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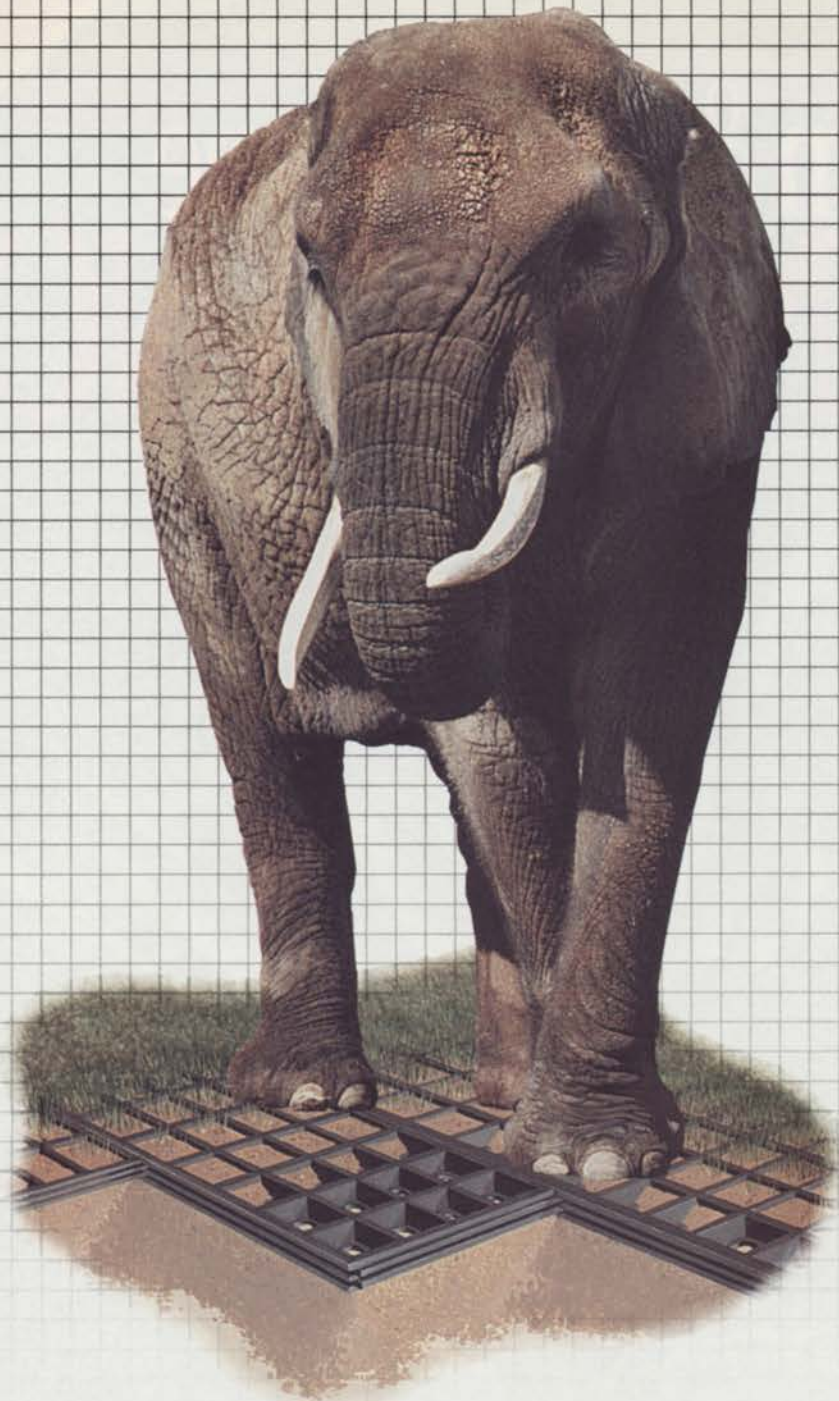


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USE READER SERVICE #43

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Lawn & Landscape MAINTENANCE

VOLUME 13, NUMBER 10

OCTOBER 1992

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Chuck Wimmer, Brecksville, Ohio

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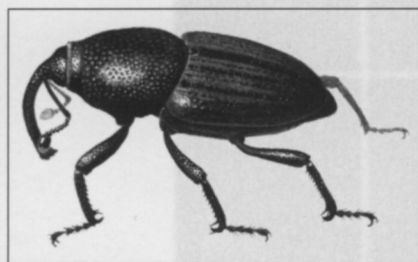
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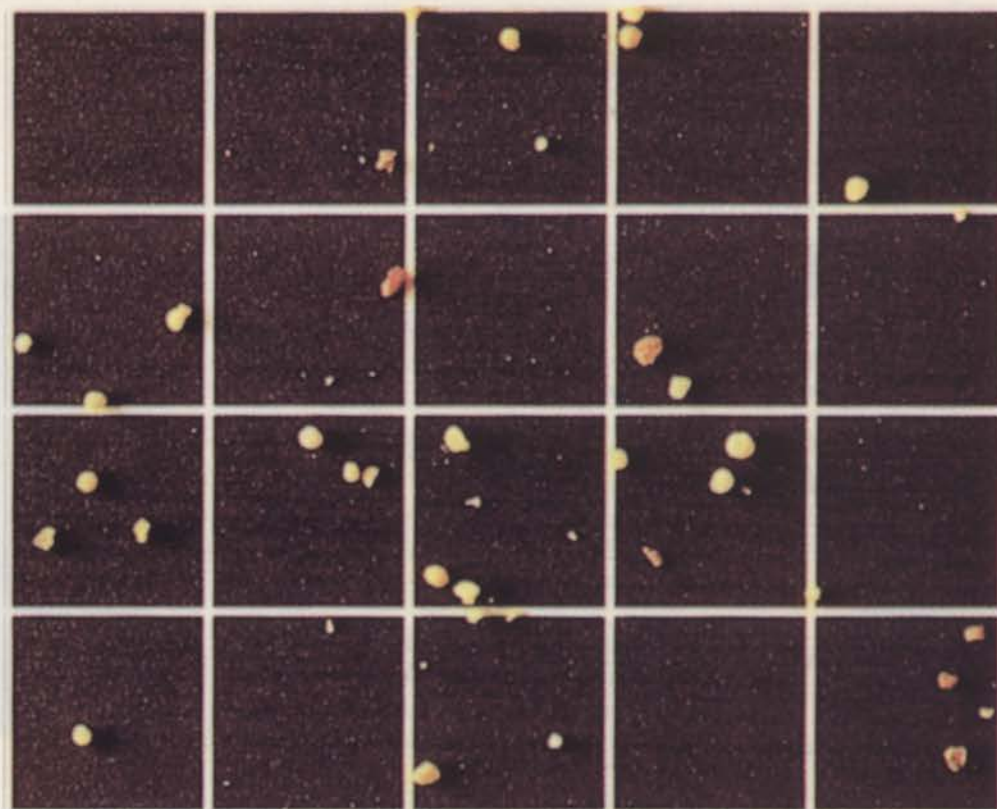
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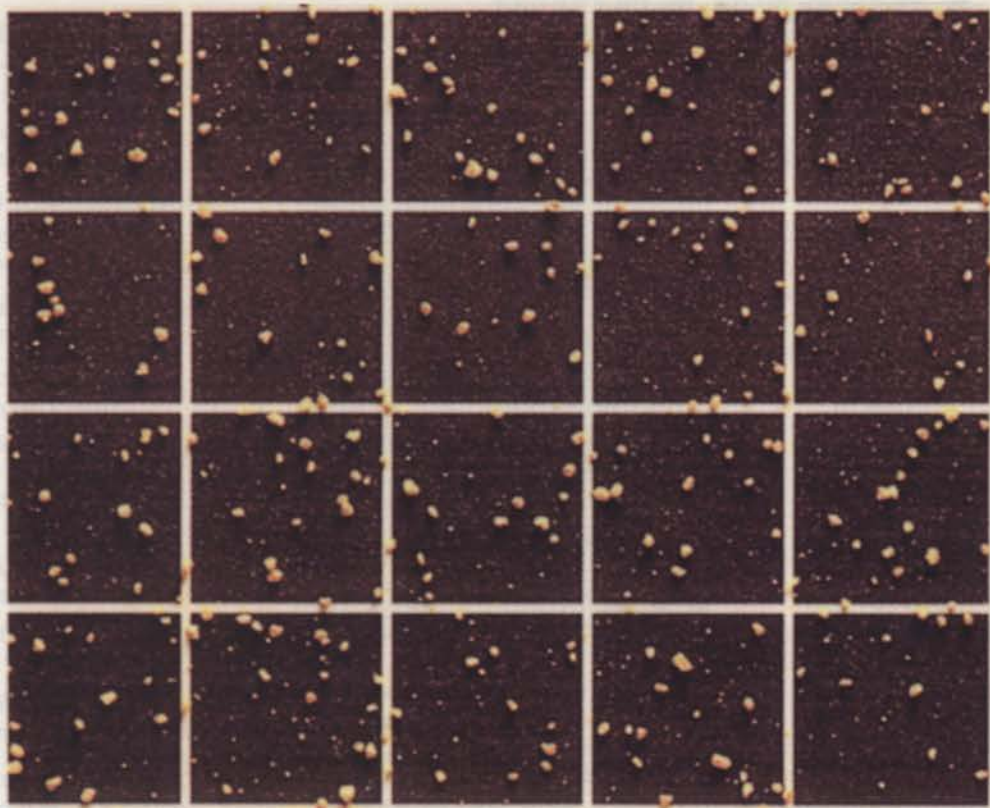
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dithiopyr (Dimension)*	H	M	H	M	H	M	M	M

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USE READER SERVICE #14

Editor's Focus

IT MAY HAVE been a mild spring and summer legislatively in the lawn and landscape maintenance industry, but fall is shaping up very differently.

