception, affecting legislation, procuring and employing complete product information and obtaining and keeping qualified operators.

Current trends away from chemical use have lost them customers and made it harder to find new ones, she said. But standards must be kept high.

"Lawn care operators feel that manufac-

turers need to provide more information. They believe their customers have the right to know and they want to share that information.

"We will accept appropriate legislation. It is important for us to work with legislators," she said.

McClure also said that PLCAA has seen a resurgence of enthusiasm over the past year.

For more information about RISE, contact Allen James, executive director, 1155 15th St. NW, Suite 900, Washington, D.C. 20005; 202/296-6085.

2,4-D Cancer Link In Dogs is Faulty

Recent reports on 2,4-D and cancer paint very different pictures.

A study from a workshop convened by the Harvard School of Public Health calls the link between the herbicide 2,4-D and cancer "far from established."

Yet, another study reported in the Journal of the National Cancer Institute said dogs whose owners use 2,4-D on their lawns four times a year are twice as likely to develop a deadly type of cancer.





The Harvard report states that animal research provides little reason to expect that 2,4-D causes cancer in humans, and that studies of people occupationally exposed to the herbicide, while suggesting a possible link, do not establish a cause-and-effect relationship.

The study found an association between exposure and a form of non-Hodgkin's lymphoma, a form of lymph cancer. However, 13 panelists at the workshop said findings had to be interpreted carefully, since other studies have not shown the same results, and because some factor other than 2,4-D might be involved.

None of the panelists considered 2,4-D a known or probable cause of cancer, based on available evidence.

The NCI report said researchers studied 491 dogs diagnosed with malignant lymphoma — similar to human non-Hodgkin's lymphoma. They found: Dogs whose owners used 2,4-D once a year had a third higher cancer risk; the risk doubled when used four or more times.

Although the Environmental Protection Agency indicated that 2,4-D will not be removed from the market based on the report, it raised the ire of professional lawn maintenance operators and the Pro-

Green Notes

Florida County Adopts IPM Program. Sarasota County has become the first Florida county to officially adopt integrated pest management practices on all county government properties. All county operations were required to adopt the program by Oct. 1.

Focal Point Communications, Cincinnati, Ohio, received several awards for the design and content of its monthly newsletters and sales materials for the green industry. Winning entries included the Professional Lawn Care Association's quarterly newsletter, *ProSource*.

Tracking Performance. "Perspective: The Business Development Information Tool" is available from the U.S. Data on Demand. It assists businesses in analyzing performance, charting growing markets and tracking trends in any or all of the 50 states. To order, contact: Perspective Fulfillment Center, P.O. Box 567, Bowling Green, Ohio 43402; 800/352-7352. Cost: \$89.95.

fessional Lawn Care Association of America.

Tom Delaney, PLCAA director of government affairs, said the association received more phone calls from operators looking for advice than they received in the past two years from other media reports combined.

Delaney advised operators to be honest and straightforward with their customers.

While it's up to the customer to decide how long to keep his dog off treated grass, tell him the longer he keeps the dog off the more the herbicide will dissipate.

He also questioned the credibility of the NCI report.

The study was based on dogs already suffering from malignant lymphoma. In addition, researchers involved with the report were calling on people 10 to 58

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months after their dogs were diagnosed with cancer, and the questionnaire didn't provide dog owners with a list of chemicals to choose in responding to various questions regarding lawn chemicals.

While the report didn't cause many companies to suspend use of 2,4-D, it did motivate some customers to switch to alternative products.

"We didn't receive a large number of calls, but compared to other news stories about 2,4-D, we've had a tenfold increase in inquiries," said Tim Doppel, president of Atwood Lawn Care, Sterling Heights, Mich. "I found it interesting that for all the news stories about possible human health risks, we received little response. But when it comes out that Fido could get ill, people start calling in."

Chris Senske, president of Senske Lawn & Tree Care, Kennewick, Wash., said this report created more inquiries than any media coverage he's ever responded to.

"In most cases, people wanted to know what we were using and some asked for special treatment such as being notified before the treatment of their lawn," he said. "Most were just curious if we used the product."

Steve Derrick, Orkin assistant vice presi-

dent/technical director, said Orkin issued a memo to all its branches with suggestions on how to deal with customer questions. Among other things, Orkin recommends telling customers that the studies are inconclusive, and 2,4-D is used in minute amounts and diluted in water.

Patent Awarded To New Pesticide Carrier

BioPlus Inc. received a patent for processing peanut hulls into dust free granules. The Bio 170 granules are designed for use as chemical carriers and as moisture absorbent materials.

The patented process takes the peanut hull derived granules and converts them into small, spreadable, 100 percent organic, biodegradable granules. Once the granule receives water from irrigation or rainfall, it dissolves, releasing the chemical and leaving no large particles behind.

The BioPlus granule is in its third year of production. BioPlus is principally owned by Pennington Interest.

A new facility using high-tech equipment was built in 1990 to produce Bio 170.

RAC Announces Restructuring Plans

Ransomes America Corp. continues to refine its North American direction that be gan nearly two years ago, serving as a sales and distribution company for all Ransomes PLC products.

Originally set up by Ransomes PLC of Ipswich, England, to oversee its North American operations, RAC is now made up of four business units: professional lawn care, turf, industrial and commercial and consumer. All subsidiaries. Cushman Inc., Ransomes Inc., Steiner and Brouwer. will take direction from RAC.

The company headquarters will be based in Minneapolis, Minn., and headed by Irv Aal, new president. Other officers include Doug McCormick as vice president of marketing and sales and Ed Nachtsheim, vice president of finance. Both McCormick and Nachtsheim were promoted from Ransomes America Corp. divisions.

Jerry Ogren is now general manager of Lincoln, Neb., operations; Tom Stuart is acting general manager at Johnson Creek, Wis.; Tom Meier is acting general manager at Orrville, Ohio; and Wally Stuart is general manager at Keswick, Ontario.

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BEYOND THE HEADLINES

Editor's Note: In light of recent news reports linking 2,4-D with cancer in dogs, the Industry Task Force on 2,4-D and Lawn & Landscape Maintenance magazine designed this fact sheet to answer your questions as well as those of your customers. Simply detach this section from the magazine and reproduce it for your staff and customers.

he Journal of the National Cancer Institute (NCI) recently published the results of a study that claims to link the incidence of malignant lymphoma, a kind of cancer, among dogs to the use of lawn care products containing 2,4-D.

The Task Force has done a preliminary review of the NCI canine lymphoma study and raised many serious concerns about the validity of both its methods and its results.

Nevertheless, the Task Force has concluded that, even taken at face value, the findings of this study add little to the weight of existing scientific evidence supporting the safety of 2,4-D — to people and animals — so long as common sense and good work habits prevail. 2,4-D has been studied extensively in lab animals. These tests and numerous other studies and scientific reviews substantiate the belief that 2,4-D does not cause cancer.

THE WEIGHT OF THE EVIDENCE SUPPORTING
THE SAFETY OF 2.4-D. As recently as 18 months ago, the Harvard School of Public Health convened a panel of independent experts in toxicology, epidemiology and medicine to examine the weight of the scientific evidence linking 2,4-D to cancer. Participants in the workshop reviewed all human and animal data.

Of the 13 panelists, none considered 2,4-D a known or probable cause of cancer in humans. The report of their proceedings states that animal research provides little reason to expect that 2,4-D causes cancer at all, and that studies of occupational exposure to the herbicide do not establish a cause-and-effect relationship.

The findings of the Harvard panel corroborate those of at least four other independent scientific reviews of the question, performed by the U.S. Environmental Protection Agency, Agriculture Canada, the Canadian Centre for Toxicology, and the Council on Agricultural Science and Technology. None of these organizations has concluded that 2,4-D causes cancer.

THE NEED FOR A CLOSER LOOK AT THE LATEST NCI STUDY. While the Task Force is not persuaded by the NCI study that there is any association between the use of 2,4-D and the development of lymphoma, there is sufficient concern about the methodology, conduct and conclusions of the research to warrant an independent review.

To that end, the Task Force has asked Dr. George Carlo, chairman of Health and Environmental Sciences Group, Washington, D.C., and Dr. Ian Munro, director of the Canadian Centre for Toxicology, Guelph, Ontario, to convene a panel of scientists representing the international epidemiology,

toxicology, veterinary and medical communities to review the NCI study.

A closer look at

Institute study

the National Cancer

associating canine

with dog owners'

use of 2.4-D.

malignant lymphoma

In particular, the panel will look closely at the hypothesis on which the study is based — that there is an association between 2,4-D exposure and canine lymphoma — and determine whether or not this hypothesis is valid. There is particular concern, as noted, because the hypothesis is inconsistent with the findings of previous animal studies involving 2,4-D, and because the level of risk reported in the study is so small and the methodology questionable.

In the meantime, the Task Force wants to reiterate that the weakness of the NCI study's conclusions must be measured against the backdrop of numerous other studies and reviews which have found no convincing evidence of a link between 2,4-D and cancer. The NCI canine lymphoma study offers nothing to refute that contention.

HOW THE STUDY WAS DONE. The NCI researchers studied 491 dogs confirmed to have malignant lymphoma, 479 dogs with other tumors and 466 dogs hospitalized with forms of cancer other than lymphatic tumors.

The owners of the dogs, as identified by veterinarians' records, were asked to complete a mail survey or, if they failed to respond, were contacted and questioned by telephone. Participants in the survey were asked simply whether or not they themselves used lawn care chemicals, and if so, how many times a year and what brand of product, and whether they had a commercial lawn service in addition to or instead of applying pesticides themselves. The questionnaire did not ask specifically about 2.4-D use.

All the dogs without access to their owner's yards were classified as unexposed, as were dogs whose owners did not report using 2,4-D.

what the study found. The study reported an odds ratio of 1.3 for dog owner application of 2,4-D, and/or employment of a commercial lawn care service. In epidemiology, the odds ratio is an estimate of the risk of disease associated with exposure to the suspected cause of that disease.

Most epidemiologists would consider an odds ratio of less than 2.00 to be unpersuasive and likely due to chance.

An odds ratio of 1.3 would mean that dogs presumed to have been exposed to 2,4-D in lawn care chemicals have about a 30 percent greater chance of developing malignant lym-

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SOME USEFUL BACKGROUND ON EPIDEMIOLOGY

Much of the controversy surrounding the health affects of 2,4-D is based on or generated by reports of research that attempt to make a connection between, in the case of 2,4-D, exposure to the herbicide and a rare form of cancer, non-Hodgkin's lymphoma. Many of these studies come from a branch of science known as epidemiology, which examines the distribution of a given disease and its causes, usually in human populations.

Epidemiological studies begin with the scientists' hypothesis about what they suspect might be causing the disease to occur, particularly if it is found among people who have something in common in their habits, lifestyle or occupation.

If, for example, many people who work in the same factory develop the same or similar types of cancer, one logical hypothesis would be that the cause of the cancer is something with which they come into contact at work. Or maybe not. Maybe they all smoke cigarettes, or live in homes served by wells that are somehow contaminated. Or perhaps the association is purely coincidental.

The epidemiologist must use data obtained from the real world, where subjects from various backgrounds and different environmental conditions are exposed to a variety of situations. Even carefully designed epidemiological studies may be susceptible to statistical or other unintentional errors.

Therefore, epidemiologists do not consider that an association found between a disease and its suspected cause in any one, single study proves a cause-and-effect relationship between that disease and the suspected cause. Only when a pattern shows up repeatedly — as in the link between lung cancer and smoking — do the studies establish

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a causal relationship.

Many epidemiological studies are case-control studies; that is, studies in which a group of research subjects who have the disease in question are compared to at least two other groups, usually one with another type of disease and one that is healthy.

What is unusual about this NCI canine lymphoma study, however, is the fact that the researchers combined the two control groups, eliminating the opportunity to make two sets of comparisons.

The greatest strength of epidemiology is its relationship to real-life situations. Its principal weakness is that it is not a precise, experimental science, but an observational one.

Most often the research takes the form of administering surveys or questionnaires, either to the people who themselves are afflicted with the disease in question, or to their surviving next of kin or other relatives. This means that epidemiologists must rely heavily for their findings on people's often fallible memories.

Epidemiological studies tend to make the news if their results purport a link between something with which people come into contact and a serious, life-threatening illness such as cancer. The danger in these reports is the spread of unwarranted fear.

Conversely, however, people should not assume that nothing is harmful. Society has the science of epidemiology to thank for uncovering many of the hazards we now know to avoid. The key is to keep in mind the factors described above and to examine carefully—and from as many different sources as possible—the information that comes your way about threats to your health.

(continued from previous page)

phoma than dogs not exposed. However, in epidemiological terms, this represents an extremely weak association. An odds ratio of 1.0, for instance, means no difference in risk between exposure and nonexposure.

Furthermore, assessing whether or not a cause-and-effect relationship exists requires consideration of the total weight of the scientific evidence on the subject in question, not just one study. The findings of this study are inconsistent with the weight of the evidence on 2,4-D.

WEAKNESSES OF THE STUDY. In addition to the inconsistency of the NCI study's findings relative to other animal studies, which demonstrate that 2,4-D does not cause cancer, other aspects of this research are troublesome to the Task Force:

 Dog owners who applied their own lawn care chemicals were asked what commercial brand of products they used.

Farmers and commercial applicators who mix their own herbicide formulations know 2,4-D as such; average homeowners, as a rule, do not. While 2,4-D is a common and widely used weed killer, it is hardly a household word, and no commercially available product bears the name "2,4-D" on the label other than in small print in the list of the product's ingredients.

Furthermore, lawn care products available on the commercial market are virtually always mixtures of several compounds, possibly including 2,4-D, but also fertilizers and other pesticides as well, which confuses the picture.

- Since the findings are based on people's ability to remember exactly what herbicide they may have used as many as two decades ago, even a few mistakes in recollection could make a big difference. If, for example, as few as eight of the 191 owners of case dogs reported exposure to 2,4-D, when in fact they were not, then the alleged association between 2,4-D exposure and canine lymphoma would disappear.
- By combining the responses to two separate questions asked about the owners' application of lawn care chemicals and about contracting for commercial lawn treatment, the researchers seem to be assuming that commercial lawn treatment necessarily means treatment with 2,4-D. In fact, professional lawn service companies are more likely to apply mixtures of products, such as fertilizers, insecticides and non-2,4-D-containing herbicides.

- It is unclear from the report whether or not researchers asked owners about when, relative to chemical application, and for how long, their dogs were exposed to 2,4-D. Because 2,4-D is quickly and readily absorbed by plants, a dog let into the yard during or immediately after treatment would have a much greater opportunity for exposure than one allowed out even 24 hours later.
- The researchers pooled two control groups making it impossible to know whether the association reported was consistent across both groups.
- Some of the findings of the study seem to contradict others. For instance, fewer owners of animals with lymphoma reported using liquid 2,4-D than did owners of dogs in the control groups. It is hard to imagine a situation in which the use of granular 2,4-D would cause lymphoma, whereas 2,4-D in liquid form did not.

Additionally, there was no trend observed between lymphoma risk and duration of 2,4-D use. The results reported showed that applications of 2,4-D four or more times per year doubled the risk of lymphoma, yet the use of 2,4-D over periods of many years did not increase the risk of lymphoma at all.

THE IMPLICATIONS FOR HUMAN CANCER

risk in the study. While the Task Force regrets the alarm that the NCI canine lymphoma study may have spread among dog owners, it is especially concerned about the implications it draws about human cancer risk. The researchers point out that malignant lymphoma in dogs is similar to non-Hodgkin's lymphoma in humans, and refer to studies which have suggested a link between 2,4-D use among farmers and certain forms of cancer, including non-Hodgkin's lymphoma.

Unfortunately, the literature review contained in the NCI report cites only those human health studies which have suggested a link between 2,4-D and cancer, and then only in the most cursory way. Some of the studies to which the authors refer, such as the Kansas and Saskatchewan farm worker studies, investigated exposure to herbicides in general, not 2,4-D in particular.

Several studies which failed to find a link between 2,4-D and cancer were not mentioned at all. The tendency then, is to lead the reader to believe that the case against 2,4-D is stonger than it actually is.

The best scientific information available to date indicates that the use of 2,4-D, according to label directions, in agriculture and on lawns, will not harm pets or humans.

WHEN QUESTIONS ARISE, CALL THE 2,4-D HOTLINE

517/835-2091 in Canada 800/345-5109 in the United States

SPONSORED BY THE INDUSTRY TASK FORCE ON 2,4-D.

Reprinted with permission of the Industry Task Force on 2,4-D and Lawn & Landscape Maintenance magazine.

Barefoot Grass Goes Public

Barefoot Inc., parent company of Barefoot Grass, Worthington, Ohio, is going public — at least that's its intent.

Barefoot filed a registration statement of its desire to go public with the Securities and Exchange Commission. The proposed initial public offering is 2.5 million shares of common stock with an estimated price of \$11 to \$13 a share. Of these shares, 2,176,000 shares are being offered by the company and 324,000 shares by a selling shareholder.

The offering will be made through underwriters managed by William Blair & Co. and Kidder, Peabody & Co. once the SEC delivers its decision, expected sometime this month.

Net proceeds to the company will be used to repay indebtedness incurred in 1989 to finance the company's recapitalization and the subsequent acquisition of professional lawn maintenance companies.

Two years ago, Barefoot sold the majority interest of its firm to the Chicago-based investment firm Golder, Thoma Cressey. The firm is expected to offer on-

ly a small amount of its shares.

"We hope to significantly reduce interest expenses and generate more cash

Barefoot Grass

for the company," said Pat Norton, president. "It's a good decision for us from a financial and visibility standpoint."

During a four-month fact-finding mission, underwriters assessed the value of the company and whether it was marketable to the public.

Norton thinks going public is good for Barefoot and the lawn maintenance industry. "We've all read enough negative things about the industry. Hopefully, the entire industry will benefit from increased valuation."

Mobay to Change Its Name to Miles Inc.

Mobay Specialty Products Group will soon operate under a new name.

Because of the reorganization and renaming of Mobay's parent company, Bayer USA Inc., Pittsburgh, to Miles Inc., Mobay will become a division of Miles.

Bayer USA is the U.S. management holding company of Bayer AG, Leverkusen, Germany. Effective Jan. 1, 1992, the holding company will become an operating firm and take the name of its largest subsidiary, Miles Inc.

Under agreements with Sterling Drug, the maker of 'Bayer' aspirin, the Bayer USA name could be used for a holding company, but not an operating company. The Miles name was chosen after extensive research and because Bayer USA already owned Miles, which has a 108-year-old reputation.