In addition to deciphering the political rhetoric from our presidential candidates, Ohio voters are contending with potentially far-reaching, onerous right-to-know laws. While Ohio is only one state, ramifications of "Issue 5" could spread nationwide.

If passed, Issue 5 would require businesses including manufacturers, retailers, lawn care operators, farmers and distributors as well as many small businesses like dry cleaners, retail shops and restaurants, to place warning labels on products or produce that contain or have been exposed to any one of a list of 458 identified chemicals.

The issue, which if passed would go into effect Dec. 2, would also require most businesses with products containing the identified chemicals on their premises to mail warnings every six months to all residences and businesses within a two-mile radius of their facility.

(State and local government is exempt from the labeling/notification requirements demanded of private businesses.)

Additionally, Issue 5 would create a new tax on businesses that release or transfer toxic chemicals to be paid into a special fund; and provide for criminal penalties and civil fines for violations of the law. A large share of the new tax and fines assessed for violations would go directly into the treasury of the Ohio Citizens Action, the public activist group (backed by Ralph Nader) responsible for putting the initiative on the ballot.

Aside from what we've been told by the proponents and opponents of the issue, who and what are covered by the proposed issue is not clearly defined. For example, if taken literally, lawn care operators would be required to notify everyone within a two-mile radius of every property to which they apply pesticides. Additionally, it is said that those companies with less than 10 employees would be exempt from the issue, but the law doesn't clearly define whether that number includes full-time, part-time or seasonal help.

Businesses also adamantly object to the proposed law's assumption that a business is guilty of exposing its neighbors to harmful chemicals. Persons living within two miles of a plant, for example, can allege that exposure is occurring and demand an accounting of all chemicals on the premises.

This is particularly bad news to the lawn and landscape industry as the public is already sensitive to lawn spraying and al-



leged health issues, and will add significant costs by requiring labeling spray mix tanks, providing signs and giving written warnings with each delivery of fill dirt.

A recent economic study predicted Issue 5 will cost Ohioans \$2.2 billion in the first year of enforcement. According to analysts, compliance costs could range from \$1.5 billion to \$3.8 billion. An impact statement for the landscape industry predicts Issue 5 would affect the following chemicals: diesel exhaust, benzene, arsenic, lead (fertilizers and residues detectable in fill dirt) and pesticide materials containing low levels of listed chemicals.

California is said to have similar right-to-know information in place, but in reality, it doesn't even begin to match what is being proposed in Ohio. Nine other states have looked at such legislation, but never came close to putting it before voters.

Pitted against the huge financial resources put forth by the Ohio Citizens Action group, Ohioans for Responsible Health Information, a coalition of labor, agriculture and business leaders employed the services of a public relations firm, Paul Werth & Assoc., to develop question and answer brochures, videos and the like to combat activist propaganda. In addition, the Ohio Pesticide Applicators for Responsible Regulation are active opponents to Issue 5.

Issue 5 is a clear attempt at regulatory overkill without public benefit. The size of your firm and the state in which you operate aside, this issue is important to all landscape businesses -- large or small -- because of the potential precedent setting burden it carries.

The last thing the industry needs is more regulation. Get active in local and state issues. And most of all, take advantage of your right to vote. -- Cindy Code ■

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Business Watch

DESPITE THE FACT the unemployment rate *dropped* slightly last month, U.S. businesses will continue to downsize their operations, according to a recent survey conducted by Manpower, a national temporary-help firm. Manpower reported that companies planning staff cuts rose 3 percent in the most recent survey. Additionally, 21 percent of businesses planned to increase their hiring activity, down 4 percent from the previous survey.

Manpower officials told *USA Today* businesses have not expanded their work force because of weak demand for goods and services, and a "wait-and-see" attitude regarding the upcoming presidential election. Company officials warned there is little evidence of a hiring rebound in the immediate future.

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JUNE	JULY	AUG.	SEPT.
8.42	7.93	7.60	7.60

Posted yields on 30-year mortgage commitments for delivery within 30 days.

CONSUMER PRICE INDEX*

MAY	JUNE	JULY	AUG.
+0.1	+0.3	+0.1	+0.3

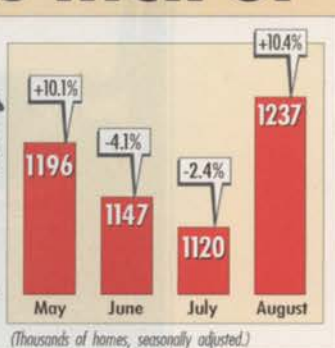
*Percent change from preceding month, seasonally adjusted.

PRODUCER PRICE INDEX*

MAY	JUNE	JULY	AUG.
+0.4	+0.2	+0.1	+0.1

*Percent change from preceding month, seasonally adjusted.

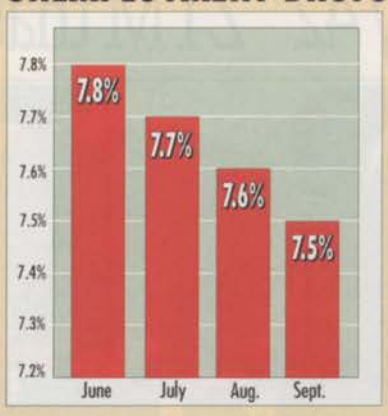
HOUSING STARTS INCH UP



(Thousands of homes, seasonally adjusted.)

Source: National Association of Realtors

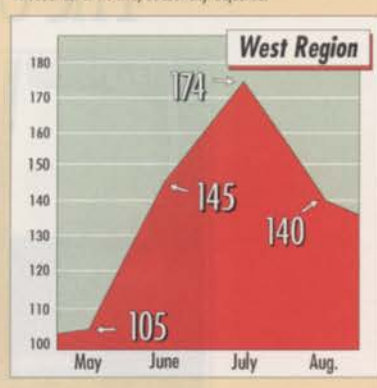
UNEMPLOYMENT DROPS



Source: Labor Department

NEW HOME SALES

Thousands of homes, seasonally adjusted.



Source: National Association of Realtors

ECONOMIC REPORT: THE PRESIDENTIAL RACE

OVERALL, LANDSCAPE contractors hold a bleak opinion of the three presidential candidates George Bush, Bill Clinton and Ross Perot. But if they had to choose today they would select Bush; not because of his good record, but because he appears to be the lesser of three evils and is most likely to assist small businesses.

So strictly from a business perspective, following are comments from some of our readers:

"I think it will be one of the most unusual presidential races and finishes we have ever seen," said Tom Lied, Lied's Nursery Co., Sussex, Wis. "Bush is still best for the country, for jobs and for business; and therefore for everyone. Bush is not real ept, but he's the best of the three. He'll be forced to pay attention to the economy."

Richard Akerman of Northwest Landscape Industries, Tigard, Ore., said he's upset that neither Bush nor Clinton have addressed the deficit. But the one candidate who has -- Perot -- blew it when he dropped out of the race in July.

"One person can be the leader, but you have to have someone who can work with the House and Senate. So, lots of change in Congress should help the economy," Akerman said. "We have terrible choices, but I'm voting for Bush because I'm scared of Clinton."

Frank Mariani of Mariani Landscape, Lake Bluff, Ill., agrees that too much emphasis is placed on the one person who gets elected as president.

"The economy is a bigger issue than the presidential election," he

said. "I don't want to vote for any of them. But if you look at the past 12 years, we're still in better shape than prior to the Reagan administration."

And the decision becomes more difficult, not easier, as the election draws closer.

"My gut feeling -- and I'm becoming less and less convinced as the days go by -- is that the Bush administration would improve the economy from a small business perspective," said Ed McGuire of The Lawn Co. S. Dennis, Mass.

And dealing with Clinton's suggested programs for small business is the one thing small businesses can't afford, according to Mark Yahn of Ground Control Landscaping, Orlando, Fla..

"I don't think Clinton is the tax and spend Democrat people say he is, but there's no way -- especially in tight times -- small business can pay for some of his ideas," he said. "I think Bush is the guy. The suggestions he already made, if they had passed, would have opened things up such as capital gains and investment credits to small business like we enjoyed in the early 80s."

Still there's others who feel that neither of the three candidates will improve the situation for small businesses in the coming year.

"It will be tough regardless," said Tim Doppel of Atwood Lawncare, Sterling Heights, Mich. "For the first time since I've been voting, I'll be voting for the lesser of two evils than the best." ■

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USE READER SERVICE #18

Letters

Timely Training

Just a quick note to tell you that I think the articles in the "Irrigation Training Series," authored by Larry Keesen, president of Keesen Water Management, are extremely valuable.

I have just finished "Lesson Two" from the August issue and find this information to be right on. We are using these articles to further educate our personnel.

These articles contain the depth of a subject that really helps out those of us that need to know. Please continue to provide articles with this quality.

Keep up the good work.

Les Mathews
President

Grounds Maintenance of Oregon
Tualatin, Ore.

You are to be congratulated on the article in your July issue authored by Larry Keesen. I have great professional respect for him, and served with him on the IA Board of Directors in the mid- to late-1980s. His article was thorough and easy to understand given the somewhat difficult task of explaining soil physics and its relationship to irrigation efficiency.

If this quality continues through the planned series, these articles will serve our industry well.

William Pogue
President
Irrrometer Co.
Riverside, Calif.

Testing Encouraged

The newest portion of the California Landscape Contractors Association certification testing program is the irrigation test. This test was developed as a result of the continuing drought in California and the proactive stance contractors took against water municipalities and local prohibitions restricting water usage in the landscape industry. Instead of getting into a verbal war, or worse, CLCA contractors put their heads together and came up with several good ideas to protect our industry from drying up over water use restrictions.

CLCA's program includes hands-on and written testing. The written test consists of general comprehension, plan reading, first aid and safety. The first part is about how and why an irrigation system works, terminology, equipment, theory, efficiency and conservation, a working general knowledge. Next, the plan reading promotes the necessity of taking a plan and turning it into an irrigation system.

The series of field tests are timed and

judged according to strict guidelines. Some of those tests include main and lateral line installation; sprinkler repair; plant and soil type identification; controller programming; troubleshooting and valve repair; grading and drainage; and water auditing.

Don't you think a basic skill in these areas is essential to every crew working on sprinkler systems? I think these skills are essential, yet the passage rate is remarkably low (less than 25 percent can pass the test) and the test is not filling to capacity.

Come on. We as contractors have work to do in this area. If your people take this test and do not pass, at least they find out how much they don't know, and they can work toward a basic skill level which we must provide to the public.

Water running down the gutter benefits no one, but a beautiful green lawn benefits everyone. And we can have our landscapes without abusing our water supply. All it takes is knowledge and training, and the CLCA certification irrigation test can get your key people up to a basic acceptable standard of irrigation expertise that is minimally expected of us as landscape professionals.

Kim Hecks at CLCA, 800/448-CLCA, has details and applications on future tests. This program can go a long way to ensure our success as landscapers, green keepers of the Earth. Get involved, get certified. It pays.

Henry Buder, CLT
Henry Buder's Landscape Restoration
Mill Valley, CA

Professional Challenge

Enjoyed your "Editor's Focus" in April's issue. One of the obstacles of which you consider and ponder is one of psychological proportions. It is endemic to our professions. It has its roots in the "earth and self"; an obsession with normality and conformity. Anything or any direction from this self-appraisal is an affirmation to their ego.

James Chadwick
James Chadwick Landscape
Architectural Design
Los Gatos, Calif.

Ed. Note: The editorial discussed the long-term viability of the green industry despite impending government legislation, and the need for those earning a living in the industry to proactively promote its benefits to the consumer media and customers. ■

Letters to the editor are encouraged. Send them to: Cindy Code, Editor, Lawn & Landscape Maintenance magazine, 4012 Bridge Ave., Cleveland, OH 44113

NEWS DIGEST

Alar OK For Non-Food Uses

The Environmental Protection Agency will retain the non-food registrations of the pesticide daminozide, commonly known as Alar. The systemic growth regulator can be used on bedding plants, chrysanthemums, azaleas, Easter lilies, hydrangeas and poinsettias.

The EPA said that the risks to workers associated with those uses were not significant, and that the benefits of the non-food uses were substantial. Other studies, however, confirmed the EPA's earlier assessment that food use of Alar poses an unreasonable risk of cancer to the public. Food uses of Alar were voluntarily canceled by Uniroyal Chemical Co. in 1989.

All Green Recognized For Impressive Growth

All Green Corp. of Marietta, Ga., was ranked 95th on the list of the country's 500 fastest-growing privately held companies, according to a recent survey in *Inc.* magazine.

All Green Corporate reported a sales growth increase of 2,330 percent over the five-year period 1987-91. The company grew from \$390,000 in sales in 1987 to nearly \$9.5 million in 1991. The company operates in 20 cities in 12 states in the U.S.

Utah Resident Cited For Death of His Lawn

Homeowners in the West are generally chastised for a green lawn, but one couple from South Salt Lake, Utah, was recently cited for failing to maintain their landscape.

Apparently, the lawn turn brown after the couple errantly applied an insecticide to the turf. But when the homeowner joked that he let the lawn go brown in protest of water rates, the city issued the citation.

"Had he quit watering his lawn because of the drought, nobody would have bothered with it," said the city's attorney. "But the reports say he killed his lawn in protest of a high water bill. There are two sides to this story."

Turfgrass Course Offered at MSU

The Michigan State University Turfgrass Science program is offering an in-depth, one week seminar on the basics of turfgrass management.

The seminar will be held Dec. 7-11 at the Kellogg Biological Research Station near Kalamazoo, Mich. For more information call Tim Doppel, 313/939-3636.

Culpepper: Successes, Hurdles In Store for Specialty Pesticide Industry

BUILDING DIALOGUE with key legislators, promoting the benefits of specialty pesticides and dealing effectively with public perception were three challenges presented to the 150 or so participants of the second annual conference of the Responsible Industry for a Sound Environment held in Washington, D.C.

And despite increased government regulation, specialty pesticides and users of these products have a seemingly bright future.

"The long-term perspective (for the specialty pesticide industry) is good," said Bill Culpepper, RISE chairman and a specialty products director at DowElanco. "We're in a solid position for growth in the decade of the 90s. The baby boomers are all grown up, gardening is a major hobby of the baby boomers and there is a national trend for more trees, flowers and turf. I think we'll view the 90s as a time when the industry grew and enjoyed good times."



RISE Chairman Bill Culpepper presents remarks during lunch.

And accomplishing this prosperity takes education of the benefits of specialty pesticides, not only to customers and potential customers, but to legislators; a task, perhaps, more important now than at any other time.

While 1991 and 1992 represented a time in which legislation was moved at a lackluster pace, next year promises to be different with 150 to 185 new members in Congress. With the new cast of players on Capitol Hill, it's predicted that plenty of environmental legislation will be discussed and passed in 1993.

The government issues committee of RISE hopes to establish subcommittees in the South and the West to deal with increasing legislative activity. Posting, notification and chemical sensitivity registries are just a few of the challenges facing specialty pesticide users in these areas and across the country.

Local preemption, a key issue to the specialty pesticide industry, has been met with much success this year. The CSPP, a coalition of pesticide manufacturers and users, has been able to modify or defeat, in many cases, local attempts to restrict pesticide usage. Missoula, Montana, is the most visible such case in which organized support against proposed legislation was soundly defeated.

Dealing with public perception of specialty pesticides needs a decidedly different tact.

"We tend to talk in scientific terms rather than terms the customer can relate to," Culpepper said. "They don't have the tools to understand and ask questions. We need to stay true to the science of our products and position ourselves as the people with the answers. "Specialty pesticides are second only to the pharmaceutical industry in regulation."

Risk, or perceived risk, when dealing with pesticides was put into perspective by John Stossel,

(continued on page 15)

PLCAA Offers Home Training for Technicians

The University of Georgia, in conjunction with the Professional Lawn Care Association of America is developing a new comprehensive home-study course on the management and care of turfgrass.

Titled, "Principles of Turfgrass Management," the correspondence course will be available in early 1993.

Planned curriculum includes: turfgrass growth and development, soils, establishment, fertilization, irrigation, mowing and the control of turfgrass weeds, insects and

diseases. A portion of the course will deal with management practices used for alleviating environmental stresses such as high and low temperatures, drought and shade.

Other areas of interest include pesticide use, regulations and safety as well as integrated pest management.

Lawn care technicians who complete the course will be recognized as Certified Turfgrass Professionals by the PLCAA. The association is pursuing further recognition by states; possibly allowing for recertification credits, said Tom Delaney, PLCAA government affairs director.

(continued on page 13)

The course is authored by Dr. Keith Karnok, an associate professor of agronomy at the University of Georgia. The course is about 150 to 200 hours long. The final exam is proctored by a prearranged group or agency in the hometown of the student. The price has yet to be determined.

The correspondence course complements the video training series PLCAA is producing in conjunction with the Responsible Industry for a Sound Environment. The videos should be available at the Green Industry Expo in mid-November.

EPA Establishes Worker Protection Standards

The Environmental Protection Agency implemented new steps to protect most agricultural workers -- including those employed by nurseries, greenhouses and forestries -- from occupational exposure to pesticides.