The new organization and name change are designed to create and develop a common corporate culture; improve competitiveness; better meet customer needs, streamline the management structure by shortening the lines of communication, decision-making and reporting; and improve efficiency by taking advantage of synergies in the service functions of the company.

The Miles name is said to be more well-known beyond the specialty industry, and should provide a larger support network to its customers.

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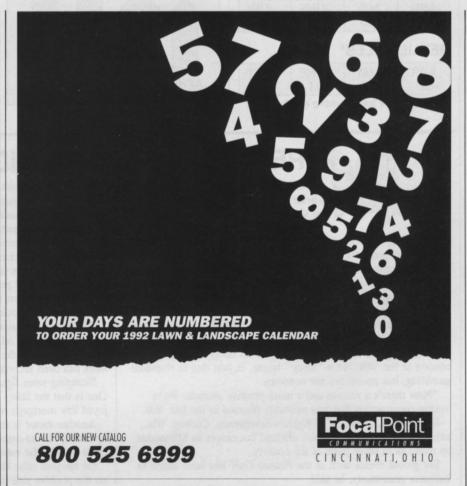


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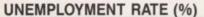
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Business Watch

THE REAL ESTATE INDUSTRY suffered through one of its worst months in July. Just when the light at the end of the tunnel appeared brighter, a large train called the sluggish economy came roaring through the tunnel. Sales of existing homes across the nation fell for the first time in six months in July, dropping 6.7 percent to 3,350,000 units. National figures on new home sales also took a nose dive, falling 8.5 percent to 472,000 units, representing the largest drop in new units sold this year. Another signal of a slow-to-recover economy was the failure of the consumer price index to drop for the fourth consecutive month. Good news came in the form of the national unemployment rate dropping 0.2 percentage points to 6.8 percent; a 0.5 percent increase in retail sales to \$153.7 million nationally and the increase in housing starts for the fourth consecutive month to 1,070,000 units.



APR.	MAY	JUNE	JULY
6.6	6.9	7.0	6.8
0.0	0.5	1.0	0.0

RETAIL SALES*

APR.	MAY	JUNE	JULY
-0.3	+1.2	+0.1	+0.5

^{*}Percent change from preceding month.



Source: U.S. Census Bureau



Source: National Association of Realtors



Source: National Association of Realtors

REGIONAL REPORT: MIDWEST

ECONOMIC FIGURES for the Midwest indicate that while improvement is evident in some areas, declaring the ailing economy as cured is premature. A typically

conservative, but optimistic approach is what most Midwestern landscape contractors are taking as they enter the fourth quarter.

"Things continue to be slow, but are much improved over last year," said Jim Engledow, interior division manager for Engledow Inc., Indianapolis. "Last year things just stopped. Now, construction is starting to resume on new offices, new office malls. I think builders have changed their attitudes; they're building more on spec."

Monty Mitchell, president of Suburban Landscape Associates, Davenport, Iowa, said that his area was hit fairly hard by the recession in the '80s, but a "teeny" boom, in part due to riverboat gambling, has revitalized the economy.

"Now there's a release and a more positive attitude. We're seeing construction that was probably planned in the late '80s.

Ron Kujawa, president of Kujawa Enterprises, Cudahy, Wis., said that the recession has not affected businesses in Milwaukee as much as in other parts of the country.

But global events such as the Persian Gulf War have added to business uncertainty, he said. "People don't know what to do so they do very little. Uncertainty has caused many of our customers to delay. I look for the economy to start warming up shortly."

But even the experts have difficulty pinpointing when that "warm-up" will occur. According to recent figures released by the National Association of Realtors, the economic recovery in the housing market has stalled some. New home sales for the Midwest in July dropped 37 points from June's year-high mark of 106,000 to 69,000, the lowest the figure has gone since January when only 65,000 units were sold.

Existing home sales in the Midwest also felt the backlash of a negative economy, falling 3.3 percent from June to 890,000 units in July. It marked the second consecutive month that a drop in sales has been recorded.

Slumping sales figures can be attributed to a variety of factors. One is that the heavy activity in May and June, when buyers enjoyed low mortgage rates and favorable prices, has just hit a lull.

Another factor is that many consumers are cautious about tying up money for an extended period of time. Also, the unemployment rate for the nation remained high at 6.8 percent.

On the plus side: Housing starts and retail sales figures remained on the positive side of the ledger.



January 4, 1991 Service Warranty

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Association News

THE PROFESSIONAL LAWN Care Association of America is asking all lawn care companies to support its legislative activities through contributions to the Federal Issues Management Fund. PLCAA's appeal for donations is especially timely in light of the Supreme Court's recent 9-0 decision that gives local governments the right to regulate the manufacture, sale and use of pesticides.

Previously, top lawn maintenance companies and PLCAA have contributed from \$5,000 to \$40,000 each to the fund. Much of those contributions were used to support PLCAA's successful campaign during the May lawn care hearings. But since the June Supreme Court decision, the association is requesting even more financial support.

Contributions of any amount can be made to the association (include notation "Federal Issues").

College students and prospective employers can exchange resumes and business

For More Information...

PLCAA

1000 Johnson Ferry Rd., NE Suite C-135 Marietta, Ga. 30068-2112 404/977-5222

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

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cards at the Mid-Am Trade Show in Chicago, Jan. 16-18, when Mid-Am sponsors its third annual Career Center. The center attracts horticultural students from more than 50 regional colleges and universities, as well as horticulture industry employers from the Midwest.

The center brings together employers

and students seeking full-time employment in nursery, garden center, landscape maintenance, design and interiorscaping industries. Companies can conduct brief interviews with participating students.

Invitations to the Career Center will be mailed this fall.

(continued on page 14)

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Association News

(continued from page 12)

The **Sports Turf Managers Association** is seeking nominations for its awards program, held during STMA's annual meeting in San Diego, Calif., Dec. 4-7.

Nominations are sought in five award categories: Football Field of the Year; Soccer Field of the Year; Outstanding Commercial Affiliate; Excellence in Research; and the Lawn Ranger Award for best groundskeeper.

Nominations for each award must be submitted in accordance with procedures outlined for the category. Entrants must be STMA members to qualify. All nominations are due by 5 p.m., Friday, Oct. 23; and should be submitted to Greg Petry, Waukegan Park District, P.O. Box 708, Waukegan, Ill. 60079; Attn: STMA Awards.

The **Guelph Turfgrass Institute** at The University of Guelph is co-sponsoring the first Ontario Turfgrass Symposium, Jan. 7-9.

The symposium will address the needs of all sectors of the turfgrass industry, including lawn care, sports turf and golf courses, through a trade show and educational sessions.

Many of those sessions will focus on environmental issues. Ongoing research into the environmentally sound use of fertilizers, water and pesticides will be examined, including scientific studies sponsored by the Ontario Ministries of the Environment and Agriculture and Food, and the Ontario Turfgrass Research Foundation.

Keynote speaker is Eliot Roberts, director of the Lawn Institute, on "Turf Stands Tall Among the Trees — An Environmental Perspective."

L. Darwin McKay of Turfco, Meridian, Idaho, has been selected the 21st president of the American Sod Producers Association. McKay's appointment was announced during the 1991 Summer Convention and Field Days in Portland, Ore. More than 600 ASPA members and guests attended.

Also elected to the 1991-92 ASPA Board of Trustees were: Mike Holmes, Warren's Turf Nursery, Crystal Lake, Ill., to vice president; and Richard Schiedel, Compact Sod Farms, Cambridge, Ontario, secretary-treasurer.

Trustee positions went to David Doguet, Crenshaw & Doguet Turfgrass, Austin, Texas; William Huber, Huber Ranch Sod Nursery, Schneider, Ind.; and Wayne Thorson, Todd Valley Farms, Mead, Neb.

McKay will preside over ASPA's 1992 Midwinter Conference at Bally's Casino & Resort, Las Vegas, Feb. 5-7.

A new **Connecticut lawn care association** is forming. An influx of unlicensed pesticide applicators and inexperienced homeowner usage were both cited as reasons for the new association.

According to Dick Tice, owner of T&L Lawn Services, Cheshire, Conn., and acting vice president, "Our intent is to work with all of the existing green industry associations. We are not running in competition with them."

Currently, no other state association specifically targets the needs of all lawn maintenance professionals, Tice said. A state groundskeeper association exists, but its bylaws do not permit membership of chemical companies or franchises, he said.

Tice did not rule out the possibility of membership with a national association such as the Professional Lawn Care Association of America.

Meetings are held on the first Thursday of every month. Locations vary to accommodate businesses from around the state. No name has been selected for the group, which is in now in its third month.



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"When I started my business seven years ago I needed expert advice," says Joe Skelton, president of Lifescapes, Inc., Canton, Georgia. "That's when I joined ALCA.

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If you are an exterior, interior or management landscape contractor or simply want to see the landscape industry grow, call (703) 241-4004 for more information or write to: ALCA, 405 N. Washington St., #104, Falls Church, VA 22046. Fax (703) 532-0463.



ASSOCIATED LANDSCAPE CONTRACTORS OF AMERICA



Irrigation News

Easy I.D. For Water Reclamation

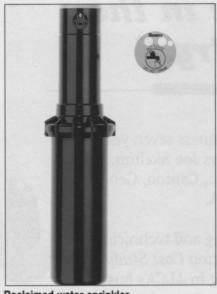
HUNTER INDUSTRIES has introduced purple-capped reclaimed water sprinklers for use on residential and commercial sites. The identifier caps alert field personnel that the reclaimed water is for irrigation purposes only and not for human consumption.

A "Do Not Drink" warning and symbol are printed on the cap in English and Spanish. The purple color conforms with an emerging industry standard that identifies components of reclaimed water systems.

Aside from the purple caps, the sprinklers are identical to the company's geardriven rotors and fixed spray heads.

Sprinklers fitted with the purple caps include PGP pop-up, PGS shrub, PGH high pop, S-type spray, R-type multiple stream, I-10 shrub, I-20 pop-up, I-25 pop-up and I-40 pop-up.

The company is also offering a brochure that discusses the importance of reclaimed water.



Reclaimed water sprinkler.

For further information, contact Hunter Industries, 1940 Diamond Street, San Marcos, Calif. 92069; 619/591-7034.

Free Analysis Checks Tubing "Fingerprint"

Union Carbide Chemicals and Plastics Co. Inc. is offering a free irrigation tubing analysis to verify the quality and type of materials used in its manufacture.

The free analysis is offered in conjunction with Union Carbide's "Fingerprint" irrigation tubing resin series. The company has introduced a trace element into its 7510/12 series resins and 7510 series black masterbatch. This trace element acts as a chemical fingerprint, identifying the presence of 7510 resins in the irrigation tubing produced by manufacturers using Union Carbide resins.

The analysis also identifies whether the carbon black used by manufacturers to

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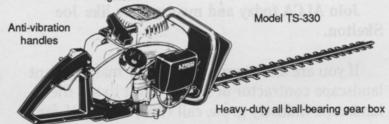
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For a free analysis, send a two-foot sample of irrigation tubing to: Union Carbide, Dept. QA, Bldg. 561, P.O. Box 186, Port Lavaca, Texas 77979. Irrigation tubing from Union Carbide's 7510 series can be identified at the point of purchase by the Green Fingerprint logo.

role under his leadership. "I think that putting together better and more educational programs is a way of accomplishing what we're trying to do." Putnam said he would like to see the association strike a balance between agricultural and turf irrigation.

"The Irrigation Association has lately been accused of becoming a turf irrigation association. I want the emphasis to be equal. I don't want us to put more emphasis on one aspect of irrigation than another." He added that both agricultural and turf irrigation have a "long way to go as far as irrigation efficiency" is concerned.

Putnam is a 30-year veteran of the irrigation industry and past president of IA. Previously, he was vice president and corporate director of the Dallas-based Telsco Industries, manufacturer of Weathermatic Irrigation Products and Telsco fittings. He has also held positions at Turfco Inc., Bay Irrigation and Turf Supply, Ewing Irrigation Products and Champion Irrigation Products.

Historian Plans Book On Irrigation History

"History of Irrigation," by Bob Morgan, is the first fully illustrated, historical analysis of irrigation in the United States. Morgan is a historian for the Irrigation Association.

The limited edition hardcover volume chronicles the role of irrigation and water use in America's agricultural and landscape development.

IA seeks corporate sponsorship for the project. The histories of irrigation businesses will be detailed in a chapter entitled, "Partners in Progress."

Irrigation Brochure Receives Award

The Public Relations Society of America, Orange County Chapter, has honored Rain Bird Sales, Inc. with an Award of Excellence for its "Making a Good First Impression" brochure.

The two-color brochure is a brief, stepby-step guide to presenting a professional image to prospective customers.

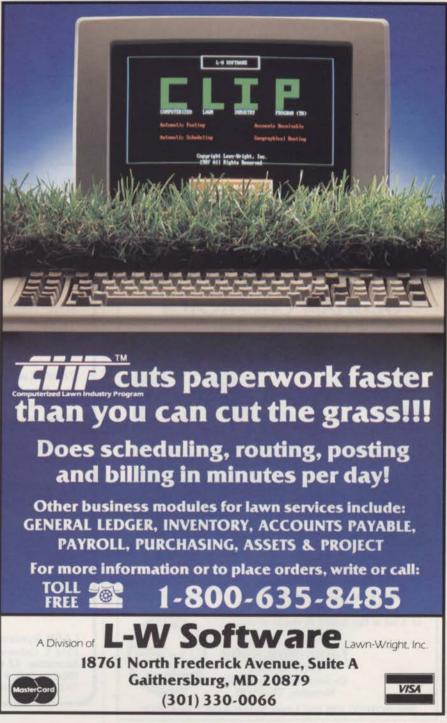
For a copy of "Making a Good First Impression," contact Rain Bird Sales, Inc., Contractor's Division, 155 North Grand Ave., Glendora, Calif. 91740

IA Picks Putnam As Executive Director

Charles "Pepper" Putnam is the new executive director of the Irrigation Association. He is responsible for directing the operations and staff of the association's Arlington, Va., headquarters; as well as overseeing the Membership and Technical Services office, managed by R.C. "Bob" Sears in Sacramento, Calif.

Putnam said that one of his major goals is to raise the association's profile through expanded membership and increased cooperation with local associations.

Education will also play an important



Compost Digest

Californians Getting Backyard Compost Bins

Seven California communities began programs to foster the use of backyard composting bins, according to Harmonious Technologies, Pasadena, Calif. Berkeley, Glendale, Los Angeles (city and county), Pasadena, San Diego and Ventura all announced plans to encourage backyard composting, some by giving bins to interested residents.

In Berkeley, residents got a reduced price on 1,000 bins purchased by the city. Glendale gave away 300 plastic and 100 wooden compost bins to residents on a first-come-first-served basis. It distributed the bins in conjunction with composting classes.

Los Angeles County started a pilot backyard composting project in Altadena. The pilot includes a demonstration site, composting classes and the sale of bins to the public at wholesale prices. The city of

Nurserymen Take Stand On Solid Waste Issue

THE BOARD OF directors of the American Association of Nurserymen, Washington, approved a formal position statement on solid-waste management. "Legislation and regulation on this issue will have a direct, bottom-line impact on nursery industry firms," said Richard Campbell, president of AAN.

According to the position statement, the association supports the basic reduce, reuse, recycle, compost and disposal hierarchy. A survey of its members indicates that 75 percent reuse plastic pots or return them to the source for reuse, and 35 percent said they recycle polyethylene film and plastic pots, according to the AAN. In the same survey, 50 percent of the respondents said they compost organic wastes and nearly 50 percent use compost as a soil amendment.

"It is important that our industry have well thought out, pragmatic positions on key national issues," said Campbell, who also serves as president of Campbell Nurseries and Garden Centers, Lincoln, Neb. "This enables us to speak with one national voice and guides our actions on Capital Hill and in key federal regulatory agencies."

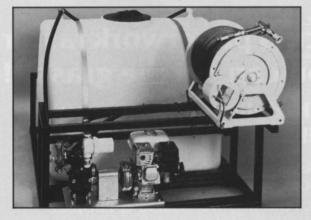
Los Angeles announced plans to offer residents a rebate on the purchase of composting bins. Pasadena plans a similar

rebate program.

San Diego County issued a grant to San Diego Recyclers to purchase and sell 1,000

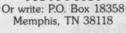
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wooden composting bins to residents for \$5 each. Ventura's program includes the sale of bins at a wholesale cost of between \$25 and \$55; monthly classes for beginners; a six-week master composter program; and a composting program for schools.

Harmonious also announced the release of its book *Backyard Composting, Your Complete Guide to Recycled Yard Clippings*. The 98-page, digest-sized book includes a short questions and answers section and 13 chapters on topics ranging from "Compost Happens" and "Soil Fertility" to "Miracle Mulch" and "Organic Compost Matters."

It also provides a source list of compost bin manufacturers, videos, related magazines and organizations.

Obtain Your Guide To Composting

The Solid-Waste Composting Council, Washington, published its 48-page report "A Decision-Maker's Guide To The Composting Industry."

"Today it is economically viable, technologically feasible and ecologically expedient to exploit the ancient process of composting to help solve the modern problem of solid-waste disposal," according to the report.

Its seven chapters include: "What Is MSW Compost?" "Will It Work?" "How Does It Fit Into An Integrated Waste Management System?" "Who's Doing It Now?" "What Good Is Compost?" "What Criteria Should Compost Products Meet?" and "What Criteria Should Be Met In The Composting Process?"

In addition, the report includes an 81-page glossary.

Northwest Compost Councils Formed

Composters in Washington and Oregon banded together to form the Washington Organic Recycling Council, Puyallup, Wash., and the Northwest Organic Waste Processors and Consumers Association, Tualatin, Ore.

Both organizations seek to promote composting as a viable method of solid-waste management. WORC may be reached at 206/847-7555 and NOWPCA at 503/692-3757.

Garden Council Issues Leaf Recommendations

The Garden Council, Chicago, issued simple guidelines for composting fall leaves.

"Leaves need to be removed in the fall to eliminate hiding places for insects and to prevent the lawn from being smothered," according to the council. "When leaves are left for the next spring's clean-up chores, the lawn gets a slow start and may have holes or brown spots which will then require special treatment."

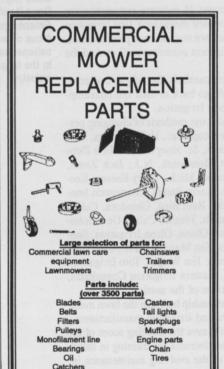
According to Doug Welsh of the Texas Agricultural Extension Service, leaf composting is a simple, four-step process.