The standards, first proposed in 1988, will affect 3.9 million people whose jobs involve exposure to pesticides.

Among the new provisions, the revised Worker Protection Standard for Agricultural Pesticides requires employers to provide handlers and workers with ample water,

soap and towels for washing and decontamination, and that emergency transportation be made available in the event of a pesticide poisoning or injury.

The rule also requires personal protection equipment for all pesticides used on farms, forests, greenhouses and nurseries; requires employers to inform workers and handlers about pesticide hazards through safety training; requires that handlers have easy access to pesticide label safety information; and that a listing of pesticide treatments is centrally located in the facility.

Label changes are expected to be phased in between April 1993 and April 1994.

RAC Offers New Leasing Program

Ransomes America Credit Corp., a financial services company designed to provide new leasing programs for Ransomes' product lines, was formed by Ransomes America Corp.

The new leasing program was established to provide flexible financing options and competitive interest rates to customers. Ransomes, Cushman, Ryan, Supreme and Steiner products are all available for lease.

For customer convenience, the firm is also offering a distributor/dealer hotline, application fax line, 72-hour application feedback (in most cases) and programs designed on an individual basis with the assistance of a marketing specialist.

Resident Notification Gets Nod in Ohio Burb

Residents of Stow, Ohio, will be required to notify abutting property owners before applying pesticides to lawns. The Stow City Council unanimously passed the lawn chemical notification ordinance. It is believed to be the first such law in Ohio.

The ordinance would require users to provide notice, to those requesting it 24 hours prior to the application, including the names of the applicable products. Additionally, a 4 by 5 sign reading "Lawn Chemicals in Use," must be placed in a conspicuous location.

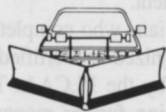
Other than complaints from neighbors, the city has no planned method of enforcing the ordinance. A first offense is a minor misdemeanor carrying a \$100 fine. Second offenses are 4th degree misdemeanors carrying a fine and possible 30-day jail term.

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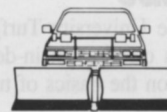
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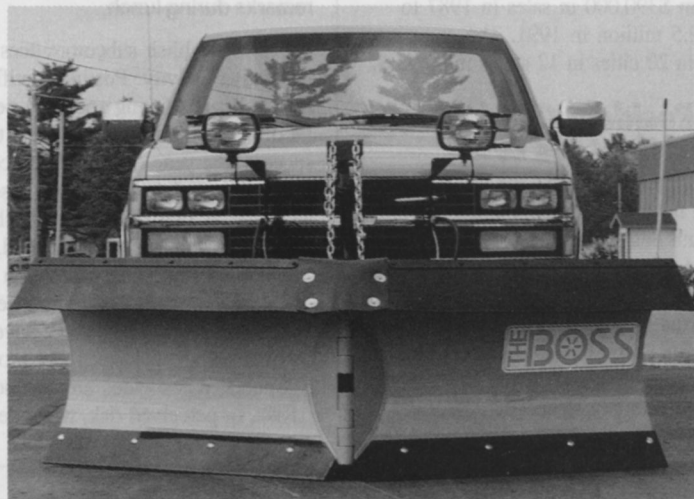
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USE READER SERVICE #19

News

(continued from page 13)

ABC news correspondent for 20/20 and banquet speaker at the conference.

In a talk ranging from the risk of taking aspirin to driving a car to being exposed to pesticides, Stossel attempted to put risk in perspective. "We can protect people from themselves with laws, but where do you draw the line?" he asked the crowd.

Stossel recommended that those involved in manufacturing and/or using specialty pesticides to be open to the media rather than hiding from it. "When talking to the media, if you're passionate about something, it comes across in the broadcast."

FUTURE COURSE. Despite citing increased difficulty in doing business, slowing of real growth and maturity of product categories, the specialty pesticide industry remains strong and viable, according to Julia Hodge, project manager, agribusiness, Kline & Co. Hodge presented a statistical update on the use of specialty products in a variety of markets during the conference's general session.

Broadly speaking, the U.S. pesticide market is divided between agriculture, a \$4.9 billion a year industry; professionals, a \$1.1 billion a year industry; and consumers, also a \$1.1 billion a year industry.

Hodge described the professional market as being fairly well defined with multiple sets of primary customers. Customers of professional services are defined but hard to locate, and have variable levels of product knowledge and product consumption.

Other areas of business discussion included biopesticide advances, an area rapidly expanding; container management issues; risk management issues and cost of regulation; herbicide use in the management of rights-of-way; and analyses of insecticide benefits.

Acceptance of RISE has grown dramatically in two years. RISE now has 78 members, nearly 30 more than one year ago. Membership comprises 18 basic manufacturers, 15 formulators, 16 distributors and 29 associate members. RISE hopes to climb over the 100 member mark in 1993.

New RISE officers for 1992-93 are: Peter Machin of The Andersons, chairman; Charles Nash of ICI Americas, vice chairman; and Scott Johnson of Rhone-Poulenc, treasurer.

Isuzu Offers 24-Hour Roadside Assistance

Emergency roadside assistance for drivers of 1993 model Isuzu trucks is now available.

Isuzu Truck of America has developed

CARE, a Comprehensive Assistance for Roadside Emergencies program for eligible vehicles. CARE provides immediate help 24 hours a day, 365 days a year by dialing a toll-free number. The call, answered in two rings, brings immediate response by a trained service adviser who can dispatch a tow truck for roadside re-pairs or transport to the nearest Isuzu truck dealer for service.

There is no cost for CARE while the truck is under the Isuzu three-year warranty. The number is 800/964-4478.

Gravelly Manufacturing Moves to Wisconsin

Gravelly's manufacturing operations in Clemmons, N.C., will be consolidated into the Ariens facilities in Brillion, Wis., by year-end. Gravelly has been a wholly-owned subsidiary of Ariens since 1982. Sales, marketing and customer support services will remain in Clemmons.

The move stems from Ariens' need to reduce overall marketing costs, and to take advantage of facilities in Brillion. ■



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Association News

THE AMERICAN SOCIETY of Landscape Architects is teaming up with the Smithsonian Institution and members of Congress to bring a national and international perspective to ASLA members and the public, Nov. 7-10.

Albert Gore Jr., D-Tenn., environmental advocate and now vice presidential candidate, has been elected to receive ASLA's Olmsted Medal, and will give the keynote speech at ASLA's annual meeting.

Gore will address the Society and accept the award Nov. 10 at the Grand Hyatt Hotel in Washington, D.C. ASLA's highest award to a non-landscape architect, the Olmsted Medal is given in recognition of Gore's efforts to make environmental issues the central organizing principle of economics and politics around the world.

In his speech, Gore will outline the policies and programs he believes to be critical to our future, and suggest the roles landscape architects and others will play as professionals and citizens. Previous Olmsted Medal winners include The Nature Conservancy and William Reilly, head of the Environmental Protection Agency.

For more information...



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Three public forums titled "The Fractious Landscape of Washington, D.C." will be moderated by Roger Lewis, urban design critic for *The Washington Post*, and include discussions of the Washington Monuments, Edge Cities (suburban development) and the Redevelopment of Pennsylvania Avenue.

Lawn care professionals interested in forming a state or regional association are invited to attend the Allied Regional

Association meeting of the **Professional Lawn Care Association of America**, Nov. 18 in Indianapolis.

Attendees will hear from experts in the fields of public relations and legislation, and learn how to implement a successful public relations program as well as receive guidance on introducing and passing pre-emption legislation in their state.

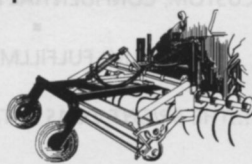
According to Ed McGuire, PLCAA's ARA committee chair, the meeting will be a hands-on, interactive learning experience



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USE READER SERVICE #22

for attendees. In addition to learning from the experts, they can learn from each other by sharing their experiences in dealing with the issues.

The meeting is part of PLCAA's continuing effort to solidify its relationship with its Allied Regional Associations.

The meeting is one of many activities planned for PLCAA's 13th Annual Conference. The conference will be held at the Indiana Convention Center, Nov. 16-19 in conjunction with the Green Industry Expo. Separate registration is required for the meeting. Attendance is limited to two representatives per organization.

Tommy Lasorda, Los Angeles Dodgers manager, is the keynote speaker for the Turf & Grounds Exposition, Nov. 10-13. The conference is sponsored by the **New York State Turfgrass Association**.

Additionally, the conference will offer concurrent sessions geared to lawn and landscape contractors, athletic field personnel and golf course superintendents. A business management track featuring Charles Vander Kooi and a special session on irrigation are new this year.

Five one-day seminars include: Ornamentals, Site Assessment and Early

Maintenance; Turfgrass Management: Back to Basics; IPM Program Implementation; Irrigation and System Design: How Each is Changing; and a GCSAA Seminar, Developing Your Hazard Communication program.

Among the other speakers are nationally renowned turfgrass specialists from Cornell University and researchers from Massachusetts, Rutgers, Penn State, Michigan State and Ohio State universities.

More than 300 exhibitors will be on hand.

Pesticide recertification credits from Vermont and New York state are available. Continuing education units from the GCSAA, the New York State Recreation and Park Society and the Professional Grounds Management Society are awarded.

The Landscape and Grounds Maintenance Conference held in conjunction with the Green Industry Expo and sponsored by the **Associated Landscape Contractors of America** is introducing a new program, "Ask the Experts."

The new feature brings together a panel of successful landscape leaders to help contractors strengthen their business skills and increase profits. Richard Akerman,

Northwest Landscape Industries; Sally Kujawa, Kujawa Enterprises, Tom Lied, Lied's Nursery Co.; Landon Reeve, Chapel Valley Landscape Co.; and Frank Ross, Ross-Payne & Associates will make up the panel.

The landscape and grounds maintenance conference will also include the popular "Breakfast of Champions," as well as a variety of other business seminars including "Developing New Profit Centers," "Maintaining Profits in a Competitive Market" and "Sales Presentations With Sizzle."

The Grounds Management Conference held in conjunction with the Green Industry Expo and sponsored by the **Professional Grounds Management Society** is offering a variety of seminars for conference attendees.

Each morning will start with a "Winners Circle Breakfast," designed to promote roundtable discussion about a variety of business topics. In addition, attendees can participate in educational sessions on "Middle Management Training," Maintenance and Repairs of Asphalt," "Doing More with Less" and "Stress Management for Trees." The Green Industry Expo is also open to all conference attendees. ■



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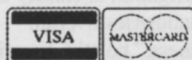
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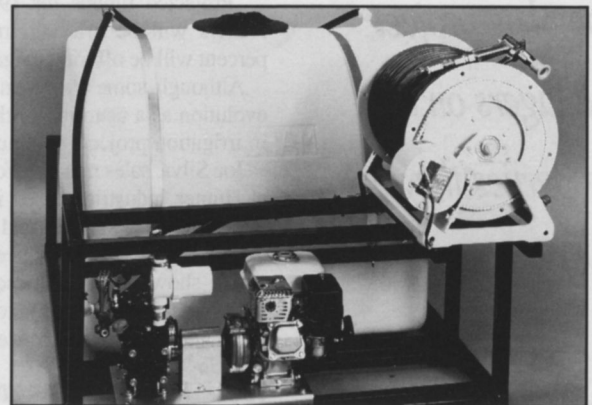


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USE READER SERVICE #24

The Irrigation Evolution

Landscape and irrigation go hand in hand, and forward-thinking landscape contractors are becoming complete project managers on the properties they oversee.

By Bob Gitlin

"YOU BROKE MY sprinkler line."

"That's because you didn't bury it deep enough."

Sound familiar? It might, if you're a landscaper whose crews are trying to wend their way around bulldozers and pipe installers from another company. When separate contractors are hired to do landscaping and irrigation, they often work at cross purposes, and a lot of finger pointing results.

That's one reason more and more lawn and landscape professionals have decided to do both jobs themselves. In recent surveys conducted by *Lawn & Landscape Maintenance* magazine, irrigation installation and maintenance were reported to be two of the fastest growing service offerings among landscape contractors.

In 1990, 14 percent of *LLM* readers were offering irrigation installation and 16 percent were offering irrigation maintenance. Those percentages jumped to 24 percent and 29 percent, respectively, in 1991 and again to 34 percent and 39 percent, respectively, this year.

Projected figures for 1993 indicate that 44 percent of *LLM* readers will be offering irrigation installation services and 51 percent will be offering irrigation maintenance.

Although some irrigation contractors may view the irrigation evolution as a usurping of their business, landscaper involvement in irrigation projects continues to grow.

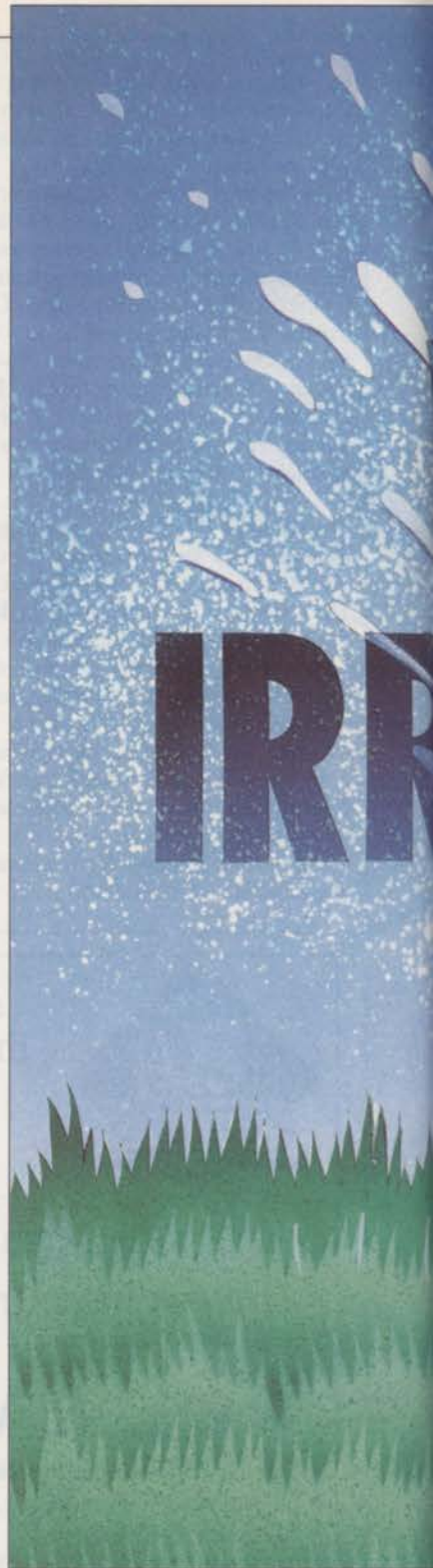
Joe Silva, sales manager for residential and commercial products at Hunter Industries based in San Marcos, Calif., comes from a landscaping background and has watched the trend with an expert's understanding. The presence of landscape architects directing the whole show — both landscaping and irrigating — has made it possible for landscapers to get successfully involved in both installation and maintenance of watering systems, he said.

SUCCESS MEETS INTEGRATION. Taking over irrigation responsibilities not only avoids controversy between landscaping and irrigating crews but enables large, forward-thinking landscape contractors to impress clients with their ability to do it all.

"There's a comfort level among customers that comes with knowing the installer is also the maintainer," Silva said.

According to Charles "Pepper" Putnam, executive director of the Irrigation Association, the explosion in irrigation work enjoyed by the lawn and landscape industry was at its greatest from about 1975 to 1985. Involvement of landscapers in irrigation is closely tied to the prospects of the turf and landscape industries overall.

"Theirs is a construction-sensitive business," he said. Erection of new houses and commercial properties is tied to landscape projects — and to allied irrigation work.



Diversification has created a movement in the lawn and landscape maintenance industry in which contractors not only replace sprinkler heads, but manage entire irrigation systems. The trend is expected to continue throughout the 1990s.



WHO'S IRRIGATING?

The economy has slowed irrigation projects, Putnam said. He added, however, that 1992 has not been as bad a year for irrigation as many economists predicted.

Influencing the involvement of lawn and landscape professionals in irrigation are concerns, sharper in some areas of the country than in others, about water conservation.

The work being done in California and Florida — which, for

different reasons, both suffer drought worries — equals that of the rest of the country combined, as of now. Much of the problem in California is simple inability to store what rain does arrive, Putnam said. Construction of facilities to correct this problem would require increased taxation.

In Florida, property owners close to the aquifer have built

wells to draw their own water, but saltwater intrusion has occurred, and these well owners have been forced to draw once again on the potable water supply, causing that state's water shortage despite a more than adequate rainfall.

Bob Dobson, an irrigation contractor who owns Middletown Sprinkler, Port Monmouth, N.J., said that, in a sense, California has it easier than the Northeast.

“Out there, they at least appreciate the value of irrigation. But out here, as soon as there's a little water shortage, boom, they cut off water to irrigation projects, which are viewed as the worst culprits.”

Indeed, in a certain sense the whole United States has become more conscious of water conservation, especially insofar as the landscape industry is viewed.

“The landscape industry takes it first when there's a drought,” Putnam said. “Although only 4 percent of the water sales to an area go to landscape users, a full 30 percent to 40 percent of a single residence's water consumption is accounted for by the lawn and landscape.”

LEARNING CURVE. Education is the key issue, he said. Not only do landscapers contemplating involvement in irrigation need to seek out proper training (including formal college offerings), but they need to train their customers — particularly homeowners — to be familiar with the rudimentary workings of the irrigation system, and with basic water conservation techniques. Some of the heat can thereby be deflected from the contractor.

Pam Sandlin, manager of the irrigation division at Marvin's Garden & Landscape, Sarasota, Fla., said the recession has caused her to slack off of new-installation work, but has opened up a market for irrigation maintenance upgrades. Major projects include shopping centers, a school and other residential and commercial sites.