•Gather the leaves in a pile and shred them with a lawn mower to promote rapid decomposition.

•Create a compost area using either a commercially available compost unit or any number of home designs.

•Add leaves in a three-layer formula consisting of 10 to 12 inches of leaves, one inch of soil and a handful of nitrogen fertilizer per layer.

•Stir or turn the pile regularly and keep it moist.



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BRIDGING THE IRRIGATION

Who's responsible for filling the education void in the professional irrigation industry? A group of contractors and manufacturers discussed the controversial issue at the industry's first irrigation roundtable.

By Cindy Code

EDUCATION. IT SEEMS so simple. From first grade forward we're trained to attend courses designed to increase our knowledge of a variety of subjects. But after we enter the professional work force, does the education stop? If not, who's responsible for keeping the knowledge flowing: the employer, the employee or the industry's suppliers?

With an industry as segmented as the green industry, it's virtually impossible to find a one-stop shop for learning. But if everyone from the manufacturer on down to the end-user were familiar with the ins and outs of irrigation selection, installation and maintenance, wouldn't the green industry produce water savings like no one's ever seen before?

So how does the irrigation industry go about educating itself? What and where is the best mechanism to achieve seemingly elusive education?

That was the dominant concern among 14 industry representatives attending Lawn & Landscape Maintenance magazine's first irrigation roundtable. Seven manufacturers, three lawn maintenance professionals, two irrigation contractors and two irrigation consultants all evoked the same cry: We need more education.

The problem is, "water conservation parallels that of gas conservation. Once the shortage is 'over' people go back to their old consumption patterns," said Don Olson of Olson Irrigation.

To debate the "water" issue and to discuss methods of changing perceptions we invited: Doug Berlin, Greenscape Inc., Holly Springs, N.C. Dick Crowl, Crowl's Irrigation Services, St. Joseph, Mo.; Bob Dobson, Middletown Sprinkler Co., Port Monmouth, N.J.; Jack Zendt, Zendt Brothers Landscaping, Mt. Clemens, Mich.; Larry Keesen, Keesen Water Management, Denver, Colo.; Larry Bareis, Ecosystems Imagery, Encinitas, Calif.; Keith Sheperski, Rain Bird, Glendora, Calif.; Bob Batterson, Pepco Water Conservation, Fresno, Calif.; Gene Johnson, Weather-Matic, Dallas, Texas; Don Olson, Olson Irrigation, Santee, Calif.; Joe Silva, Hunter Industries, San Marcos, Calif.; Steve Perkins, Hardie Irrigation, McKinney, Texas; Jim Wright, Toro Irrigation, Riverside, Calif.; and Brian Vinchesi, Eastern Irrigation Consultants, Pepperell, Mass. Vinchesi was moderator of the session.

The mission: Understanding the relationship between the lawn maintenance industry, irrigation contractors and irrigation manufacturers.

The result: Although the group didn't leave the meeting room of the Dunes Hotel in Las Vegas with an exact formula for training in mind, each left with a better understanding of the evolving maintenance industry and possible avenues for improving professionalism.

A diverse number of scenarios are common in the irrigation field, leading to difficulty in targeting specific educational needs. Sometimes the irrigator works solo, handling installation and leaving maintenance to the lawn maintenance operator. Other times, the landscaper will handle installation and maintenance. While in other instances, there may be a few people on one property handling everything from wiring to equipment installation to spot maintenance to winterizing. Confusing, isn't it?

Therefore, how is this fragmented mix of professionals, and some not



industry.









Debating the issues: Joe Silva of Hunter and Larry Keesen of Keesen Water Management (left); Jim Wright of Toro (top right); and Larry Bareis of Ecosystems Imagery (bottom right).

so professional operators, supposed to learn what's best for them, the landscape and their customers?

To date, only three states have laws requiring irrigation contractors to be licensed: Texas, New Jersey and Connecticut. Once licensing is achieved, (not an inexpensive feat), keeping it is another matter. Although a money maker for the state's coffers, Texas came dangerously close to losing its licensing this year. Currently, Florida is among the states fighting for irrigation licensing rights.

The Irrigation Association offers certified irrigation programs in the areas of design, contracting and management. These, however, don't take the place of licensing where required.

In its first year of testing, more than 400 people have been certified by the IA as auditors. Other programs, introduced in the past few years, include certified designers, about 260 passed; contractors, about 14 passed; and managers, about 10 passed.

Bareis, a California landscape contractor, agreed that there weren't nearly enough questions involving irrigation on the landscape exam he took.

"People can become landscaping contractors without a full knowledge of how to install a high quality irrigation system," he said. "You can always educate the maintenance staff, but if the person that installed the job was not educated then the system will get off on the wrong foot. License distribution needs to be a little tighter."

WHO'S RESPONSIBLE? So, without further ado, whose responsibility is it to educate? Is it the distributors, the manufacturers or the end user himself?

It's generally thought that individual contractors are responsible for educating themselves and their employees rather than the direct responsibility of the manufacturer or the distributor.

The manufacturer and the distributor are certainly there to assist, but the contractor needs to take the responsibility to see that he is educated and so are his people, said Keesen, a Denver-based irrigation consultant.

"The biggest problem I see is maintenance contractors and/or their employees who have no idea what they are doing with the irrigation system, like when to turn it on and how much to water," he

Through years of systems evaluation, Keesen has found that water consumption in most cases far outnumbers need. For instance, 30 inches is the maximum annual water application requirement in Denver, but it's not uncommon to see 50, 60 or even as much as 120 inches of water applied annually.

But the disparity stems in part from the different criteria placed on the irrigation installer vs. the landscape contractor when they're not the same person.

"When you have management people or landscape contractors coming in and taking responsibility for setting these systems, their criteria is to keep the grass green. They're evaluated on how well that is done and sometimes that means applying twice as much water as necessary," said Dobson, a New Jersey irrigation contractor. "Unfortunately in the Northeast, water has not become as

ROUNDTABLE

WHO'S WHO

MODERATOR

Brian Vinchesi Eastern Irrigation Consultants Pepperell, Mass.

CONTRACTORS

Doug Berlin Greenscape Inc. Holly Springs, N.C.

Dick Crowl Crowl's Irrigation Services St. Joseph, Mo.

Bob Dobson Middletown Sprinkler Co. Port Monmouth, N.J.

Larry Bareis Ecosystems Imagery Encinitas, Calif.

Jack Zendt Zendt Brothers Mt. Clemens, Mich.

CONSULTANT

Larry Keesen Keesen Water Management Denver, Colo.

MANUFACTURERS

Keith Sheperski Rain Bird Glendora, Calif.

Bob Batterson Pepco Water Conservation Fresno, Calif.

Gene Johnson Weather-Matic Dallas, Texas

Don Olson Olson Irrigation Santee, Calif.

Joe Silva Hunter Industries San Marcos, Calif.

Steve Perkins Hardie Irrigation Riverside, Calif.

Jim Wright Toro Irrigation Riverside, Calif.

precious as it is in some drier areas."

Dobson, who works strictly on the irrigation side, said there is a need to reach the maintenance

contractors as well as the homeowner to educate them on watering requirements. Rather than issuing blanket sprinkling statements across the country, individual regions need to determine watering requirements for specific turf types as well as seasonal variances.

Such information may be pro-

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vided by cooperative extension services, local universities, newspaper garden columns as well as other avenues, all in an attempt to produce articles stressing water savings, particularly through automatic irrigation systems.

While the method seems plausible, it's clear that the industry must strive to propel this education vehicle and not rely strictly on state universities to carry the burden.

"We are going to have to be the motivating factor behind it in order to try to get the end user educated," Dobson said. "If the manufacturers and distributors Brian Vinchesi, Eastern Irrigation Consultants (left) and Gene Johnson, Weather-Matic.

water savings of about 50 percent if it was educated from top to bottom, according to Sheperski. He related the following story to illustrate how prevalent water waste is across the country:

"I received a phone call from the head of the parks department in a large West Coast city. He said, 'Keith, how much water could we save if we converted all of our manual systems to automatic systems?' I said, If you just fine tuned all your automatic systems you could probably save about 30



I asked him what his controllers were originally set at? He said 'It was an unwritten rule that every station all over the town was set at 20 minutes.' That just goes to show you that a little fine tuning goes a long way."

Indeed, most plant fatalities are said to result from over watering rather than under watering.

An individual's level of knowledge can correlate directly to his route into the irrigation field. It was once the exception rather than the rule for a contractor to enter the irrigation business from the landscape side of the fence.



Such a background gives the operator a knowledge of plant material in addition, it's hoped, to a knowledge of irrigation installation and maintenance.

"In my view, if you worry about the entire system, with experts on staff who understand the water requirements of the plants and experts who understand the application rate of the sprinklers, you would be better off," Hunter's Silva said. "The problem is people don't know the rate at which sprinklers apply water, and even with this highly educated group here you could take a survey and

Most plant fatalities stem from over rather than under watering.

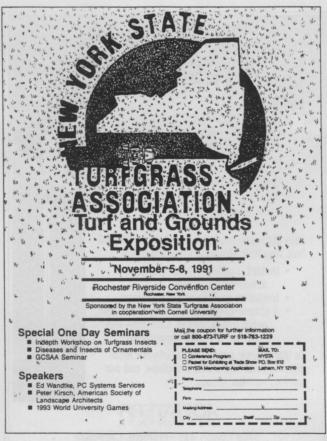
have the ability to put on good educational classes, then it's up to the contractors to demand it."

The industry would realize a

percent of what you're using in those areas.

"Since he had already done that at an 80 percent water savings,





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probably miss the mark by a good percentage."

Zendt, a Michigan landscape contractor, argued that it's up to those making a profit to educate the users of their products.

"In most instances, our costs are the same as those charged to the untrained operator. You people still make the same profit regardless of who your products are sold to," Zendt said. "We as legitimate contractors end up with less and less of the work and certainly our profit is shrinking.

"I have always contended that the burden of policing the industry should be born by the individuals reaping the benefits, and it is not the contractor — it is the manufacturer."

Zendt is particularly distressed by do-it-yourself competition and/or untrained operators, and thinks the price structure of irrigation products should reflect the level of expertise. For instance, an amateur irrigator shouldn't be able to obtain the same products Zendt uses for the same price.

Although manufacturers indicated that they maintain various price structures, it's difficult to monitor it on a national basis.

"I don't think a nationwide supplier or manufacturer can work with each individual state to get the quality people needed for the job," Sheperski said. Whether or not the manufacturer has an inherent responsibility to educate, it's the end user who ultimately must make sure he is educated.

"This has been a problem forever," Keesen said, "Contractors

The industry would realize a water savings of about 50 pecent if it were educated from

top to bottom.

Johnson reiterated that the responsibility of education falls at every level. And like others, Weathermatic has offered irrigation schooling. But from a liability point of view, manufacturers have to be careful how they qualify irrigation contractors. A company may designate a contractor as qualified and then be held responsible for a poor installation job down the road.

need to take the responsibility of marketing themselves. If you want to show that you are better, get involved in certain certification programs. Show your clients that you're a certified irrigation designer, certified irrigation contractor or certified irrigation manager, whatever it may be. It's not fair or reasonable to expect the manufacturer or distributor, to police the industry. No laws

are going to change shoddy workmanship.

"Education is the responsibility of each level of distribution," said Crowl, a Missouri irrigation contractor. "The manufacturer is responsible for his people and his distributors, the distributors are responsible for his people and the contractors, and the contractors are responsible for his people and the user of the irrigation system.

"Even if you get this far (with education), I have not been in an industry yet where they have the funds to police it after it was instituted."

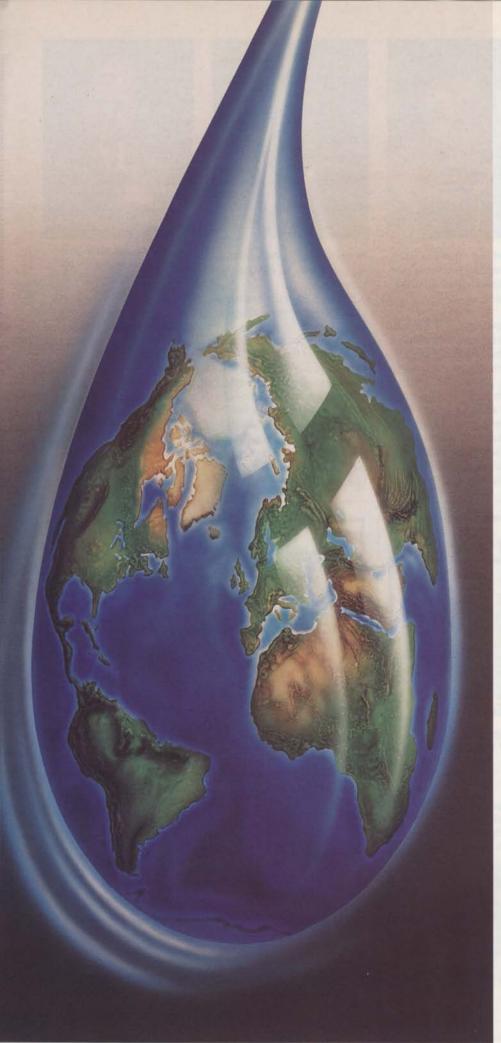
SOLUTIONS? Many manufacturers offer some sort of training, to their distributors and/or through their distributors, which in all likelihood is designed to make its way down to the end users. Nevertheless, education opportunities in irrigation basics and general business knowledge is lacking.

"The majority of the contractors out there have no idea how

(continued on page 28)







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Irrigation Gap (continued from page 26)

much money they are making or how to properly run a business, and I think that leads to most of the problems that the contractors have today," Perkins said. "It certainly is a price generated problem because the less you know about business the less money you are bound to make intentionally, or unintentionally.

"If some sort of business expertise is not included in licensing or certification exams then we are not really covering the entire problem or information required to run a successful business," he added.

Silva agreed. "If we did a better job of educating people as business people, I think that would limit these unqualified competitors," he said. "More than certification, we try to be business people. It's got to be selfpoliced.

It's generally not until water becomes a precious commodity that people start clamoring for certification to boost business,



Batterson said. "You start seeing property managers and customers leaning toward qualified contractors who are qualified to use water."

Various agencies in Colorado are requiring that all work be done by certified irrigation contractors. The state highway department, for instance, permits only certified irrigation designers to perform highway design.

'There is a lot of interest in Denver to encourage that kind of legislation, keeping water conservation in mind," Keesen said. "Water surveyers, at least in the



western part of the United States, are very interested in water conservation."

In fact, Keesen recommended using water surveyers as an educational vehicle.

But what else can the irrigation manufacturer do to assist the irrigation and/or landscape contractor in gaining new knowledge?

'By educating the public — the architects, the specifiers and the buying public — better about the products on the market," Bareis said. "Many of the people we do jobs for don't understand irrigation at all.'



Joe Silva, Hunter (left); Don Olson, Olson Irrigation (center); and Keith Sheperski, Rain

Videos showing the actual installation of an irrigation system including the trenching and plowing were coveted by all.

"Not only would the videos show the various types of equipment, they would show us the capabilities of the products," Crowl said. "It's a great educational tool so long as it's kept current."

Consumer product informa-(continued on page 30)

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Irrigation Gap (continued from page 28)

tion sheets for the ultimate irrigation system operator would be helpful, according to Dobson.

"Many of the manufacturers already have these, but they usually start with words like low cost, and the last thing we want to do when we are trying to sell somebody a \$10,000 irrigation system is a brochure talking about low cost," he said.

Promotional literature geared toward the property manager would also be a good idea, according to Berlin. As a group, they are becoming better educated and are responsible for the buying decisions. This type of product information can help back up the decision-making process and possibly provide monetary savings.

INSTITUTING STANDARDS. Included in most discussions of state certification and licensing are irrigation standards. Some independent associations have developed recommended standards

Steve Perkins, Hardie Irrigation (left); and Jim Wright, Toro.

for the design, installation and maintenance of irrigation systems in their states. Do they work?

"I think you have to have some form of licensing before standards are going to do much good," Perkins said. "It's the next step after licensing and policing of the industry are solved."

But contractors said standards are a godsend for bid standardization. And standards, if imposed properly by water districts, can positively encourage water savings.

For instance San Diego gives customers a reduced price if they lower their water usage. If they use too much, a fine is imposed.

"It's based on a 20 percent cutback that you have to meet annually. But it doesn't necessarily work because of discrepancies between large estates which water everything that moves to homeowners with tiny front yards which go brown to meet the 20-percent reduction," Bareis said. "If there



was some kind of incentive program for proper water maximization, it turns into a reward system rather than a penalty system."

In Denver, it was suggested that the water department input all irrigated areas into the computer system and from there, track monthly water usage.

"And you start by just putting reminders in the water bill, 'Oops, you went too far this month." Keesen said.

As with any certification program, the concern in the irrigation field is lack of requirements for keeping up with industry



changes.

"It's imperative that any certification program, whether it be a manufacturer's or an association's, require some sort of retesting or recertification credits to make sure those individuals stay abreast of improvements," Wright said. "Otherwise, the programs will be meaningless down the line."

WISH LISTS. Other topics which piqued the interest of the group were code requirements, backflow devices, computer-aided design, water reclamation, the do-

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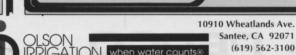
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it-yourself market and warranties. But outside of the education issue, only one topic received as much attention: product quality.

Given the opportunity, both makers and users of irrigation products presented their wish lists for changes in both the manufacture and use of product.

First the contractors:

- Controllers with greater voltage range or more protection against surges.
- More choices in small radius nozzles.
- Pressure controls built into the base of the head.

are infrequent, landscape installation and maintenance are chosen as the scapegoats.

Manufacturers, distributors, designers and installers all have to play an active role in educating city councils and water districts about accurate water needs and uses.

Not only should contractors be on the lookout for new legislation, they should look at existing legislation not currently being enforced. In different pockets of the country, for instance, irrigation contractors are seeing strong electrical and plumbing unions push-

Only three states have passed irrigation licensing laws.

- Minimum of 4-cycle starts on automatic controllers with repeat cycles.
- Automatic control valves with an isolation valve built into the front end, eliminating shut down of the entire system when making repairs.
- Versatile valves which can accommodate low and high capabilities.
 - · Pressure regulating valves.
- More user friendly controllers.
- More specifying of new products by architects.
 - · Improvements in rain sensors.
- More controllers with water budgets or seasonable adjust knobs.