“We do a lot of upgrading of existing irrigation systems for homes that are being remodeled,” she said. “I'd like to specialize in large residential homes, but right now, with the economy the way it is, we're not too selective.”

The big buzzword in irrigation is drip. But there are many falsehoods surrounding this low-volume irrigation technique.

“Drip is good for discreet watering,” Silva said, “such as at the base of a bush where you would put one emitter. It's also good for weed

Upgrading established irrigation systems is one way around the slowdown brought on by the uncertain economy. Photo: Hardie Irrigation

control. But a lot of foliage requires overhead spraying to survive."

The main falsehood surrounding drip irrigation is that it doesn't require much maintenance.

"There's plenty of maintenance required," he said. "I've got two drips and four overhead sprinklers at my house. Those small filter screens need to be cleaned on drip systems. Also, you need to flush the devices to make sure contaminants stay away. Drip systems are fragile."

Complaints run rampant about drip systems plugging up. "If properly maintained, they never would," Silva said. "The wrong filter may be in the line. Or maybe a bug climbed up into the emitter, went inside and the water got turned on and the bug died, rotted and clogged the works."

Landscapers who have gotten involved in irrigation successfully



have had to learn the language, and the challenges, of prudent water use. Despite these educational

responsibilities, and the attendant political situations in respective municipalities or states, it's a good

fit. After all, the landscape crews are there on a regular basis to oversee maintenance concerns.

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"Landscape and irrigation go hand in hand," Sandlin said. "We know the heads are adjusted and installed correctly per plant needs, not to mention that a lot of people like having one contractor taking care of their lawn."

But irrigation must be handled as an entirely separate business from landscaping, she said. "A lot of people take irrigation installation lightly, as though it's a tinker toy. You have to know how to size pipe properly, and follow the other dictates of xeriscape."

LOW VOLUME. Xeriscape is "dry landscaping," with minimal water usage. Normally it entails a reduction of turf area.

"The xeriscape movement sweeping the nation boils down to appropriate horticultural practices," said Don Clark, product manager for Rain Bird, Glendora, Calif. "Shrubs are beginning to have more aesthetic appeal as landscapers become more adept at caring for them. A tough economy and increasing land prices are shrinking the size of irrigated landscapes."

Though slowed by the economy, landscapers are showing quickening interest in low-volume systems. Manufacturers have scrambled to answer those demands, after a long period of disinterest in what was traditionally considered a tough sell.

"Until recently," Clark said, "major manufacturers did not get involved extensively in turf drip. We didn't want to sell drip because there wasn't as much money to be made. Now we're being forced to by legislation and the overall cost of water."

Pacific Green Landscape, Lakeside, Calif., does maintenance on irrigation previously installed, commonly retrofitting turfs and landscaped areas with drip emitters that conserve water.

"Maintenance of irrigation systems in California is right up there with mowing," said Andy Kelly, maintenance superintendent at Pacific Green. "We have three people just doing clock, valve and mainline repairs. All of our 22 crews do lateral repairs. We bill a lot of irrigation maintenance."

Older projects with poor installations have created another upgrade area; many of these retrofits are for manual systems that need to be automated, replacing old brass with new plastic products.

In California, where next year a new state law, AB.325, will mandate strict water regulation measures, owning a big lawn has become almost a stigma.

The smart California contractor getting involved in irrigation sells water-conservation aptitude. Kelly cites accounts on which he's cut water use by as much as 50 percent.

"Conserving water can include eliminating turf areas, splitting planters from lawns, putting in controllers to measure saturation and selecting drought-tolerant plants," he said

"You have to group together, and valve together, plants that have similar water-use characteristics," said Putnam. "Learn how to establish hydrozones."

Once upon a time, Kelly said, people soaked an entire lawn to correct for a brown spot on the sunny half; now, more customers

pay to upgrade irrigation to selectively water." You're looking, on some properties, at tens of thousands of dollars to make things right," he said.

Landscape involvement in irrigation projects will involve more tough learning curve in California after the new law.

"New projects coming on line will have to meet certain uniformity and efficiency requirements, or they won't be irrigated," Kelly said. "If you've got the plants in the ground but your system isn't good enough—the installer placed the heads at the wrong spacing, or used the wrong gallonage or simply screwed the whole thing up—it's not going to be turned on. You can't just slap some PVC together and run some water through it."

The law will demand products to correct runoff and overspray, increasing the demand for rain switches and moisture sensing devices, said Jim Wright, product manager at Toro Irrigation, Riverside, Calif.

"More landscapers are becoming

(continued on page 60)

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How Much Are You Worth?

Salaries, bonuses and benefits play a role in the long-term health and welfare of employees. Find out how your company compares.

By Lynn Novelli

WHAT IS A competitive wage? How much is a good worker worth? In the narrow margin, labor-intensive lawn and landscape maintenance industry, the answers can mean the difference between a good year and a poor one.

Each year, *Lawn & Landscape Maintenance* offers a perspective on these questions by tracking compensation trends in the industry. This year's information gathering was done by means of an informal telephone survey of con-

tractors around the country. Although the sample size was not large enough to be statistically reliable, LLM's results, presented here, offer some insights into current thinking on compensation.

Regardless of geographic region, landscape maintenance and construction contractors acknowledge the self-imposed lack of information on salaries and benefits. "Not much knowledge exists in the industry about who pays what because of the number of

small, private companies," said Bob Andrews, president, The Greenskeeper, Carmel, Ind. "In our case, what the market will bear determines wage scales."

Many contractors share Andrews' approach to setting wages, and the outcome is an interesting study in economics. Whatever the behind-the-scenes dynamics of supply and demand, wages in each market tend to seek an equilibrium, with no one far off the scale at either end.

COSTLY COASTS. Leading the pack again this year in labor costs are the Northeast and the Washington/Baltimore corridor. Here, average entry-level wage for laborers is \$7 to \$9 per hour, jumping to \$10 to \$12 for experienced field people.

Depending on company size, supervisors earn as much as \$40,000 plus bonuses. The largest commercial landscape management companies, with sales of more than \$10 million and multi-level management structures, pay as much as \$50,000 plus bonuses for managers beyond the supervisor level.

Everything related to labor costs is more expensive in these two markets, noted Russ Frith, president, Lawn Doctor, Matawan, N.J.

"We are a franchise company and don't control individual pay scales, but of the 31 states in which we do business, the Northeast and Washington/Baltimore areas are on the high end," he said. "Not only are wages higher, but insurance coverage runs as much as 30 to 40 percent of salaries."

CONTROLLING OVERTIME COSTS

MENTION OVERTIME to almost any landscape contractor and the reaction generally ranges from mild dislike to outright hatred.

Most firms recognize overtime as a necessary evil in some form, and during certain seasons of the business. Still, companies large and small expend considerable effort on strategies for minimizing overtime's impact on the bottom line. Here are the tools and techniques most frequently mentioned by readers of LLM as effective overtime-busters:

Personal computers (PCs): Recommended by companies from under \$1 million to more than \$16 million in volume, PCs allow effective job and labor scheduling and tracking of labor reports. Using PCs, management can keep close tabs on how close to budget the overtime figures are running, said Joel Garratt, vice president, Rupert Landscape, Ashton, Md.

Staggered work weeks: An effective tool for companies large enough to have multiple labor crews. Half the crews are scheduled for Tuesday through Friday, half for Monday through Thursday.

Four-day work week: All crews are scheduled for 40 hours, Monday through Thursday. If a holiday or rain day interferes with the schedule, the week's work is moved back by a day.

"Overtime for foremen runs one to two hours a week, but we have

very little from the laborers," said Eldon Dyk, vice president of maintenance, Allen Keesen Landscape, Denver, Colo.

Employee involvement: A strategy that can be combined with any of the others. At Allen Keesen Landscape, every crew is assigned a budget based on a 40-hour week. Staying on budget is the responsibility of the crew foreman and supervisor.

Reassign people: Companies large enough to have several divisions or branches can avoid overtime by effectively using their workforce. At Perma Green, in Boise, Idaho, when one branch has an overtime situation, employees from other, slower branches are temporarily reassigned to assist with the backlog.

"Overtime generates a morale problem, so we try to minimize it," according to Ron Hutt, director of landscape services. "We try to add people from other branches instead."

Use overtime as a management tool: Russ Frith, president, Lawn Doctor, Matawan, N.J., believes overtime, effectively used, can be a cost-saving management strategy. "Using a current employee in an overtime situation can help avoid the need for hiring and training another employee," he said. The additional labor costs are then made up for by being able to amortize equipment over a longer work week.

The West checks in with labor rates not far behind the East Coast's. Contractors in LLM's survey reported starting wages for laborers of \$6 to \$6.50 an hour throughout the western, northwestern and west coast states. Hourly wages for foremen range from a low of \$7 to a high of \$14, with supervisors earning an average of \$16 to \$20 an hour.

Environmental Care, a \$60 million landscape maintenance firm based in Calabasas, Calif., operates in six states, giving president Bruce Wilson a better-than-average feel for regional wage differentials.

"Of the states we operate in, labor costs are highest in California, with Texas, Colorado and Arizona lowest, and Florida and Nevada somewhere in the middle," he said.

MODERATE MIDWEST. LLM's results lined up with Wilson's assessment, finding the lowest labor costs in the Southwestern states. Here, laborers top out at \$5.50 an hour, foremen at an hourly wage of \$8 and supervisors at \$16 an hour.

For middle-of-the road wages and salary levels, look to the Midwest and the Southeast. Pay scales in both these regions were similar in LLM's survey, with laborers generally starting at \$5.50 an hour, and experienced workers earning up to \$7.50 hourly. Differences in wage scales between these two regions and other markets are most evident at the technician, foreman and supervisory levels. The typical wage for an experienced technician in the Midwest and Southeast ranges from \$8 to \$10 an hour, with foremen and supervisors earning between \$10 and \$14 an hour.

Two of the most challenging cities in which to do business are Las Vegas and Reno, Nevada, according to contractors who operate there. "It's a migrant workforce with a different attitude," explained Ron Hutt, director, land-



scape services, for Perma Green in Boise, Idaho.

Nevada, one of four states in which this \$5 million lawn care company works, presents some unique obstacles in retaining workers, according to Hutt. "Even paying a premium of 75 cents an hour over wages in other cities, turnover is still greater," he said. "A new hotel or casino opens, and we lose half our workforce."

For an overview of how the regional figures in LLM's survey stack up against national averages, take a look at Table 1. This chart shows the national averages for laborers, technicians, foremen and superintendents from ALCA's 1992 Landscape Industry Wage and Benefit study. ALCA's results are based on responses from 700 landscape management and maintenance companies across the country.

RAISES? Despite the nation's recession-resistant economy over the last two years, many companies in LLM's survey reported salary increases of 5 percent to 6 percent or more in 1991 and 1992. Companies in the Northwest, a region which historically tends to be re-

cession-resistant, are particularly strong. "Our increases are on a scheduled basis and have been averaging about 6 percent," Hutt said.

Meanwhile, in the recession-plagued Midwest and Northeast, several companies reported that wages have been flat or frozen for the past few years, a trend they hope to see reversed in 1993. At Lawn Doctor, wages have remained relatively flat, Frith said adding, "The days of the 8 and 10 percent increases are done."

Being competitive in wages and raises is important in attracting and retaining quality employees, said Laurie Broccoli, owner and president of three-year-old Broccoli Tree and Lawn Care, Henrietta, N.Y. "Salary is not the place to cut corners," she stressed. "I am hoping to attract long-term employees, and I believe that when you reward employees, they do better."

BENEFITS VARY. Although Broccoli, with her company's annual sales at \$250,000, does not yet feel financially able to offer her employees benefits, she is already contemplating making a move in

Pay scales vary widely based on region of the country and job title and function. Photo: Mickey Jones

that direction. A strong benefits package can be equally as important as pay in attracting and retaining good employees, she said. The dilemma, she added, is deciding who is eligible and how much employee participation should be required.

The scope of the benefits packages among firms in LLM's survey was related more to company size than geographic region, but reflects the dilemma Broccoli expressed. The variety of benefit packages and employee participation levels is almost endless, ranging from complete company-paid plans to no plan.

All of Environmental Care's 1,600 employees, for example, are eligible for company-paid health insurance after six months. The company offers a complete benefits package, including up to four weeks of vacation, six holidays and two personal days and a company-matched 401K retirement plan.

Despite the generous compensation, Wilson said, he believes it is the opportunities in the company, not the salary and benefits, that

keeps turnover to a minimum.

"Turnover is highest in the first three to six months; after a year, our retention rate is 70 percent. We provide good training and opportunities, and people see the growth," said Wilson, who was himself originally a spray operator for the firm.

Ruppert Landscape, Inc., a \$16 million maintenance and construction firm headquartered in Ashton, Md., offers benefits similar to Environmental Care's, plus company cars for some levels of management and a bonus program tied to performance against budget. Vice president Joel Garrat's philosophy regarding compensation's role in attracting and keeping good workers is similar to Wilson's.

"Within the industry, we are competitive with salary and benefits," he noted. "But, to keep people, you have to offer teamwork, personal accomplishment and other intangibles."

At the opposite end of the size scale, none of the 50 employees at Ray's Landscaping and Nursery, (continued on page 28)

LANDSCAPE MANAGEMENT CONTRACTORS



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Median Wage	25,300	9.21/hr.	9.18/hr.	9.97/hr.	6.31/hr.
Average Entry Wage	22,400	7.88/hr.	7.76/hr.	8.12/hr.	5.40/hr.
Average High Wage	29,600	10.61/hr.	10.55/hr.	11.49/hr.	7.30/hr.
Vacation Days	9.0	7.4	6.6	7.3	3.3
Holidays	5.7	5.5	5.2	5.9	3.9
Personal Days	2.7	1.6	1.5	1.3	0.6

Table 1. This labor study is available from ALCA; \$25 for members and \$45 for non-members plus \$3 shipping. For more details contact ALCA, 12200 Sunrise Valley Dr., Suite 150, Reston, Va., 33091; 703/620-6363.

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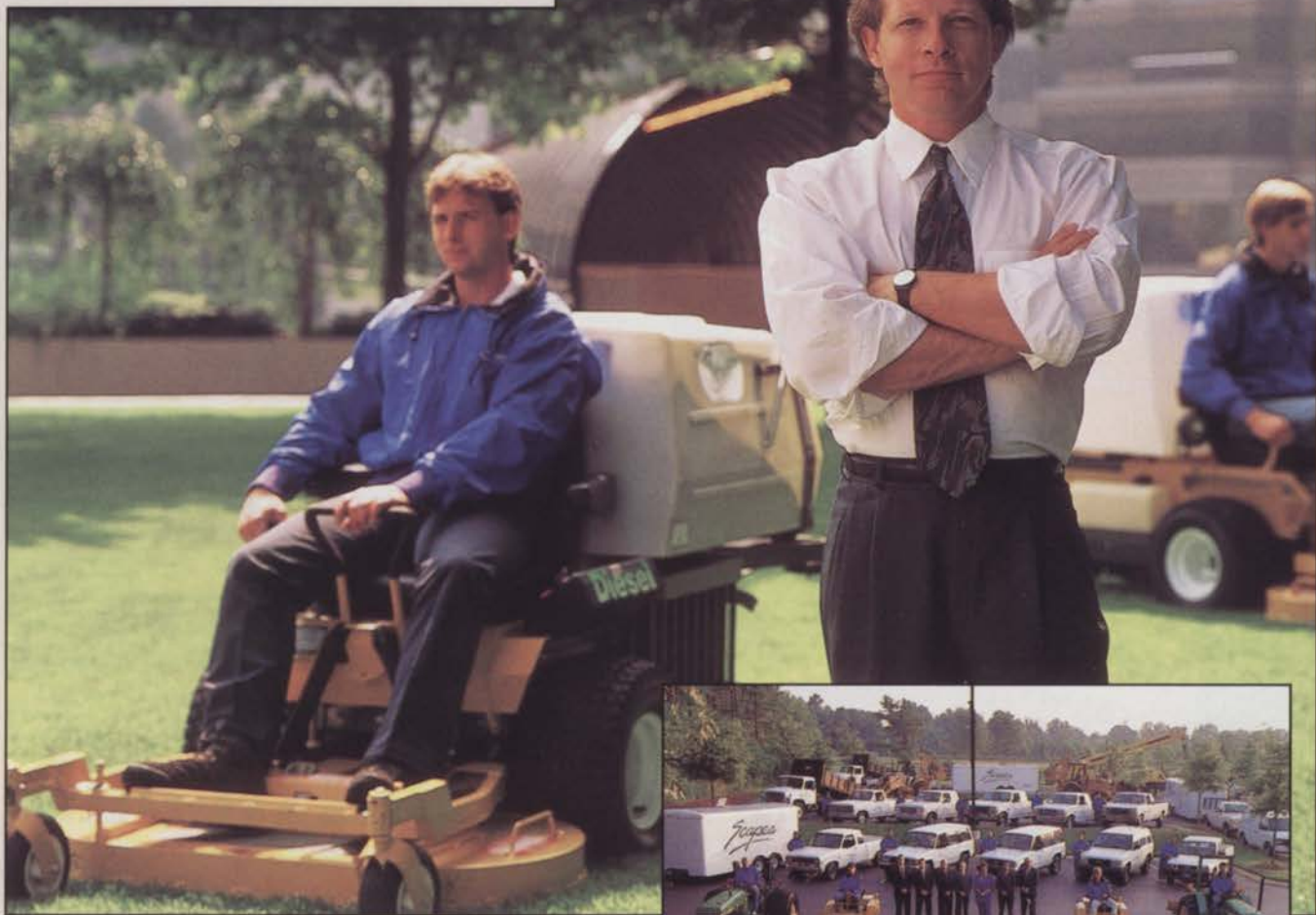
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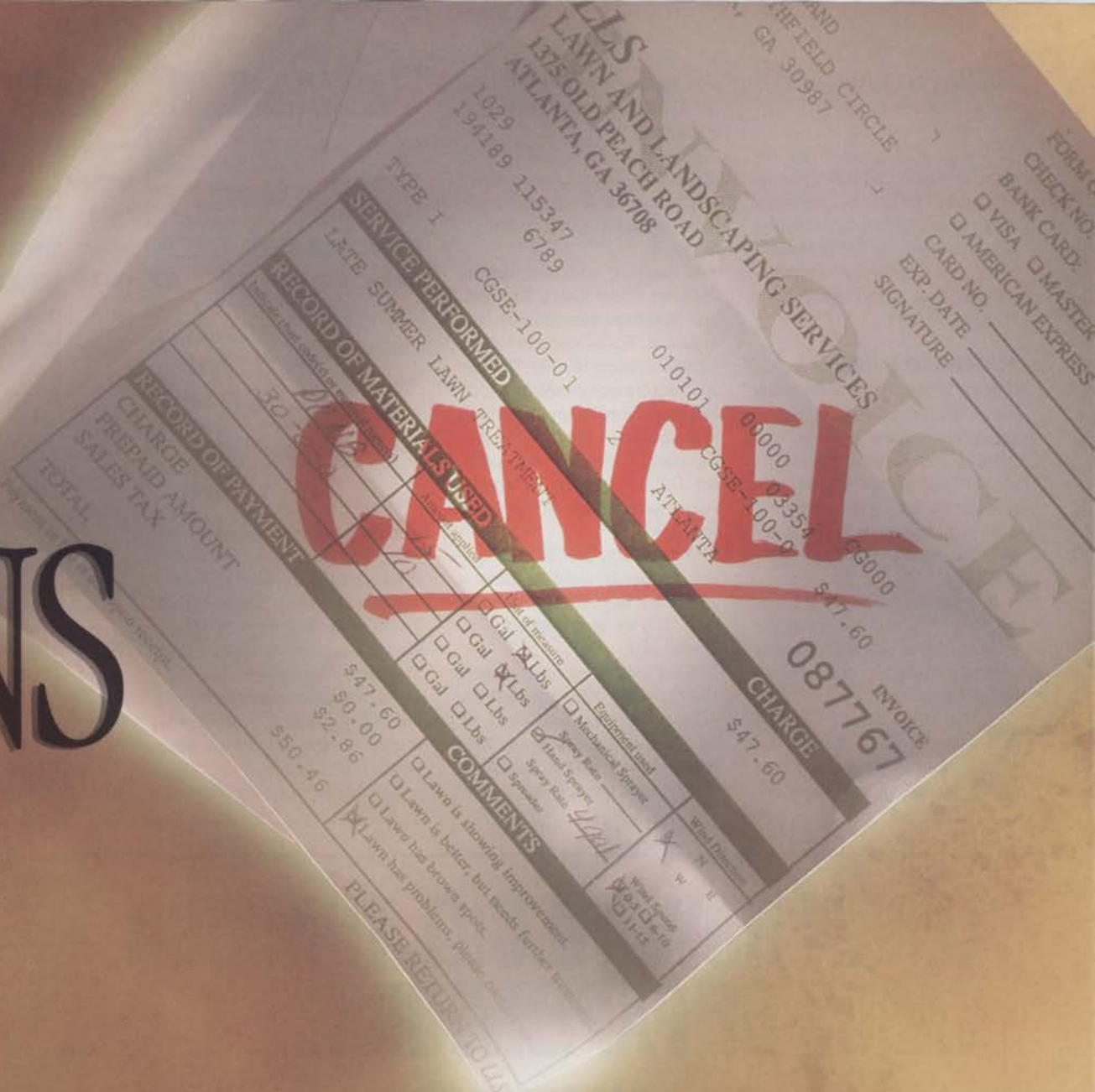
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USE READER SERVICE #10