Then the manufacturers:

- More specifics from end users on problems they are experiencing with equipment; including operating conditions, operating pressures and so on.
- Install heads properly, especially at the proper grade.
- Encourage feedback from contractors. Find a way to get them involved; share in the benefits.
- Communications with end users to make sure they understand how to operate the system.

FUTURE REGULATION. As for impending legislation, the industry should brace itself either to prevent or promote more regulation. When water shortages occur, particularly in areas where cutbacks

ing for a piece of the irrigation pie.

This was a big deal in New Jersey where the state electrical code stated that anything over 10 volts had to be installed by a licensed electrician, but for years was never enforced.

"In fact, most people didn't realize it existed until four years ago when an electrical contractors' association started sending out notices to various inspection departments stipulating that it was part of the code. All of a sudden we had to hire a licensed electrician to do the work," Dobson said.

"Most of the electricians had no desire whatsoever to come out and put in wiring. Secondly, it's really unfair to the consumer because it unnecessarily inflates the cost of the installation and creates coordination problems."

New Jersey irrigation contractors banded together and got the bill amended.

The best proactive step green industry contractors can take is introducing associations and organizations to political leaders so when water and other restrictions come up, they can ask for industry input.

Watch for more insights and interviews from our irrigation roundtable in future issues of Lawn & Landscape Maintenance magazine.

The author is Editor of Lawn & Landscape Maintenance magazine.

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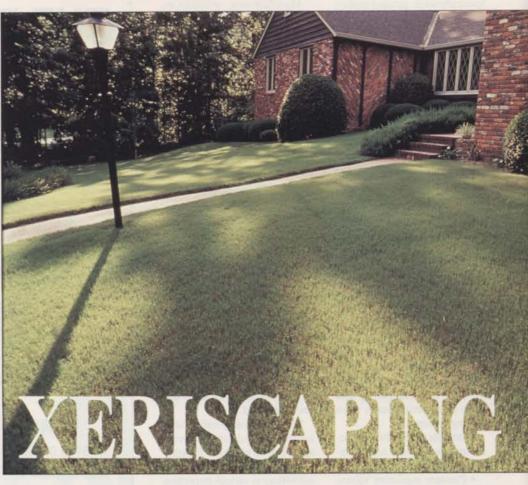
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Xeriscape does not mean "Zeroscape." Too often we hear people say, "Zeroscape — that's a landscape using only rocks and cactus, isn't it?" And while rocks and cactus may be included in

some xeriscapes, the emphasis should be to promote beautiful landscapes while conserving water

The word "Xeris" comes from the Greek word for "dry," but certainly does not mean non-irrigated. As irrigation systems continue to become integral elements of landscapes throughout the country, it is vital that landscape maintenance contractors incorporate xeriscape principles into their service capabilities.

Even in parts of the country where water is plentiful, conserving water saves customers money. By implementing xeriscape principles in your landscape maintenance approach, you can promote water conservation and provide customers with a valuable new service as well.

For xeriscape to be effective, both contractor and customer must be committed to conserving water. Increasingly, we are being approached by our customers with a simple question: "Can you help us save water and money through xeriscape?" Our reply is an enthusiastic "Yes, we can!" We have found that the single most important element of conserving water is customer commitment. Don't go into a xeriscape program without it.

The first steps of an effective xeriscape program are inexpensive, simple and effective. The mandate is clear: Manage the irrigation system in a water conserving manner.

CONSERVATION TIPS:

- Turn off the irrigation system during periods of rain. This should be part of the service you provide your customers. They become irritated when they see the sprinkler system operating during rainy periods.
- Reduce irrigation cycles and controller (clock) times whenever possible. Careful attention to turf needs and weather conditions will result in substantial savings as controllers are managed with a goal of saving water. (We did not operate one system here in Denver for 28 days during an unusually wet period this past summer.)

- Let the grass "talk to you" about the amount of water it needs. Watch the color of the turf and test soil conditions regularly. Learn to supply "just enough" water rather than too much water. Sometimes this conservative approach will result in dry areas. But customers committed to water conservation understand that you are trying to save both water and money.
- Take an "intensive" approach to irrigation system management.
 Irrigation technicians should attempt to visit properties three to five times per week so that they can adjust irrigation controllers to allow for changing weather conditions and precipitation.

By adopting a "water conservative" approach, you will be able to save significant amounts of water. This will require a more intense water management approach on your part.

Once your customers have committed to a "water conservative" approach, the next step is to encourage them to invest in some xeriscape technology. These im-



Even where water is plentiful, it's important to get a customer commitment to xeriscaping. Photo: DowElanco.

provements will enable irrigation system managers to be more effective in saving water.

For instance:

• Replace mechanical controllers with digital controllers. Most mechanical controllers do not allow for precise controller settings. A controller set for 15 minutes might operate for 10 or even 20 minutes. The newer, digital controllers allow system managers to program precise, to-the-minute controller settings.

Additionally, digital controllers

Xeriscaping doesn't mean eliminating turf and ornamentals; it's the promotion of beautiful landscapes while conserving water. By Tom Garber

allow managers to operate multiple programs. For example, one zone out of 11 needs twice-perday watering while the other 10 zones need water only three times per week.

Digital controllers can handle this requirement while mechanical controllers cannot. In this case, the installation of a digital controller would save the customer thousands of gallons of water in a short period of time.

• Install moisture-sensing shutoff devices on the system. The most inexpensive way to do this is to install rain shutoff devices above ground on nearby buildings or structures. Wire is run from the device back to the controller. When a predetermined amount of precipitation has fallen, the device overrides the controller for a period of time.

A more expensive and sophisticated method is to install moisture-sensing devices in the ground with wires running back to the valves and/or the controller. In either case, significant water savings can occur.

Additionally customers do not become irritated when they see the irrigation system running during a rain storm.

A CASE IN POINT. The board of directors of Arbor Green Home-

owners Association, Arvada, Colo., installed sophisticated digital controllers and rain shut-off devices in the spring of 1990. The property was cited later that year by the City of Arvada for reducing their water consumption by four million gallons over previous totals.

In 1991, they were able to save three-and-a-half million gallons during a 28-day period in July and August. (The system was cycled 22 times rather than the norm of 55 times.)

"Water conservation is everybody's responsibility, so we might as well make changes now before we get into a critical water shortage. We felt we had to take significant steps to conserve water knowing that it will take us a few years to achieve our ultimate goals," said Martin Dorn, homeowner's association grounds chairman.

Another way to achieve consistent water savings is to improve the existing water delivery system. This usually represents a significant financial investment on the part of the customer. And it will usually require years of water savings to offset the initial expenditure.

These improvements can range anywhere from the replacement of the entire irrigation system to the replacement of old, inefficient sprinkler heads throughout the property.

One of our customers is replacing their entire system over a 10year period. We are working with another customer to improve the 20 percent of their system that is the most wasteful. Consider the following four ideas as "good starts:"

- Replace the shorter 1- to 2-inch pop-up heads with 4-inch pop-up heads. The shorter heads require longer watering periods because their flow is easily restricted by turf.
- Test individual zones using the "cup" test to ensure that water is being evenly distributed throughout the zone. Replace or modify heads which are identified as contributing to inefficient water distribution.
- Go through the system zone by zone watching for obvious design or operational problems which result in water waste. Heads spaced too far apart will result in uneven water application.

Zones combining pop-up heads with rotor-type heads result in overwatering since most pop-ups put out three to four times the water per minute as do rotor heads. Suggest removing turf areas that are unnecessary and

(continued on page 36)

GOOD PLANT HEALTH EQUALS WATER SAVINGS

ONE MORE MEANS of reducing water usage is to ensure that turf and plants are in good health because healthy plants need less water.

 Healthy turf requires less water. A good turf maintenance program providing adequate fertilization and regular aeration should help reduce the need for water. When installing new turf, make sure to provide the best possible soil preparation since this can result in substantial water savings.

There is no question that water consumption can be reduced

substantially when turf is grown in good soil and is watered by a well-designed irrigation system.

Install trees and shrubs which are native to your climate.
 Once trees and shrubs are well-established, disconnect irrigation service to save water. Do everything possible to ensure that trees and shrubs are not placed in irrigation zones designed to water turf areas. Native trees and shrubs have vastly different moisture requirements than turf.

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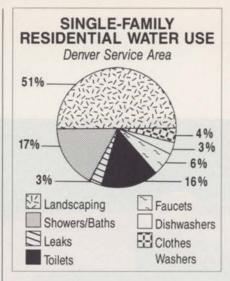
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USE READER SERVICE #37



Xeriscaping (continued from page 33)

result in irrigating walks, drives and structures. Once you have evaluated all zones, identify the most wasteful ones and present these findings to your customers along with estimated costs to modify the system.

• Recommend that customers employ the services of an irrigation system auditor who is certified by the Irrigation Association. These consultants can produce an irrigation system evalution which will provide your customers with a valuable "benchmark" to begin major modification to the existing system. In many cases, customers are more likely to listen to an "outside" irrigation expert.

Nationally recognized irrigation consultant, Larry Keesen, has found that the interest in system modifications to conserve water is growing rapidly.

Keesen, who has done irrigation system evaluations for customers throughout the country, said, "An irrigation system evaluation is the logical place for both customer and contractor to begin the work of water conservation."

CONCLUSION. Only 1 percent of the earth's water is available for domestic use. Each year, more and more people contend for this very limited resource. When shortages do occur, the landscape is the first arena to be hit with water restrictions.

As this resource becomes more valuable, water costs will surely rise. Landscape maintenance contractors would be wise to develop expertise in water conservation technology. The opportunity to play a key role in conserving water and saving our customer's money is exciting.

Working with our customers toward this end can be a rewarding venture.

The author is president of Colorado Landscape Enterprises, Arvada, Colo. He is also on the Water Conservation Task Force which advises the Denver Water Department on water conservation.

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IRRIGATION STRATEGIZING

PAYS OFF IN OPTIMAL PERFORMANCE

Planning for an irrigation system is of equal importance to designing a system.

By Jack R. Donis

PRESSURE LOSS CALCULATIONS

ROJECT		
SHEET NO.)	
POC NO.		
RVC NO.	GPM	
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	BACKFLOW PREVENTION OWN	
	REMOTE CONTROL VALVE	
	ACCESSORIES	
	ELEVATION	
	ELEVATION FITTINGS AND MISC. B. REQUIRED SPRINKLER OPERATING PR C. REQUIRED SYSTEM OPERATING PRESS	ESSURE
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BEFORE LAUNCHING into this article, allow me to make one qualifying statement: This story discusses turf and shrub irrigation systems for the ornamental landscape, where sprinklers of no more than 80 feet diameter (40 feet radius) are selected.

Additionally:

- Planning for an irrigation system is of equal importance to designing a system. Questions asked and answered, and the decisions made during the planning phase will dramatically influence the design process. The planning phase is the information gathering phase. At this stage, inadequate or sloppy planning can lead to disastrous results.
- With irrigation systems, as with practically everything, you get what you pay for. There are big differences in quality between most hardware store/do-it-yourself materials and those available to professional irrigation contractors through an irrigation supply house. As a result, the contractor is in a good position to recommend various types of systems and equipment to his clients.

A customer is better served by a contractor who offers a quality design incorporating top quality products and skilled installation. This approach may require selling the better products; but the homeowner will gain a quality system providing longer, trouble-free operation.

• The *real* cost of an irrigation system is not the initial cost. The *real* costs are those associated with maintenance and management.

PROPER SPRINKLER SELECTION.

Available water pressure is crucial when deciding what irrigation system to install. Rotor and spray pop-ups are the two sprinkler types available.

Rotor pop-ups generally provide optimal performance within a pressure range of 30 to 60 psi; while spray pop-ups perform best within a pressure range of 15 to 30 psi. It is essential to thoroughly investigate all known pressure loss factors before choosing the suitable sprinkler type. (See pressure loss calculation chart, left.)

NOTE

Sample irriga-

tion system checklist.

A frequently observed problem is a system of rotor pop-ups with insufficient pressure to provide either adequate drive, adequate throw or adequate stream break-up for uniform coverage.

Sprinklers should be selected from near the middle of the performance chart, avoiding selections from the extreme ends — low or high pressure — of the chart. This applies particularly to rotor pop-up sprinklers. For example, if a rotor pop-up sprinkler performance chart shows performance ranging from 20 to 70 psi, this sprinkler's optimal operating pressure is between 40 and 50 psi.

Keep in mind that most rotor pop-up sprinklers require a break-up or fuzzing of the water stream to achieve uniform application. This will reduce the sprinkler's distance of throw which is not reflected in the sprinkler performance chart.

There is an unfortunate tendency for contractors to select sprinklers with the greatest radius, possibly forcing the system to fit in an area. This is done with the understandable goal of reducing the amount of trenching, using less pipe and fewer fittings, reducing installation time, using fewer control valves and so on.

Too often, this approach is a shortcut to disaster. Even when there is adequate water pressure, the system is unwieldy. Water ends up spewing in areas where it is not wanted or needed, and results in water waste.

In addition, uniformity of application is severely impaired. The slight, if any, additional cost for the spray system is clearly justified if it leads to a more efficient, easier to manage system.

There are, of course, many applications for rotor pop-ups. They are preferred where there is adequate water pressure, an area of suitable size and when a lower precipitation rate is required — such as in tight soil and/or slope conditions. Rotor pop-ups apply water at a minimum rate of half that of spray pop-ups.

A rule of thumb about pop-ups: If the number of part-circle rotor pop-ups greatly exceeds the number of full-circle rotor pop-ups, consider using spray heads. The rationale is that an increasing number of part-circle rotor pop-ups indicates a chopped-up, fragmented turf area that can probably be more efficiently watered with spray heads.

It is advisable in most circumstances to use sprinklers with a minimum 3-inch pop-up for turf watering applications.

To prevent water waste through low head drainage, use sprinklers with a built-in check valve.

Various under-nozzle pressure compensating devices are increasing in availability. These devices are welcome and have their place, but they should not be used in lieu of sound hydraulic design. The same applies to the use of pressure compensating emitters.

PROBLEM AREAS. Spacing patterns in irrigation systems are often discussed, but which is best? The most *economical* approach is equilateral triangular spacing. However, comparable *uniformity* can be obtained with square spacing.

Unfortunately, on smaller projects, consistent spacing patterns are rarely found. For this reason, never exceed a manufacturer's suggested maximum allowable spacings since it's almost impossible to duplicate in the field the antiseptic conditions under which sprinkler performance figures are determined.

In addition, never throw water outside the irrigated area to achieve some "magical" spacing pattern. On many jobs there is no such thing as a best or better spacing pattern. The best spacing pattern is the one that fits within conservative design parameters.

Planted areas should *always* be watered separately from turf

areas. This simply recognizes that these areas have vastly different water requirements.

Several landscape design configurations that provide considerable challenge to the irrigation system designer include:

- Narrow turf and planted areas
 areas of less than eight feet
 wide. In turf, these are best handled by elimination. Indeed, there
 are desert communities where
 turf areas of less than 10 feet wide
 are not permitted since it's difficult to confine water spray to
 such narrow areas. If the water
 pressure is excessive and windy
 conditions prevail, considerable
 water waste results.
- For sloped areas, the water requirement at the top is generally greater than at the toe or bottom of the slope. The grouping, or zoning, of the sprinkler heads should reflect this.

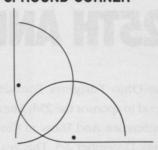
In addition, the wasted water runoff from sloped turf areas should be controlled as much as possible. This is best achieved by selecting sprinklers with lower application rates. If rotor pop-ups can be used, this is the preferred solution because their application rate is so much less than spray heads.

• Generally, inside and outside curves and round corners are very difficult to irrigate without some overthrow and water waste. Depending on the actual radius of the curve, these areas are more efficiently watered with spray heads. (Figures A and B)

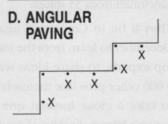
Rotor pop-ups tend to be more water wasteful in tight radius situations. This is particularly true with inside curves. To reduce the amount of water waste, the sprinklers should be spaced further than 50 percent of diameter, but not more than 65 percent of diameter in a no-wind condition.

The most efficient method when irrigating an outside curve is with adjustable arc sprinklers. Fixed arc sprinklers will virtually guarantee dry spots and inefficient coverage. (Figure B)

C. ROUND CORNER



Round corners are very difficult to irrigate efficiently. If water is not thrown outside the irrigated area, it virtually guarantees dry spots. If a street or roadway is not immediately adjacent to the irrigated area, then using two half-circle sprinklers, as shown, is preferable. (Figure C)



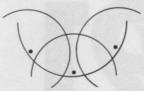
Regardless of scale, it's essential to remember that the quarter-circle sprinklers in the corner will usually require an adjoining, overlapping sprinkler (Figure D, X = sprinkler) to provide uniform coverage. Single sprinkler coverage sprinklers are no more than 50 percent efficient.

The author is a certified irrigation designer based in Tucson.

A. INSIDE CURVES



50% spacing, fixed arc: too much water waste



60% spacing, fixed arc: minimized water waste

B. OUTSIDE CURVE



50% spacing: maximum

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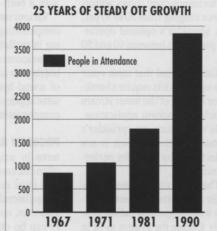
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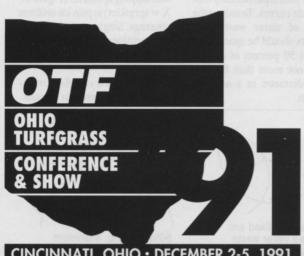
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ARE MULTIPURPOSE LANDSCAPES REPLACING DESIGNS OF OLD?

DEFICIT irrigation. Drought-resistant. Low-water use. Solidstate computerization. Drip irrigation. ET (evapotranspiration).

Few, if any, of these words were in the landscape architect's lexicon just a few short years ago, yet, today, they are common to the professional, if sometimes still confusing and complex to many others.

While these words can apply to many areas, they are an important new facet of turfgrass design and management. Landscape archi-

tects no longer think in the simple terms of planting, mowing, fertilizing and watering, as they once did...and some still do. In general, the days of designing landscapes purely for aesthetics are over.

As the world becomes more environmentally conscious, greater insistence is being heard for multipurpose, multi-use landscapes that conserve water as much as possible and rely on minimal resource inputs.

Technological advancements have proven that turfgrass can (and often must) have a significant role in an environmentally sound landscape design.

Turfgrasses, when properly planned and efficiently managed in a multi-use landscape, provide a real asset to the environment.

While a hardscape (concrete, specialty rock or paving) and semihardscapes (crushed stone, scattered boulders, etc.) can be aesthetically pleasing, they can also be environmentally damaging. Such designs further seal sections of the earth and can become heat-sinks, absorbing large



amounts of energy and then radiating that heat energy into surrounding areas.

When it rains, runoff waters from these hard-surfaced areas may create storm sewer overflows by their very design. While this form of landscaping requires minimal, if any, resource inputs such as water or fuel, its inert state also fails to provide positive environmental benefits.

To capitalize on the many benefits of turfgrass, today's landscape architects can develop unique plans for practically any situation. Factors being considered by environmentally sensitive landscape architects include:

- Basic topography of the design area to avoid steep slopes and positive incorporation of basins that can become "water harvest" storage facilities.
- Identification of water harvesting source points such as runoff from roofs, yards, driveways and parking lots.
- Use of turfgrass species and cultivars that offer the best combination of drought tolerance and low-water use rates.

- Grouped placement of plants with similar water-use rates to better control irrigation requirements and allow the use of drip-type irrigation.
- Incorporation of recommended irrigation systems that include use of computerized controllers, selection of proper spray heads, valves and sensors to detect rainfall, excess wind and soil moisture.
- 6. Use of the "oasis" design concept, locating areas of higher water using plants and turfgrasses in the center of a site or yard, putting the desirable turfgrass in the highest use area.

A study conducted for the Arizona Department of Water Resources by The Acacia Group, a Tucson & Phoenix based landscape architecture firm, to evaluate the water use practices and water conservation potential of turf facilities, unexpectedly found that management practices, rather than the application of technologically sophisticated equipment, showed the greatest practical potential for water conservation.

Documenting once again that

Turf can be used in an environmentally sound landscape.

plants don't waste water, people do, this study found that improved education, daily visual inspection of the turf, night irrigation, control of soil compaction and reduction of fertilizers all presented water conservation potential.

Specific water conserving practices documented in the study for turf facilities of any size include:

- Use of computerized automatic irrigation controls.
- Use of drip irrigation on selected non-turf areas.
- 3. Use of ET rate to schedule irrigation. The ET rate of turf is the rate at which water is evaporated from the soil surface and transpired from the turf. Atmospheric conditions dictate the ET rate. Once the ET rate is known, irrigation can be scheduled to replace only the moisture lost.
- 4. Deficit irrigation which reduces the amount of applied water to a level below the ET rate, requiring the turf to adjust to less water. This is particularly successful in low traffic areas.
- Night irrigation to take full advantage of less wind distortion and less evaporation.

Envisioning a world without turfgrass is practically impossible. Now, improved management and technology make it practical to have the turfgrass areas people desire. — Walt Rogers

The author is a member of the American Society of Landscape Architects and a principal in the Acacia Group.

COLD WAR:

PROFIT-MAKING STRATEGIES FOR SNOW REMOVAL

There's no avoiding snow removal in some parts of the country. So if you're going to plow, why not make some money at it?

By Julie A. Evans

HIGH MAINTENANCE costs, employee turnover, onerous insurance premiums and fly-by-night competition are reasons enough to scare anyone away from the lucrative, but somewhat risky business of snow removal. Yet despite these drawbacks, many professional landscape firms are once again gearing up their snow removal equipment for another season of profitability.

Their formula for success is simple: The three key elements most often mentioned are professionalism, reliability and seasonal contracts.

"The customers I carry don't worry about money as much as they do quality," said Jim Forsee of Forsee's Lawn Service, Hazle Park, Mich. "If you give top quality service, you can get top pay."

"Good, reliable contractors never have difficulty finding work," said Ron Kujawa, president of Kujawa Enterprises Inc., Cudahy, Wis. "The problem is that there's a proliferation of lousy contractors, those who commit to too much work, never anticipating a breakdown, never anticipating a blizzard."

The solution, Kujawa said, is

to establish solid relations with customers through a good track record of service. Clients who are pleased with summer services will remember your name when the first snow falls.

"There are always people shopping for a low dollar. But almost every one of our snow accounts is a long-term contract. Smart business people are not going to change contractors based on lower anticipated price alone."

Perhaps no one knows the ins and outs of snow removal better than Tom Garber, owner of Colorado Landscape Enterprises, Arvada, Colo. According to Garber, the Denver area is the second largest snowfall area in the United States, next to Buffalo, N.Y. By his estimates, more than 10,000 people rely, at least in part, on his snow removal services during a winter storm.

To get the job done, he employs a large work crew, ranging from 50 to 100 workers. Such a large crew can create headaches, Garber said.

"The major problem is trying to get those people out in the middle of the night when they're parttime workers. We have no tie to them. About 10 percent of the workers we have prearranged show up," he said.

To encourage the most workers possible, Garber pays above the normal labor rate, about \$8 to \$10 per hour.

Paperwork creates another labor nightmare. "In order to be legal, we have to fill out all the I-9 Immigration and Naturalization papers and W-2 forms," he said.

"The other problem is trying to supervise these people in the middle of the night that you've never seen before. Our supervisors don't relish the entire process."

Despite the labor pains, Garber said, snow removal is a necessary service. "In our business, we have to do it. Most landscape contracts are tied to snow removal."

He estimated that 20 percent of the company's total revenues come from snow removal.

Snow removal is also an important element of Kujawa's business. Not only does it contribute 10 percent to 15 percent of total revenues, but it allows him to keep workers employed throughout the year.

"High risk is high reward," he said. "You've got to commit people. If you lay people off and they have no hope of coming back, they look for other jobs. You have to make some commitment to them and hope they'll be around when a snowfall comes."

To ensure that his employees don't move on to other jobs when cool weather hits, he puts them on a weekly schedule and encourages them to enroll in continuing education classes. "The biggest problem when someone is laid off is boredom," Kujawa explained.

"As an incentive to take the course, we'll pay for the course and we'll pay them a per diem allowance for transportation and lunch."

Not everyone who weighs the risks and rewards of snow removal finds the balance tipped in their favor. Mention snow removal to some landscape contractors and they cringe.

"I think the people who say 'I make great money in snow' are the people who marginally make money in the landscaping field," said Jack Zendt, president of Zendt Brothers, Mt. Clemens, Mich. "If you take good equipment to plow snow, you're taking profitable summer dollars and trading them for meager winter dollars."

Zendt said a major problem are the "flyby-night" businesses who underbid the legitimate contractor. "This is done on such a wide basis that the legitimate contractor has to lower his price."

Zendt acknowledged that underbidding by less than legitimate contractors is not limited to snow removal. "This year we've seen that same influx into lawn cutting. As the economy went down, these people have been coming out of the walls."

Zendt, whose firm no longer offers snow removal, advised investing in certificates of deposit or some other form of financial security to keep profits rolling year-round.

Sandy Steadman of Jerry Steadman Landscape Contractors, Westlake, Ohio, said that her company plans to discontinue its snow removal operations this year.

"It's not worth it. It's a losing proposition," she said.

Steadman listed high insurance costs, wages, equipment repair and being on call 24 hours a day as reasons why the company has decided to bow out of the winter market.

PRICING STRATEGIES. If so many obstacles to success exist, then how do some contractors manage to see profits year after year?

Most do so by charging a seasonal or flat fee for the entire



winter season. Others also accept some "per push" accounts, but typically give first priority to their seasonal accounts.

The flat fee approach can work against the landscape contractor in exceptionally wet winters; but by the same token, it can work in the contractor's favor in dry winters. The advantages of flat fee contracts are guaranteed steady income, productive employees and limited liability.

"If you get caught up in the game of charging per push or per application, you're going to lose," said Chris Pompeo, vice president of operations for Landscape America, Warren, Mich. "If you quote a building owner 'X' amount per snow, you might as well close your doors and go to Florida for the winter. If you have to sit by the phone, you're not going to make money.

"The industry must educate itself into offering what we used to call 'snow insurance.' You pay us 'X' amount of money per month, and we'll come out and clean (the snow)," Pompeo said.

"The advantage to the property owner is that he knows how much he's paying every day of the month. The advantage to us is a steady income, and we can keep people working through the winter.

"When you ask people why they're getting out of snow removal, they say 'no money.' Then ask how they price their services: per push (is their response). If you're not doing anything, you're not getting anything in return."

According to Pompeo, many contractors employ an "inch-and-a-half removal" strategy; that is, they visit their accounts when the snow reaches a certain accumulation. But that doesn't make economic sense, Pompeo said.

His company does snow removal regardless of the accumulation. "If it's not enough to plow, we'll use shovels and brooms to get snow off the pavement," he said.

"By going out everytime it snows, we can go out 15 times a season. That means more revenue coming in. And it reduces the liability for both us and the building owner," Pompeo said. "If the building owner spends more on snow removal, he might avoid some lawsuits. If he does get sued, he'll have to spend money anyway. In the long run, it's cost-effective for the building

owner to spend the money and ensure he's done everything possible to make his walkway and driveway safe."

Garber said most of his accounts are done on a flat contract basis. "We explain that we're like firemen. You don't pay firemen just when there's a fire. They have to be prepared in case of fire.

"We have found that our customers like the idea (flat rate) because they are budget conscious and like to know ahead of time how much it's going to cost them."

To keep customers satisfied with the quality of service, Garber works by a system he calls "pioneering."

"We don't wait around to see what the weather is going to do. We start pioneering. We try to keep the main arterials open. We keep our plows out around the clock."

Garber also protects against blizzards and their obvious drain on cash flow by writing a refundable extra payment into the contract.

"For our flat contracts, we budget for a blizzard and have our customers give us six equal payments. If we don't have a blizzard, they don't make their April (sixth) Keeping your equipment in top condition gets the job done and keeps the liability down. Photo: Excel Hustler 400.

payment. We budget about 20 to 30 percent of the total money we charge customers for that blizzard."

Forsee said that 99 percent of his customers are on a contractual basis. But unlike Kujawa and Garber, the majority of his accounts, 60 percent, are charged on a per push basis; 40 percent are charged by the season.

"Some years I come out ahead. Some years the customer comes out ahead. It pretty well balances out." he said.

Forsee said that he charges \$80 per hour per truck. He derived that figure "through experience and what my competition charges."

Another factor that must be figured into the pricing equation is insurance, which is a costly but necessary component of snow removal.

"There are a lot of companies that will not write you insurance for snow plowing," Forsee said, "and for the ones that do it's very expensive. You have to figure that into your price for doing a job.

"If someone slips at the Holiday Inn, they sue the person who plowed the snow. You're a real dummy to be out there without insurance."

Pompeo agreed that insurance is a necessity, but added that the contractor can take extra steps to minimize risks. "The biggest factor is liability. Nowadays, people will sue for anything."

The best way to minimize liability is to make sure that snow removal is done thoroughly, even if that requires returning to a job site two or more times a day.

"If someone were to slip and fall, and we went before a judge and said we were out there three times that day removing snow and putting down salt, the judge will look upon us more favorably," Pompeo said. "If you can point to extra efforts to remove snow, the judge is going to say, 'what

more could you have done?' He might rule that the building owner and contractor did everything possible."

PLANT PROTECTION. A constant challenge during snow removal is protecting turf and plant materials, especially near driveways and walkways, which can be difficult to detect under a heavy blanket of snow. The best strategy is to map out the property before the first winter storm and note areas of extra caution.

"Driveways are tricky," said Tom Zajicek, owner of Snow and Mow, O'Fallon, Ill. "If I get a call, I ask that customer to flag the driveways and walkways."

Forsee said that he and his drivers visit accounts and stake driveways with an orange-tipped rod. He leaves them there throughout the winter and collects them in the spring.

Pompeo, who said he does maintenance on many of his installation accounts, keeps snow removal in mind during design.

"We try to keep most of the plantings at least two feet away from walkway edges. We try not to put plantings in areas where we know the contractor will pile snow. We also try to use plants that are a little more salt tolerant, especially if we're planting near city roads," he said.

Pat Bucci, horticulturist and landscape specialist for Carroll College, Waukesha, Ill., also considers snow removal when designing a landscape. Bucci recommends keeping plants away from walkways and using sand instead of salt for ice control. However, she cautioned that sand may not provide adequate ice control during extremely icy conditions.

"Last year was a bad year to experiment because we got hit hard early on. But toward the end of the year we were using sand," Bucci said.

A variety of ice control products are on the market. If selecting one, read the label carefully to make sure its ingredients are not harmful to plant materials, Bucci advised.

To ensure that ice control products are dispersed only when and where needed, Bucci uses a spreader that drops the material exactly where it's intended.

Bruce Vosseler, general manager for AccuSpread, Milwaukee, Wis., said that the drop spread



method protects both plant life and the budget, because less material is used.

He added that it reduces liability by ensuring more uniform coverage. "We have found that the majority of grounds maintenance departments are spreading ice control material by hand...(that) usually results in piles of product here and there with slippery spots in between."

To further ensure plant health, Bucci uses a tractor-powered sweeper to remove snow wherever and whenever possible.

"You can get around quicker with a blade than a broom, but our (blade) won't handle the small sidewalks," she said. "We can handle most of our storms with a broom. But if it's a heavy, wet 12-inch snow storm, a broom is not the answer."

Jim Koch, marketing manager

removal, Koch said: You can push it, you can throw it or you can dump it. For the landscape contractor, that means choosing from a wide selection of powered sweepers, snow throwers and blades.

Most landscape contractors agree that durability, operator comfort and quality support service are among the most important features of any equipment purchase. But these characteristics are especially pertinent to snow removal, due to the demanding nature of the work.

"I get the most durable equipment — the most heavy duty I can find," Pompeo said. "If you spend the extra money and buy the best equipment you can afford, forgoing the used, beat-up stuff, you don't have a lot of breakdowns."

Peter Scholz, vice president of maintenance operations for Rein-

A drop spreader disperses deicer to intended areas only. Photo: AccuSpread.

ments. "A lot of people don't buy equipment specifically for snow removal," he said. "More people are using the attachment approach to prime movers. They're more European in their approach—the Europeans have been doing it that way for years."

Don Consolver of Excel Industries, Hesston, Kan., explained that winter attachments, such as cab heaters, snow throwers and blades, are popular because they allow owners to maximize their investments through year-round productivity.

Paul Sabourin, assistant manager for customer service with the power equipment division of American Honda Company, Duluth, Ga., listed a number of features to look for in purchasing a snow thrower, many having to do with operator convenience and comfort.

"Convenient engaging of starting controls and engine controls is a must — easy to get to and comfortable.

Also, look for an efficient discharge chute control that allows for quick and positive placement of snow.

"The unit should be equipped with safety controls to keep the operator out the work zone of the product. Those controls should allow for quick shutdown of the engine in case of an occurence."

Sabourin said that two-stage operation is key. He also said to look for machines that are large enough to make a pass on a walkway, but small enough to fit through gates.

Pat Jelens, marketing services coordinator, for Ariens, Brillion, Wis., named two-stage operation, operator convenience and durability as especially important features.

"Find a product that will start easily. Note the tires, look for a tread design so they (users) don't slip," he added.

Other beneficial snow thrower components include a large gas tank (less fillups in stormy weather), electronic ignition and a handle that is large enough to accommodate gloved hands.

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

Map out the property before the first winter storm, noting areas of caution.

for Sweepster, Dexter, Mich., explained that the sweeper is easier on plant materials because it cleans with a flexible bristle.

"As long as the snow is not packed down too hard, it will clean all the snow and it won't dig up brush," he said.

He added that because the sweeper cleans down to the pavement, less deicer is needed. However, as Bucci noted, a blade or snow plow is necessary for heavier or wetter accumulations.

HEAVY-DUTY OPTIONS. There are three things you can do in snow

hold & Vidosh, Pontiac, Mich., estimated that the company has about 80 pieces of equipment for snow removal, including tractors. Most of the equipment is used year-round. When purchasing new equipment, Scholz looks for name brands with durable snow removal options.

To Forsee, service is the most critical component to new equipment purchases. "It's important that I can get service in my immediate area — how long is it going to take?"

Koch noted that more landscape contractors are purchasing attach-

COMPUTERWIZARDRY

INVESTMENT IN computers becomes a good idea when billings reach about \$400,000 a year. Special software is designed for lawn care; landscape contracting, including installation and maintenance; golf courses; irrigation; and the usual "horizontal" functions such as payroll, accounts receivable and payable, etc.

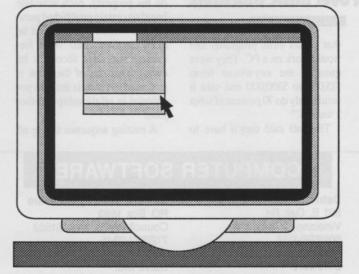
For a little more than a thousand dollars, the enterprising manager can get a PC and software to allow him a modicum of automated control over rudimentary office functions. At the other end of the spectrum, investments in the tens of thousands of dollars are necessary to secure centralized processing systems operating off of "big boxes."

Entrants into computerized systems would do well to consider the relative economies and ease of "distributed processing" or PC-based systems.

One growth area is landscape design. Tom Maxwell-Miller, president of Ecosystems Imagery, Encinitas, Calif., has pushed through some technology innovations at this landscape architecture, contracting and maintenance firm. A foray into generic office software five years ago bloomed into on-screen job design.

"Most of our work is construction and irrigation design. We use CAD (computer-aided design) on some of that. The main thing we use computers for is business management, office work, routing, estimating and bidding," he said. "A lot of what we have, we've written or customized ourselves. Most people I know that started with CAD were mostly doing commercial. It wasn't being used a whole lot for residential until recently; you have to have the budget."

He's invested \$45,000 in hardware and software, another



OPENS SERVICE DOORS

Whether it's landscape design or financial services you're looking for in a computer, know your firm's needs before selecting a system.

By Bob Gitlin

\$45,000 in training and followup. Ecosystems uses IBM-compatible hardware and a LANsoft CAD program (a local area network) to link four office sites and one remote location. He had to hire somebody to run the system as well as get consultants to help him make a go of it.

"Getting any kind of design system up on the computer takes you *longer* than longhand, but once it's in and you're running, changes and updates are done in a way that saves you time. A simple stand-alone 286 IBM can do

everything that you could possibly need it to do. If you want to get fancy, your people are going to 386s, then as soon as they do the 486 will be out!" he quipped. "Why spend that kind of money? There are cheap solutions as long as you're patient."

Marco Iannetta, vice president, Mirro Systems, Cuyahoga Falls, Ohio, said his software will run DOS (the IBM language), the Unix operating system and many others in the industry. This kind of compatibility becomes important as major businesses need to connect with others.

"Ours is one of the few that has been 'ported' to many platforms," he said. "The system will run on everything from a little PC with one user to large super minicomputers that can support hundreds of users. It isn't a 'specific' package.

"We got involved in the outdoor market through an adapter we developed for power equipment dealers and distributors. One offshoot is a services billing module several landscapers use to track business. It does contract maintenance routing and scheduling," Iannetta said.

A new equipment servicing module can be used both by the power equipment dealer that services equipment, or it can be used to track internal servicing on equipment. A landscaper, for example, who has different machines and wants to keep track of them as they relate to his maintenance schedules would benefit from this.

Although the Mirro Systems software is generic, it can be set up so as to "look" tailor-made for an important aspect of lawn care management.

"The system doesn't just say 'part not found', it says 'OK that's a John Deere part, here's what it's called, here's how much it costs, it's returnable, it's a hazardous material."

Bill Wright is president of Lawn-Wright, Gaithersburg, Md., which vends IBM-compatible software to the green industry. The company started in 1981 as a lawn maintenance company, and still has nine crews that do about 375 lawns. In the early 1980s, he had only 75 jobs, which he tracked with recipe cards, calendars and maps.

"My wife and I did the work on the living room floor. We figured out everything we did that day and what we were going to do the next, and arranged it so every lawn was in the best route order," he said. "We only had two crews. They went through the list of lawns in the best routes so there wouldn't be any driving back and her a whole day for 75 statements. This included all debits and credits, checks that came in and calculating service charges. The software-literate Wright started getting ideas.

"In 1983 I checked with people



For a small investment, you can have automated control over basic functions.

forth, crossing each other's paths."

Accounting was similarly primitive. His wife once a month put a continuous statement into a typewriter, having scratched out all the math. Typing this up took

that would write programs that would work on a PC. They were quoting me anywhere from \$15,000 to \$100,000 and said it would only do 70 percent of what I wanted."

They all said they'd have to

write it in dBASE II (a software language written by Ashton Tate, since bought out by Borland). Fox Software came out with a clone of dBASE, Foxbase, which Wright's people started using in 1987. Wright customized the software to do scheduling, routing and billing.

Every customer's account, for instance, is designed to allow as many as 99 jobs.

The first customer may have 17 different operations performed on his property, each schedule based on certain established parameters: Which day should it be done the first time? What frequency and days should it be done? What day of the week is preferred? Where is that job positioned in relationship to other jobs?

A routing sequence taking all

this into account develops in the most efficient way possible. The system can be made to indicate how many times mowing is needed, for example, and whether that task is part of the contract or not

A lawn maintenance operator can find out everything about a specific job by keying in pertinent details. It can later help a contractor conduct better business by knowing his options.

"Route sheets are printed for crews to see what details need to be accomplished when doing that job," Wright said. "The customer doesn't see these notations, just the crew. But the job description does end up on the customer's statement."

Crews take off with route sheets (usually one or two pages for Lawn-Wright's own people). The

COMPUTER SOFTWARE

Following is a sampling of companies offering software and hardware designed specifically for the green industry.

FINANCIAL/ACCOUNTING

Accounting and Computer Software 7993 S.W. Churchill Way

7993 S.W. Churchill Way Tigard, Ore. 97224 503/691-1856

Argos Software 1485 W. Shaw Ave. Fresno, Calif. 93711 209/227-1000

Argos Software (branch) P.O. Box 964 Fairfield, Iowa 52556 515/472-2384

Bergmann Computer Group 31035 Schoolcraft Rd. Livonia, Mich. 48150 313/422-6020

Botanical Management Systems

4420 First Street SE Calgary, AB, Canada T2G 2L3 403/255-3702

CBS Software 128 Winslow Terrace Glen Rock, N.J. 07452 201/670-1073

CompuScapes 2653 Gravitt Rd. Duluth, Ga. 30136 404/447-5858 **Datum Tech Industries** 891 E. Oak Rd. Vineland, N.J. 08360 609/696-1117

Dilloware 213 Congress Ave., Suite 200 Austin, Texas 78701

Doane Software 6443 Beaverton Hwy. Suite 305 Portland, Ore. 97221 800/367-7082

512/629-7400

Lawn-Wright 18761 N. Frederick Ave. Suite A Gaithersburg, Md. 20897 301/330-0066

McCollum Systems 6143 Jericho Turnpike Commack, N.Y. 11725 516/499-8890

Microvane 8135 Cox's Drive Kalamazoo, Mich. 49002 800/222-0677

Mid-West Growmaster P.O. Box 1006 St. Charles, III. 60174 708/888-3558

Peststar Software 519 South 100 East Jerome, Idaho 83338 800/869-7741 Service Industry Software P.O. Box 1593 Council Bluffs, Iowa 51502 712/322-2345

Solve Inc. P.O. Box 4876 Anapolis, Md. 21403 301/267-8400

SPS Consulting 918 Linden Lane Union, N.J. 07083 908/686-8218

Timeslips Corp. 239 Western Ave. Essex, Mass. 01929 800/338-5314

Triad Systems 3686 Winters Hill Drive Atlanta, Ga. 30360 404/399-1902

LAWN MAINTENANCE

Clean Cut 8711 Burnet Road Suite 72 Austin, Texas 78758 512/458-8873

Comp-U-Green 3718 Antioch Court Cincinnati, Ohio 45241 513/733-0969

Custom Landscape Software 488 N. Main Street Wilkes-Barre, Pa. 18705 717/824-1472 Labb Systems 6018 E. Osborn Rd. Scottsdale, Ariz. 85251 602/481-9710

LANCADD 7519 E. Hwy 86, P.O. Box 604 Franktown, Colo. 80116 303/688-8160

Mirro Systems 414 Portage Trail Cuyahoga Falls, Ohio 44221 216/928-6246

MFE Associates Inc. P.O. Box 851 Amhurst, Mass. 01004 413/256-6155

OmniComp 220 Regent Court, Suite E State College, Pa. 16801 814/238-4181

PC Supply 24175 Telegraph Rd. Southfield, Mich. 48034 313/353-0351

Practical Solutions 7100 N. High St. Worthington, Ohio 43085 614/436-9066

Precision Systems 14100 Park-Long Ct. Chantilly, Va. 22021 703/968-6839 typical crew does 10 or 15 jobs a day. The first page has a place for employees to clock in and out for payroll purposes. Each section discusses the job, giving all pertinent information. Map coordinates help foremen find new jobs. There's a place for foremen to write notes about what's happening on the job. Route sheets are turned in at the end of the day, and their information is input.

What you spend depends on what kind of user you are, said John Massaro, president of Customized Business Software, Glen Rock, N.J. A brand new user going directly from manual tracking probably has to spring for \$1,300 or \$1,400, he said. That includes hardware, printer, invoices, diskettes, 386SX (IBM compatible) color monitor and

40-meg hard disk.

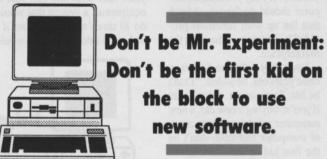
And what do you get?

"Organization," he said. "You eliminate hand errors. Reporting is instantaneous. Professionalism is a big point; a lot of people find handwritten bills don't get adequate response. Good software allows you to do finance charging on a computerized basis. It lets you spend time on other parts of the business — like estimates. You lose money not getting them out, spending too much time doing monthly billing."

Gary Thornton, president of Thornton Computer, Maineville, Ohio, sells a "turnkey" system that does, he said, most of the functions a maintenance contracting or landscape contracting type of business would perform within the office.

"You could start with a prospect

file and mailing capabilities integrated with word processing so you've got promotion and marketing tools. That leads to bidding and a description of all services priced into the job. At that point a contract is generated and, assuming it's accepted, booked



and estimating. You can estimate the job based on square footages and figure all the materials, labor and equipment needed. Then you generate a proposal customized to a site, producing a calendar."

The calendar notes when everything gets done, how it gets done onto the system, which can now do automatic monthly billing as well as produce work schedules.

Maris Franke, president, Practical Solutions, Worthington, Ohio, sells software geared to chemical lawn care. It does marketing, scheduling, production management/routing and billing. Management reporting provides timely data on all functions. The IBM-compatible system works, like many of its marketplace rivals, on either multi- or single-user desktop computers.

Advantages over the "old" way are dramatic, Franke said.

"Let's take the task of recording a sales inquiry. Normally you would have written the inquiry on a form, manually, then provided the homeowner an estimate. If your guy took the form with him, there was no other record that inquiry came into the company." Nor was there a way to track the timeliness of his follow-through in meeting customer needs.

"In our system we capture it in the computer, an estimate is generated, it's tracked on management reports to make sure it gets estimated in a timely manner, then it's tracked on a callback report which is printed in chronological order by sales territory to make sure the homeowner is called back and someone is attempting to close the sale before your competitor does."

At the end of the year, management reports indicate how many total inquiries came in, how many closed, how many didn't, how many are still pending (neither closed nor marked as no-sale).

The system captures the source of advertising that brought in the business — whether phone book, doorknob hangers, whatever.

Franke warns against buying hardware first. It's the other way around. He recommends making

Qqest Software Systems

P.O. Box 57983 Murray, Utah 84157 801/265-2024

Real Green Computers 3130 Crumb Rd. Walled Lake, Mich. 48088 800/422-7478

Sun Software Systems P.O. Box 290435 Tampa, Fla. 33687-0435 813/681-6265

Thornton Computer Mgmt. Systems

424 East U.S. 22 Maineville, Ohio 45039 800/543-7249 800/582-6129 (In Ohio)

Vander Kooi & Associates P.O. Box 621759 Littleton, Colo. 80162 303/697-6467

PLANT SELECTION

Acacia Software P.O. Box 90525 Santa Barbara, Calif. 93190

805/964-7497

Landscape Electronics P.O. Box 81 Manhattan, III. 60442 815/478-3772

Master Tag 9350 Walsh Road Montague, Mich 49437 619/894-5651 Plantarc Inc.

215 Katonah Ave. Katonah, N.Y. 10536 914/232-3414

Plant Line P.O. Box 814

P.O. Box 8143 3980 120th Ave. Holland, Mich. 49422 616/399-0832

Terisan

1332 Jerome Room A Astoria, Ore. 97103 503/325-3367

DESIGN/IMAGING

Abracadata

P.O. Box 2440 Eugene, Ore. 97402 503/342-3030

Design Imaging Group (DIG) 5530 Owensmouth #323 Woodland Hills, Calif. 91367 818/884-8674

Greenscape Systems P.O. Box 857 Blacksburg, Va. 24063-0857

Microvision Inc. 11130 O Street Omaha, Neb. 68137 402/592-4350

Mindsun RD #2 Box 710 Andover, N.Y. 07821 201/398-9557 National Computer Solutions

Route 2, Box 139 Sweetwater, Fla. 37874 615/337-3580

New Image

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IRRIGATION

Buckner

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Dept. of Agriculture and Engineering

Irrigation and Software Engineering Div. Utah State University Logan, Utah 84322-4105

Rain Bird

IDA — Irrigation Design Assist 155 N. Grand Ave. Glendora, Calif. 91740 818/963-9311

The Toro Co. 5825 Jasmine St. Riverside, Calif. 92504-1183 714/688-9221

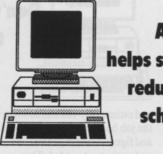
Editor's Note: If your company does not appear in the above list and you would like to be considered for future articles, please contact us. a list — before even looking at any software offerings or reading any sales come-ons — of all the things you do every day you think a computer should do for you. Match that list up with functions provided by various products on the marketplace.

Don't buy software less than three years old, he added. "Don't be Mr. Experiment. I don't care if you're buying a new car, a new computer printer or a new piece of computer software, don't be the first kid on the block to use it."

Landon Reeve, president of Chapel Valley Landscape, Woodbine, Md., is a lawn maintenance contractor who's been computerized for quite some time, since 1984. "We bought it primarily for integrating our estimating system." He uses Thornton's SLICE integrated system.

"We have two different offices in two different locations, all tied in to the same system. We have at least 30 terminals. We try to push use of the system at everybody, to get as many people using it as we can." Prices have dropped, he said. "In '79 or '80 we paid \$80,000 for a system. We replaced it four years later with half that cost in equipment, a system that would do 10 times as much. Now, if I had to go into a system, I would

maybe \$100,000 installations and \$200,000 or so maintenance. When I work up estimates, I'm back and forth through books, estimating prices — on the phone to see if they actually have it, or in what size or is the price still



A good system
helps streamline otherwise
redundant office and
scheduling chores.

probably make more use of PCs. I don't see how even a one-person office gets by efficiently without one."

On the other end of the spectrum is W. Scott Jenkins, vice president at Ellen Kay Inc., Washington D.C. In his concern with the lawn and landscape aspect of the business, he only sees a need for computerizing the billing procedure.

"We do about \$300,000. I do

good? It's a paper and pencil business."

Others would argue that those very statistical caprices and shifts are reasons for owning a computer; you can do them easier. It all boils down to how much you need.

Kevin Kleifges, sales manager for Precision Systems, Chantilly, Va., deals with modest operations all the time which, it becomes evident, do not desire computerization. Those that do need it have a problem streamlining otherwise redundant office and scheduling chores.

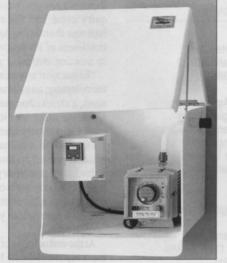
"A good system," he said, "enables you to find out how many different types of services you provide customers, how often they're serviced, what the cost of the service is, who the technician is that services the accounts, how often he goes, what type of chemicals does he use when he goes out there."

It also sniffs out delinquent accounts and gives daily balances, enabling one to hound deadbeats faster and better.

"The beauty of this is it's integrated to a scheduler as well as a chemical tracking system. So any information that you key into one program automatically updates the other programs. You're not constantly going into different programs just to update different things that you do. It saves time, number one, and number two, it just gives things a nice flow."

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

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ANTICIPATION SURROUNDS SECOND RUN OF THE GIE SHOW

Despite a recessionary business climate, attendance at this year's Tampa trade show is likely to exceed 2,000.

By Julie A. Evans

BILLED AS "THE LARGEST lawn and landscape show ever," the Green Industry Expo heads south to the Tampa Convention Center, Nov. 19-21. Now in its second year, the expo is a cooperative effort between three industry groups: the Associated Landscape Contractors of America, the Professional Lawn Care Association of America and the Professional Grounds Management Society.

Last year's show drew more than 2,000 lawn and landscape maintenance contractors and 256 exhibitors to Nashville, Tenn. Attendance this year is likely to meet or even exceed those figures, despite a recessionary business climate that has many people cutting back on expenses, said Ann McClure, PLCAA's executive vice president.

"The recession has made (show planning) a lot more challenging," McClure said. "People like the feeling that in spite of the recession, they are going to participate in something that will be at least as exciting as it was last year."

Climate and convenience were both factors in selecting the Tampa site. "Our members have really liked going to Florida," McClure said. "They work really hard during the other months of the year. People who work outdoors enjoy going where it's warm, getting into a learning mode, learning at conferences and looking at new products."

Eldon Dyk of Allen Keesen Landscape, Denver, Colo., agreed that the Tampa site is a popular draw. "The show is in a good location, and people might decide to take a family vacation. That would help attendance as well," said Dyk, who is president of ALCA. "Tampa is close to all attractions; Orlando's not far away."

The Tampa Convention Center, less than a year old, is within walking distance of several hotels. The Center is eight miles, or 15 minutes, from the airport.

McClure also hopes to see a large number of "drive-in" attendees from Florida and neighboring states.

One of last year's drive-in attendees, Daryle Johnson, president of All American Turf Beauty, Van Meter, Iowa, plans to attend the show again this year. Last year, Johnson and 12 employees and spouses, drove from Iowa to Nashville to attend the first-ever GIE show.

"It was a great show — educational, beneficial to myself and to my employees. It really helped the business," Johnson said.

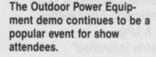
Show officials anticipate using about 57,800 net square feet of exhibit space, an increase over last year's 50,000 net square feet. The actual number of exhibitors is expected to meet and perhaps exceed last year's total.

According to Allan Shulder, executive director for PGMS, the goal is "to grow the show each year."

"We're hoping for a show of 75,000 net square feet, not necessarily this year. With the economy, it's hard to say," he said. "Many people are cutting back. We're doing additional promoting above what we did last year."

Despite some aggressive marketing efforts, Shulder said, he was unable to attract many nursery or irrigation exhibitors to this year's show. He explained that the Irrigation Association's annual show also takes place in November, making it difficult to attract many irrigation manufacturers to both shows. As for the nursery industry, Shulder said to look for more exhibitors at next year's GIE show.

Trade show hours are 10:30 a.m. to 3:30 p.m. Tuesday and Wednesday. A Green Industry Ex-







po reception opens the show on Monday at 6:30 p.m. All attendees and exhibitors are invited.

EDUCATIONAL SEMINARS. Two separate educational conferences will be held concurrently with the show: PLCAA's 12th Annual Conference, and the Landscape and Grounds Management Conference, sponsored by ALCA and PGMS.

The theme of this year's PLCAA conference, "Meet the Challenge," aptly describes the association's goals: to help lawn maintenance companies meet the challenge of self-improvement, progress to meet changing times, become better business leaders, learn more about turf research and new products and find new ways to work together for the industry's future.

PLCAA's conference begins Monday, Nov. 18, with early bird sessions; followed by the annual meeting and keynote speaker Josephine Cooper, a senior principal with the Capitoline International Group, LTD, a Washington, D.C.-based communications advocacy firm.

Cooper will address the role of the landscape contractor in influencing future legislation.

Numerous educational sessions are scheduled, including Business Basics, Marketing in the '90s, Technical Problem Solving, Business and Insurance, EnviScheduling your time is always tough, but knowing what's causing your stress may alleviate some of it.

ronmental Issues, Government Relations and Fertilizer and Technology.

In addition, a live auction will be held at the Hyatt Regency on Tuesday, Nov. 19, at 6 p.m. to benefit the industry's public relations and issues management efforts. Harry Collins of Total Lawn Care Service, Tupelo, Miss., is auctioneer. More than \$20,000 was raised at last year's auction. This year's goal is \$50,000.

Conference registration includes Expo admission.

Pre-show activities include a Training for Trainers program, co-sponsored by PLCAA, the National Pest Control Association and the Florida Pest Control

The new Tampa
Convention Center is
within walking
distance of
several hotels.

Association, on Friday and Saturday, Nov. 15-16.

On Sunday, Nov. 17, preconference seminars at the Hyatt Regency will address Media Training and Effective Techniques of People Management. All are welThe following is a list of exhibitors for the Green Industry Expo, current as of Sept. 18.

A

ATI Corp. A.M. Leonard **AABACO Industries** Accuflex Industrial Hose Aglukon Agri-Products Agrico Agronomic Service Lab Agrotec ALCA American Cyanamid Co. American Intertool Inc. American Nurseryman Publishing Ampel Co. Amturf Seeds* The Andersons Aguashade Aquatrols Arcadian Corp. ASC Mineral Processing

B

B & W Sales and
Marketing
BASF Corp.
Becker-Underwood
Billy Goat Industries*
Blackburn Mfg. Co.
Briggs & Stratton Corp.
Brown Manufacturing/
Trenchmaster*
Brushking
Burkeen Mfg. Co.

C

C & P Press/John Wiley & Sons C & S Turf Care Equipment* Certified Slings Chemilizer Products Chevrolet Ciba-Geigy/T&O Division Classen Manufacturing* Classic Groundcovers CNA Insurance Cos. Convault Corbin's Baled Pine Straw Corbitt Cypress Sales CoRoN Coxwell's Crary Bearcat Co.* Creative Sales Crysteel Manufacturing Curv-Rite Aluminum Edging

D

Dalen Products Doggett Corp. Douglass Screen Printer DowElanco

E

E.F. Burlingham & Sons
Earthway Products
Easy Gardener
Echo
Encore Manufacturing Co.*
Enviro-Gro Technologies
Epoleon Corp. of America
Excel Industries*
Exmark Mfg. Co.*
External Spreader Carrier

F

F.D. Kees Mfg. Co.*
Farmers Marketing Corp.
Feldmann Engineering
& Mfg.
Ferris Industries*
Fine Lawn Research
Finn Corp.*
First Products*
Fluid Power Products
Focal Point
Communications
Forestry Suppliers
Four Star Services

G

Gandy Co.
Garick Corp.
Gempler's
Georgia Marble Co.
Glenmac
GNC
Grace-Sierra
Graham Lawn Equipment
Grasshopper Co.
Gravely International*

FLOOR SHOW: GIE EXHIBITORS

Grazer Division of Ingersoll*
Great Salt Lake Mineral
& Chem.
Green Garde Div.
of H.D. Hudson
Greenline Distributors
Greenworld Products
Corp.
Grounds Maintenance

Н

Hahn*
Hannay Reels
Harmony Products
Haybuster Mfg.*
Heckendorn Equipment Co.
of Kansas
Helena Chemical Co.
Hoechst-Roussel Agri-Vet Co.
Howard Johnson's Ent.
Humate International
Hunter Agri-Sales

L

I.S.I./Terra-Sorb Imler Industries International Soil Systems ISK Biotech Corp. Isuzu Truck of America

J

J. J. Mauget Co.
J. Thomas Distributors
Jacklin Seed Co.
Jacobsen Division of Textron*
John Deere*
Jonathan Green

K

KLM Bio Systems Knox Fertilizer Co. Kohler/Spencer Engine of Jax. Koos/Shore Kubota Tractor Corp.

L

Land Pride Div. of Great Plains Landscape & Irrigation Landscape Management Landscapers Supply Corp. Lange-Stegmann Co. Laroche Industries
Lastec*
Lawn & Landscape
Maintenance
Lawn Tech
Lawn-Boy
Lebanon Chemical Corp.
LESCO*
Lofts Seed

M

Maibo Pruning System* Michigan Peat Milorganite Minnesota Wanner Co.* Mobay Corp. Monsanto Co. Mycogen Corp.

N

Naturalawn
Nature Safe Products
Griffin Inds.
New Golf Concepts
New-Land Products/
EZ Loc Clamps
NK Medalist Turf
Nor-Am Chemical Co.
Normarc Seed Co.
North American Green

0

O.M. Scott Co.
Olathe Manufacturing*
Oldham Chemicals Co.
Oly-Ola Sales
Oregon Chewings Fescue

P

PBI Gordon Corp.
Peco*
Pennington Seed
Pepco Water Conservation
Perfco Corp.
Perma Loc Corp.
Perma-Green Supreme/
PGS Marketing
Pesticide Control
Technology Serv.
PGMS
Pickseed West
PLCAA
Portable Products/

Bucket Boss
Practical Solutions
PRO
Pro-Power Equipment*
Professional Tree & Turf
Equipment*
Proprietary Seeds
Proseed USA
Publishers For
Conventions
Pumping Systems*
Pursell Industries
Putting Green
International

R

R.G.B. Laboratories R.N.D. Signs Rain Bird Sales* Ramparts* Ransomes America Corp.* Real Green Computers Redmax* Reemay Rhone-Poulenc Ag Co. Ringer Corp. Ritchie Bestway Commercial Riverdale Chemical Co. Rockland Corp. Rockustics* Rogers-Innovative Ron Kidd **RootsRuffin**

S

Sandoz Crop Protection Scag Power Equipment* Service Industry Software Service Master Lawncare Shawtown Industries Simplex-Ideal Peerless Snapper* Southern Turf Management Special Products UAP Sprayer Parts Depot Strong Ent. Spraying Systems Co. Spring Valley Turf Products Spyker Spreaders Stellar Industries* Stockhausen

T

Tanaka Ltd* Terra International Terra-Products Terracare Products Co. **Thornton Computer** Management Thornton Laboratories The Toro Co.* Tree Care Industry Tree Guard True Temper Cyclone Tuflex Mfg. Co. Turfco/National Mower* Turf **Turf Merchants** Turf-Seed Tyler Enterprises

U

Udor U.S.A. Uniroyal Chemical Co.

V

Vigoro Industries Viking Engineering Vocational Education Productions

W

W.A. Cleary Chemical Corp.
Walker Manufacturing Co.*
Wanner Engineering
Westheffer Co.*
Westmac Aerators Lawn
Masters*
Wheel Spray Corp.
White's Pelletizing Co.
Wilbur-Ellis Co., Brayton Div.
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Y

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Z

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*These exhibitors are also taking part in the Outdoor Equipment Demonstration.





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The Landscape and Grounds Management Conference will also be held at the Tampa Convention Center. This year's conference promises more than 20 educational sessions on a range of business and landscape design,

installation and maintenance issues.

The conference kicks off on Monday, Nov. 18, with a keynote address by Jay Conrad Levinson, bestselling author of *Guerrilla Marketing*. Levinson's presentation will focus on secrets for making big profits from small businesses.

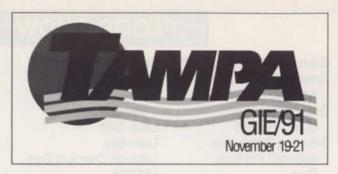
Other sessions include: Pricing Your Work to Make Money; Recruiting, Hiring and Retaining; Comparing Artificial Playing Surfaces with Natural Grass; Planning for Challenges of a Family Business; Award Winning Integrated Pest Management; Low Voltage Lighting Systems; How to Save Money on Insurance; and Large-Scale (Commercial) Composting.

In addition, the popular Breakfast with Champions will be held early each morning (Nov. 18, 19, 20), for industry leaders to discuss solutions to grounds management problems. Mike Guthrie of Ground Control, Orlando, Fla., is once again organizing the event. He said that Breakfast with Champions is a high point of the conference because it encourages a free exchange of ideas. He said it's especially beneficial for people "coming up the ladder" to learn from their peers.

This year's Breakfast with Champions is expected to fill about 25 tables per day. Topics include selling additional services, selling in a down market, hiring and training, maintaining a professional image, preventive maintenance programs and bidding landscape maintenance and irrigation installations.

An insider's tour of Busch Gardens and a Welcome Reception at Blueberry Hill are planned for Sunday, Nov. 17.

OUTDOOR DEMO. The Expo concludes with an outdoor equipment demonstration site on Thursday, Nov. 21, at Horizon Park, from 9 a.m. to noon.



The demonstration site traditionally has been a part of PLCAA's annual show; but with last year's merger, attendance increased somewhat. Still, ALCA and PGMS members were slower to respond to the outdoor exhibit. Shulder expects that to change.

"The outdoor site was a PLCAA tradition, and our people were not used to that," he said. "But the ones who stayed were so happy with it, that attendance is definitely going to improve. It may take a year or two, but I think it will become an integral part for all concerned."

Dyk also said he was pleased with last year's turnout. "From everything I heard, it went very well. It gave people a chance to see everything hands on."

FUTURE PLANS. Pleased with the success of last year's show, GIE officials extended its expiring two-year agreement through 1995. Last May, PLCAA, ALCA and PGMS leaders agreed to keep the conference and trade show together for four years past the initial agreement.

The board of directors for the three sponsoring organizations plans to meet in Tampa to celebrate the renewed cooperation. "With another three years of working together, we want to celebrate what we've got," McClure said.

The 1992 show will be held in Indianapolis. No further sites have been selected.

For more information about this year's show, contact GIE, 1000 Johnson Ferry Rd., N.E., Suite C-135, Marietta, Ga. 30068-2112; 404/977-5222.

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

Equipment to reduce yard waste volume is sure to be popular this year.



FUTURE PESTICIDE LAWS

SHOULDN'T SPELL DOOM FOR **MAINTENANCE OPERATORS**

The future of the lawn and landscape maintenance industry may appear bleak at times, but the credible and accountable operator should have no problem maintaining profitability.

By R.L. Brandenburg



todes that attack insects.

Despite all the emphasis on new technology, it will be the actions of the maintenance contractor that preserve the industry and indiMake proper handling obvious to the public.

vidual ability to conduct business in an environmentally sound and acceptable manner.

Two key terms all organizations must address and make an integral part of their operation are credibility and accountability. The two are interrelated and quite broad in scope, but if addressed, they can be the cornerstones of future pest management programs.

CREDIBILITY. Any good business knows the value of credibility with clients and the public in general. The first area, and perhaps the most important to maintaining good credibility, is to look and act professionally.

Many in the general public view pesticides as dangerous toxins and operators as poorly trained in the application of pesticides. Few people realize that many of the pesticides used today are much safer and used at lower rates than those used in the past.

In addition, most of the public is unfamiliar with state licensing and certification requirements for pesticide applicators.

Anytime the appearance of a sloppy operation is portrayed, the industry is reinforcing what some of the public believes is true. Careful handling, mixing and application of pesticides should be made obvious to the public. The proper use of appropriate safety equipment gives further evidence that lawn maintenance operations are efficient and properly run.

First impressions mean a lot, but these impressions are continually under scrutiny since landscape maintenance is like living in a glass house. A professional appearance is critical.

Another aspect of credibility is being well-informed and educated on the latest technology in landscape pest management. Continuing education is an important part of being a top-notch profes-

logical control. Recently, a lot of emphasis has been placed on the use of resistant varieties, such as turfgrasses containing the endophytic fungi, and the use of biological control, including the en-

tomogenous or parasitic nema-

including the use of cultural prac-

tices, resistant varieties and bio-

changes

MUCH HAS ALREADY been

written about the public's concern

over the use of pesticides in the

landscape. The fuel that sustains

these fires comes from a variety

of sources. Unfortunately, some

of the so-called experts on the

issue of pesticide safety are far

from proficient on the topic;

rather, they are individuals who

for one reason or another are in

Arguments for and against

pesticide use, and advice on how

to educate the public has domi-

nated conversations in some

circles. And as the decade of the

environment continues, the in-

dustry will read and hear more

about developments in state and

federal regulation of the lawn and

landscape maintenance industry.

over pesticide use will not com-

pletely disappear in the short

term. In addition, the industry

Undoubtedly, public concern

the public spotlight.

LAWN & LANDSCAPE MAINTENANCE • OCTOBER 1991

sional. There are many sources of information including trade journals, workshops, field days and so on. The key is regular attendance to stay current with the latest pest management approaches and regulations.

When a maintenance operator can communicate the latest information to his clients, they will have the utmost confidence in that firm and the program being offered. Communication entails answering questions in a satisfactory manner and being able to address any concerns customers may have.

Since the public reads and hears about pesticides and their negative aspects, it is always advantageous to be well-educated in this area to respond in a factual and sensible fashion. Additionally, many homeowners are aware of the various organic approaches that are becoming more prevalent for use in the landscape.

Some of these organic pest control techniques certainly have a place in the home or commercial pest management business. A well-rounded knowledge of these organic pest control techniques provides two important benefits.

First, it allows you to discuss them with customers. This portrays you as a highly qualified professional able to discuss any program they may want. Even if your service doesn't offer any special organic approaches, it allows you to discuss the pros and cons of the options and demonstrate your dedication and commitment to



Building client trust is a key to long-term success.

Even if a business isn't capable of offering any form of organic pest control, a good knowledge of the basic philosophy behind it, its shortcomings and benefits are worthwhile. You may learn that the better you understand organics, the more you'll find you may already be doing some practices that are a component of the approach.

Organic pest management on a large-scale is time-consuming, but not paying some attention to it is a mistake. Tighter regulations and fewer pesticides to work with in the future makes the integration of non-chemical control strategies even more important. ly become so in more areas. All pesticide applications must be recorded and documented. This documentation may go so far as to include the purpose or target pest of the application, rates, equipment used, calibration records, etc.

Regulations may eventually force inventory records that will be cross-checked against the number of applications, the rate and the areas treated to verify proper pesticide use. Such regulations may seem like a slap in the face to well-trained and licensed pesticide applicators, but increases in regulation, not a reduction, are more likely in the future.

Such accountability within one's organization can have benefits. Good record keeping can help you in incidences of liability. Documentation of your operation is a good defense should a false or misdirected claim be aimed at your business. So while potential legislation for the future may seem like overkill, good record keeping, whether required or not, is for your own benefit.

A company that presents an image of keeping its own shop clean is a company that represents itself well to the public. It also presents a positive image for the industry as a whole. Accountability as to why specific pest management techniques are being used is also going to become more important in the future.

The use of preventive pesticide applications will probably come under more criticism than ever.

Whether it be an insecticide applied preventively for grub control or an herbicide applied in a similar fashion for crabgrass control, the public will probably question such approaches more than in the past.

The public has every right to ask questions concerning the use of a synthetic insecticide for white grub control, for example, rather than the milky spore disease. There are several reasons why milky spore disease might not be used for grub control. Being able to account for your actions is crucial.

There are a variety of control strategies for any particular pest. Throughout the 1990s it will be increasingly important to justify reasons for using any one particular strategy over another. This will be especially true in respect to the use of pesticides in the home environment.

Lawn maintenance operators should be prepared to answer those questions. If they can't be answered, then thought should be given as to why you're using the methods you are.

A good example is the use of preventive applications of insecticides for the treatment of white grubs. Applying an insecticide on a preventive basis might be justified if that area has a history of grubs, and the timing of an application would save the firm an additional trip.

It's becoming more important to justify the use of one pest strategy over another.

staying abreast of the latest in integrated pest management.

Secondly, if you understand organic options you can incorporate several practices into your program or even develop a total program for those individuals interested in such an approach. Once again, this demonstrates a commitment to providing a service a customer requests as well as a commitment to education. It also shows you aren't neglecting the concerns of the public.

ACCOUNTABILITY. Closely related to credibility is a business with good accountability. The two overlap, but at the same time differ in specific areas. Accountability covers several areas as they relate to regulations and to IPM. Being accountable in all areas of an operation is a key to long-term success and building client trust.

Accountability in regard to pesticide use is already the law in some areas and will undoubtedBetter yet, a preventive application is justified if scouting turned up damaging populations of grubs feeding on the turf. Such accountability is not unreasonable.

This issue directly influenced the way business was done in the past. But the use of preventive applications of pesticides on a broad basis is more difficult to justify in this day and age. Preventive uses of pesticides were previously thought to be effective and allowed the operator to plan ahead with maintenance programs. However, the increased accountability of using pesticides may eventually result in more demand for scouting turf and ornamentals, and treating only when the plants are threatened.

New technology is being developed that permits a reduction in the rate of pesticide used, leaves less surface residue and reduces any potential environmental hazard. For example, applicators that inject liquids and granules directly into the turfgrass are being tested in many locations. This will undoubtedly be important technology for the future. Offering

clients the best approach to pest management through the latest in equipment will be of great importance as regulations are put in effect restricting when and where pesticides are applied.

conclusion. Lastly, your organization will be evaluated on the use of new organic and biological control techniques. The parasitic nematodes and resistant turfgrasses discussed earlier are but a few examples of new technology that is already being used and continues to be improved.

The use of Bacillus thuringien-

sis, sold under a number of trade names; milky spore; mulches; organic fertilizers; degree days to predict pest outbreaks; pheromone traps to warn of threatening pests; and so on will all be a part of landscape management in the future. Regulations will force some changes and the public will demand some choices.

One of the major limiting factors in implementing some of these new control techniques is

A well-rounded program enables contractors to discuss options with homeowners.

that universities as well as private and government agencies have not thoroughly tested all of their uses. More importantly, little work has been done to study how they can be used together or to complement traditional pesticide programs. Research is under way in most states to help answer many of these problems.

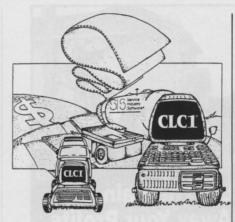
In closing, the future for the lawn and landscape maintenance industry will evolve rapidly over the next few years. Rather than be viewed negatively, the best operators will take advantage of new options available to offer services that best suit the client's needs. This will provide never before seen opportunities to those businesses that stay on top of the new technology to rapidly outpace the competition.

Credibility and accountability

— two key words that should be
an integral part of all operations
to ensure survival and success in
the 1990s.

The author is an extension entomologist at North Carolina State University, Raleigh, N.C.





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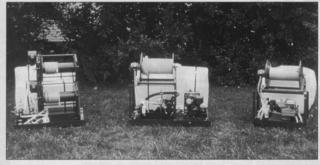
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People

GUSTAVO PICASSO joined Jacklin Seed Co.'s international marketing department, specializing in export sales of turf and forage grass to Central and South American countries, as well as southern: Europe, the Mediterranean and Middle Eastern countries.

Prior to Jacklin, Picasso spent more than six years with Jose R. Picasso, S.A., a turf and forage grass production and marketing company in Argentina.

Patrick Menagh has joined ISK Biotech Corp. as sales representative covering Southern California, Arizona and Hawaii.

The company also has selected **Doug Hoy** as its salesman of the year. Hoy is senior sales supervisor in the western territory.

F.H. (Eric) Smitsdorff was named vice president of marketing for Jacobsen, Racine, Wis.

Smitsdorff is responsible for product management, market planning, advertising, distribution and aftermarket activities.

The commercial division of Rain Bird

Sales has appointed **Rick Davis** as national specifications sales manager. In his new position, Davis oversees 10 Rain Bird area specifications managers across the country. The specifications sales team is responsible for keeping landscape architects and specifiers informed of current irrigation products and applications.

Also at Rain Bird's commercial division, **Douglas Callison** has been appointed specifications manager for northern California, northern Nevada, Oregon and Washington.

Dick Tegtmeler is handling sales and marketing administration duties for Encore Manufacturing. He now works closely with the company's distributors and OEM customers. Tegtmeier founded the company in 1988.

NK Medalist Turf Division of NK Lawn & Garden Co., Minneapolis, has added three new turf sales specialists to its staff: Michael Tentis, western region; Luis Mendoza, Midwest; and Lee Record, Southeast







Tegtmeier

F. Leon Herron Jr., retired chairman and president of O.M. Scott & Sons, has been elected to the board of directors of LESCO.

Herron joined O.M. Scott in 1965. He was elected president in 1966 and chairman in 1971. He served as chairman and president until his retirement in 1983.

Yazoo Manufacturing Co. announces the following personnel changes: Dan Swain, from chief financial officer to executive vice president and chief financial officer; and Jim Welch, from senior vice president and production to vice president of operations.

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Circle 126 on reader service card

A customer calendar designed for the lawn and landscape maintenance industry is available from **Focal Point Communications.** The calendar is produced on recycled paper and features full color photography. Perforated coupons on the back cover are customized to work year-round with the company distributing them.

The calendar includes lawn care tips for customers. The landscape company name is prominently displayed and visible throughout the year.

Circle 127 on reader service card

Product Spotlight

The **Swisher** solar-operated composter uses a self-rotating tumbler to turn waste into compost within weeks. Solar energy recharges the 12-volt switching system, which rotates the 23-bushel tumbler daily. The rotation stirs up the contents to speed decomposition.

The composter is also available with a manual crank.

Circle 125 on reader service card



Boss Products introduces the Rapid-Tach quick hitch for its straight blade snow-plow. Rapid-Tach allows the operator to attach a snowplow quickly without crawling under the truck. To attach, the operator drives into the plow and drops the cable-controlled pins into place.

Circle 128 on reader service card

Winter attachments are available for the **Excel** Hustler. The 60- or 72-inch dozer blade attachment has a reversible blade that can be hydraulically positioned up to 30 degrees left or right. A 48-inch manually controlled blade is available for models 251K and 260K

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hydraulically controlled. The open-center auger design and three-blade impeller feeds snow directly to the hydraulically controlled spout. Snow can be blown in any direction within a 190-degree radius.

Other attachments include a rotary broom, cab, tire chains, wheel weights and rear weight kits.

Circle 129 on reader service card

Ariens offers the Professional Series Sno-Thros. All three models in the series are two stage with large 16-inch auger blades and 14-inch diameter impeller fans.

Ariens ST828 features an 8-h.p. engine and clears a 28-inch path. The ST1032 with a 10-h.p. engine clears 32 inches. The ST1236 has a 12-h.p. overhead valve engine and clears a 36-inch path. All en-

gines are four cycle, winterized Tecumseh Snow Kings.

Circle 130 on reader service card

The **Sweepster** Power Sweeper is designed to remove snow in the winter, as well as clean debris during warmer months.

Models are available for all sizes of tractors, loaders, trucks or self-propelled styles.

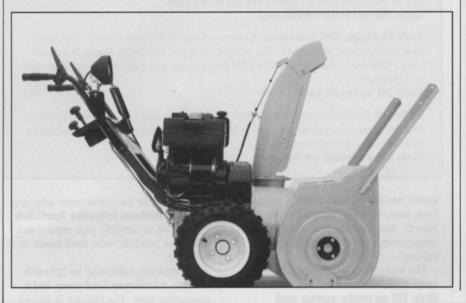
The rotation of the brush provides a clean sweep over uneven surfaces. Flexible bristles are designed to sweep delicate surfaces without damage.

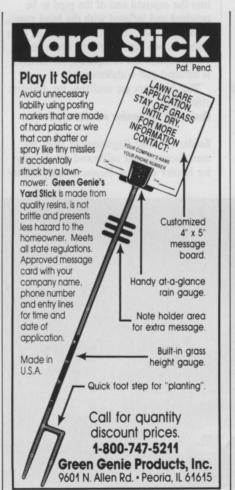
Circle 131 on reader service card

The O.M. Scott & Sons Co. has developed Poly-S coating technology, which combines polymer and sulfur in a new coating for controlled-release turf fertilizers.

Residual can be programmed from two to six months according to application. The composition of the polymer, through which the nutrient is diffused, determines the rate of release.

The technology offers several advantages, including abrasion resistance and decreased buildup on equipment, increased water insoluble nitrogen values and resistance to environmental stress. Agro-





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CoRoN is excellent in low volume systems which saves time and money in labor and equipment costs.

CoRoN's 28-0-0 analysis and unique two-step manufacturing process allows CoRoN to give dry methylene urea performance on turf with the efficiency of liquid handling.

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CoRoN Corporation Souderton, PA 18964 800-338-0836 215-723-5099



Hunter offers irrigation equipment catalog. This 48-page catalog details Hunter's Professional and Institutional Series sprinklers.

Circle 139 on reader service card

Nursery showcases offerings. The 28-page, full-color wholesale catalog from Vans Pines Inc. features new varieties from the Far East, as well as its standard selection of Northern-grown conifers and deciduous trees.

Circle 140 on reader service card

Book highlights IPM techniques. Common-Sense Pest Control covers Integrated Pest Management techniques. The authors, William Olkowski, Sheila Daar and Helga Olkowski, also publish The IPM Practitioner and Common Sense Pest Control Quarterly.

Circle 141 on reader service card

Be Smart! Echo offers the "Be Smart" kit and video that promote the safe use of outdoor power equipment, especially blowers. Included also is information about ongoing training programs.

Circle 142 on reader service card

nomic benefits include uniform release from week to week, reduced surge growth, extended residual, decreased temperature sensitivity and low phytotoxicity.

The technology will be introduced in early 1992.

Circle 132 on reader service card

Jacobsen Professional Turfcats feature a hydraulic implement drive. Both the 22h.p. diesel T422D and the 36-h.p. gas T436G can be equipped with 60- or 72inch front-mounted rotary mowing decks, or a 60-inch fine-cut flail. A foot-operated implement control leaves the operator's hands free for steering.

Optional attachments include a snow thrower, blade or blower for year-round applications.

Circle 133 on reader service card

Moby Dike, an inflatable water drip stopper from National Irrigation Specialists, is designed to simplify pipe repairs and hold back residual water until repair is complete.

The product consists of an inflatable bladder, a bulb-type hand pump and a connecting tube. The bladder is slipped into the exposed end of the pipe to be repaired and inflated with the hand pump, creating a dam. The connecting tube then joins the two pipe segments under repair. When repairs are completed, the bladder is deflated and withdrawn.

Two bladders are available for different size pipes.

Circle 134 on reader service card

Kohler Genuine Replacement Parts are manufactured and calibrated specifically for Kohler engines. Replacement parts in-



clude air cleaners, oil filters, fuel filters, mufflers, carburetor and ignition repair kits.

Circle 135 on reader service card

The **Melroe Company** has introduced the Bobcat T209 walk-behind trencher with fingertip controls and multiple digging depths. The trencher is powered by an 8.4-h.p. Vanguard/16 gasoline engine and features automatic low-oil shutdown.



Infinitely variable hydraulic ground drive allows travel speed to be matched to digging conditions.

The unit's compact size — 32-inches wide — makes it easy to maneuver through gates and around shrubbery and sidewalks. Operating weight is 800 pounds.

Circle 136 on reader service card

The **Grasshopper** 48-inch Sweepster rotary broom can be used year-round as a complement to Grasshopper's zero-turn front mowers.

The PTO-driven broom clears snow and debris with a 30-degree right discharge. An electric lift raises the broom clear of

the surface when not in use.

The product was incorrectly identified in the July issue of *LLM*.

Circle 137 on reader service card

The **Pro Star** Commercial mower features Sundstrand hydraulic pumps, Parker wheel motors, 50- and 60-inch cutting widths and 18- and 20-h.p. Kohler Magnum twin cylinder engines with oil pump, filter and electronic ignition.

The mower revolves within a zero-turning-radius pattern. Two hand levers add to maneuverability and allow variable speeds from 0 to 10 mph. Deck height adjustment is controlled with the foot while sitting in the seat.

Circle 138 on reader service card

Safety Storage, Inc. has introduced Model 6 chemical storage lockers. The all-weather lockers are constructed with welded 10-and 12-gauge ASTM-A569 steel, with supporting structural steel sections.

Interior surfaces are covered with two coats of chemical-resistant paint. The exteriors are finished with reflective white polyurethane.

Units include a 6-inch spill-containment sump with 122-gallon capacity. Flooring is removable for easy spill cleanup.

Circle 143 on reader service card

Dow Chemical Co. is offering two new brochures on PELADOW premier snow and ice melter.

"Put the Heat on Ice" describes the deicer and how it helps reduce the risk of injury from falls.

A second brochure, "What's the Hottest Deicer on the Market," provides comparison data on PELADOW and other deicers. It includes charts and graphs explaining deicing speed, lowest practical temperature and application rates.

Circle 144 on reader service card



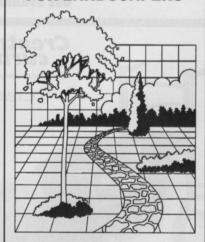
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Calendar

OCT. 17-18

Xeriscape '91 — San Diego Style, San Diego Convention Center, sponsored by Cuyamaca College Botanical Society and the San Diego County Water Authority. Contact: Jan Tubiolo, Cuyamaca College Botanical Society, 2950 Jamacha Road, El Cajon, Calif. 92019; 619/443-1756.

OCT. 19-22

American Society of Landscape Architects Annual Meeting and Educational Exhibit, Kansas City Convention Center, Kansas City, Mo. Contact: ASLA, 4401 Connecticut Ave., NW, Fifth Floor, Washington, D.C. 20008-2302; 202/686-ASLA.

NOV. 5-8

New York State Turfgrass Association, Turf and Grounds Exposition, Rochester, N.Y. Contact: NYSTA, P.O. Box 612, Latham, N.Y. 12110; 800/873-TURF.

NOV. 9-11

New Jersey Shade Tree Federation 66th Annual Meeting, Sheraton Poste Inn, Cherry Hill, N.J. Contact: Bill Porter, 908/246-3210.

NOV. 10-13

The Irrigation Association International Irrigation Exposition and Technical Conference, Convention Center, San Antonio, Texas. Contact: IA, 1911 N. Fort Meyer Drive, Suite 1009, Arlington, Va. 22209-1630; 703/524-1200.

NOV. 12-13

Indiana State Lawn Care Association Conference and Trade Show, Indiana Convention Center and Hoosier Dome. Contact: Robert Andrews, ISLCA, P.O. Box 481, Carmel, Ind. 46032; 317/575-9010.

NOV. 17-20

National Institute on Park and Grounds Management 21st Annual Educational Conference in conjunction with Grounds Expo '91, Hyatt Regency, Louisville, Ky. Contact: National Institute on Park and Grounds Management, P.O. Box 1936, Appleton, Wis. 54913-1936; 414/733-2301.

NOV. 18-21

Green Industry Expo '91, sponsored by ALCA, PGMS and PLCAA, Convention Center, Tampa, Fla. Contact: Green Industry Expo, 1000 Johnson Ferry Road, NE, Suite Cl35, Marietta, Ga. 30068-2112; 404/973-2019.

NOV. 21-24

Landscape Maintenance Association Equipment Show and Conference, Holiday Inn — Sabal Park, Tampa, Fla. Contact: Charles Bingaman, LMA, P.O. Box 728, Largo, Fla. 34649; 813/584-2312.

NOV. 25-28

Professional Development Series for Turf Managers, University of Guelph, Ontario. Contact: Division of Continuing Education, Room 160 Johnston Hall, University of Guelph, Guelph, Ontario NIG 2W1; 519/767-5000.

DEC. 2-4

New Jersey Turfgrass Association Expo '91, Garden State Exhibit and Convention Center, Somerset, N.J. Contact: 908/932-9271.

DEC. 2-5

Ohio Turfgrass Conference and Show, Cincinnati Convention and Exposition Center, Cincinnati, Ohio. Contact: OTF, 2021 Coffey Road, Columbus, Ohio 43210; 614/292-2601.

DEC. 2-6

"Your Home Turf," The Michigan State University Turf School, East Lansing, Mich. Contact: Dr. Frank Rossi, 517/353-0860.

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- 1. NO PURCHASE NECESSARY
- The contest is open to licensed lawn and landscape maintenance contractors, their employees
 and suppliers. Only persons who, as of the date of the drawing for the prize, are 18 years
 of age or older, with a valid driver's license, and are legal residents of the U.S. are eligible to enter.
- 3. This sweepstakes is not open to employees or the families of the Chevrolet Motor Division, Chevrolet Dealers, Lawn & Landscape Maintenance magazine or other GIE Publishing Co.

SERVICE VEHICLE SWEEPSTAKES

publications, and affiliated companies

4. Enter by completing and mailing the official entry form available in the monthly issues of *LLM* magazine, your local distributors or at various locations at the Green Industry Expo'91, Tampa, Fla., November 18-20, 1991, or by printing your name, address, city, state, zip code, phone number and driver's license number on a plain 3-in. by 5-in. piece of paper and mailing it to *LLM*'s "Service Vehicle Sweepstakes," 4012 Bridge Ave., Cleveland, Ohio 44113, Attn: Fran Franzak, or depositing it in one of the official entry boxes located at the GIE exhibition hall before noon, November 20, 1991. Not responsible or liable for lost, late, stolen, mutilated, illegible, incomplete, postage due or misdirected entries. No mechanical reproductions permitted.

5. PRIZE — one 1992 Chevrolet truck of your choice valued at \$18,000.00. The winner will be determined by a random drawing of all entries received, to be conducted 1:00 PM on Wednesday, November 20, 1991 at the GIE exhibition hall. The winner will be announced and notified by U.S. mail and/or telephone. Prize notification returned as undeliverable as addressed will result in an alternate winner being drawn and notified until a qualified entrant is awarded the grand prize. Only one grand prize will be awarded.

- 6. No cash equivalent or prize substitution offered. Prize is not transferable.
- 7. All federal, state and/or local taxes and vehicle registration fees, if any, are the sole responsibility of the winner. Winner will be required to sign an affidavit of eligibility and liability/publicity release (allowing the sweepstakes sponsor to use the winner's name and likeness for publicity purposes) as a condition of being awarded the prize. Failure to do so will result in an alternative winner being selected.
- 8. Void wherever prohibited or restricted by law.
- 9. Odds of winning will be determined by the number of entries received. All entries will become the property of $\it LLM$ magazine and GIE Publishing Co.
- 10. By participating, you agree to these rules and decisions of the judges which shall be final in all matters relating to this sweepstakes.
- 11. To obtain name of the winner of this sweepstakes, send a self-addressed, stamped envelope to *LLM's* "Service Vehicle Sweepstakes," 4012 Bridge Ave., Cleveland, Ohio 44113, Attn: Fran Franzak.

Ad Index

Classifieds

RATES

All classified advertising is 75 cents per word. For box numbers, add \$1 plus six words. All classified ads must be received by the publisher before the 1st of the month preceding publication and be accompanied by cash or money order covering full payment. Submit ads to: Lawn & Landscape Maintenance magazine, 4012 Bridge Avenue, Cleveland, Ohio 44113. Fax: 216/961-0364.

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Top firm needs foreman. Quality conscious Texas-based landscape management firm has immediate opening for detail-oriented landscape maintenance foreman. If you have outstanding professional and horticultural skills and are not afraid of hard and healthy teamwork, then you could qualify for a top position with the finest landscape firm in the Southwest. Outstanding compensation and opportunity. Reply to: Lawn & Landscape Maintenance, Box 325, 4012 Bridge Ave., Cleveland, Ohio 44113.

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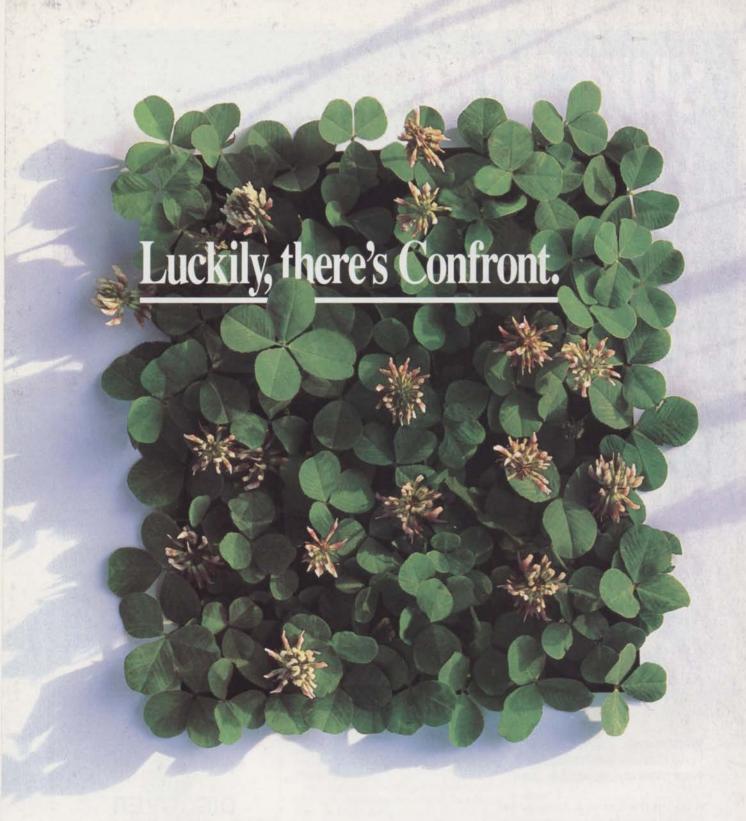
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