How Much Are You Worth?

(continued from page 24)

Walled Lake, Mich., receives benefits. In contrast, all full-time employees of The Lawn Company, a similar-sized lawn and tree maintenance company in South Dennis, Mass., are eligible for company-paid medical, dental and disability after 30 days.

PERFORMANCE BONUS. In addition to salaries and benefits, companies of all sizes offer bonus programs as a means to retain employees and increase profitability. Environmental Care and Ruppert Landscape, for example, both offer incentives to supervisors and foremen based on quality and performance.

Ruppert, which lays off about one-third of its workforce in the winter, pays a bonus to laborers who are rehired by the firm the following season.

At The Greenskeeper, certified technicians, field managers and supervisors are eligible for benefits and a performance-based bo-

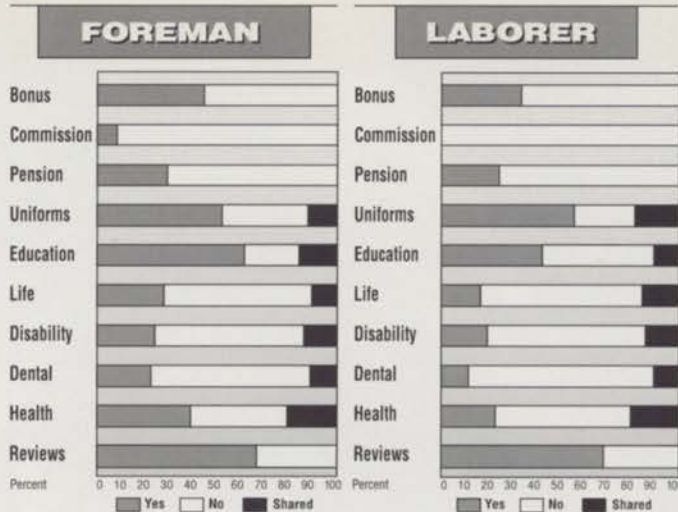
nus. Andrews believes this strategy helps his firm hold onto good employees.

"Trying to keep quality help, particularly trained, experienced technicians, is the biggest single problem faced by the industry," he noted.

In keeping with that line of thinking, Clean Cut, a \$3.5 million landscape maintenance firm in Austin, Texas, instituted a new incentive system in 1991. The plan is a complex one, establishing certain employees as equity partners in the business, but the principle, according to chief executive officer Dennis Dautel, is simple: "Good people who are well paid will stay."

With salary, profits and equities, an equity manager earns a minimum of \$40,000. Beyond that, "It's up to the individual," Dautel said.

What's ahead for contractors in 1993? As the labor pool and the industry continue to contract, look for more companies to use total compensation as a management tool to attract and retain quality



workers, predict a number of industry insiders. Additionally, some firms are offering stock options.

Keep in mind, however, that loyalty works both ways, said Gary Thornton, chief executive officer, Thornton Gardens, Maineville, Ohio. "Paying competitive wages and offering decent benefits represents a commitment to your people," he said.

His philosophy appears to work:

In a tight labor market, benefits can make a difference as suggested by the information in ALCA's wage and benefit study.

Although the company lays off its whole crew in the winter, virtually all of them return for rehire in the spring.

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

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Habla Español?

A NEW WAVE OF Latin American immigrants is surging into the landscape industry, and many employers are welcoming their swelling ranks.

But this rapidly growing labor source is not unique to the landscape industry. Approximately one million immigrants will enter the United States this year — 200,000 of them illegally. Over the past 20 years, Mexico alone has provided nearly a quarter of this total, with Central and South American countries supplying at least another 11 percent.

Although many have settled in Southern California and Texas, Hispanic workers can be found as far east as Maryland and Massachusetts and in as solidly Midwest a place as Ohio or Illinois.

The influx of Hispanic laborers can be traced in part to the Immigration Reform and Control Act of 1986. This act gave amnesty to many illegal immigrants and established permanent residency for approximately 2.5 million people. And many more will follow: The 1990 Immigration Act increased legal immigration by 40 percent. (Political refugees are covered under a separate act).

Despite an American public that grows increasingly nervous about the immigrant influx, the landscape industry is embracing its newfound Hispanic labor pool. Many employers emphatically attest to the strong work ethic these workers bring to their jobs.

Take Yardmaster, a landscape contracting firm based in Painesville, Ohio. According to Rick Colwell, vice president and co-owner, the addition of Hispanic employees within the last two years has reduced turnover at the firm by as much as 50 percent.

As the number of Hispanic laborers in the United States continues to rise, many landscape firms are just now tapping into the previously overlooked labor pool; but issues such as language and cultural differences need to be addressed.

By Julie A. Evans

To compare: Last year, Hispanic employees included less than 5 percent of the Yardmaster work force. At that time, a full-time personnel director was required to

handle never ending problems with turnover.

This year, Hispanic employees make up 15 percent to 20 percent of the total work force, and per-

sonnel requirements have plummeted to just 10 to 15 hours per week — maximum.

"It's not just because of the Hispanics on the work force, it's their presence," Colwell explained. "The other workers realize that if they don't show up, there are more Hispanics available and they'll be readily replaced; whereas in the past, we tolerated and even expected people not to show up to work."

As of midsummer, job applicants were told to look elsewhere. "We've had quite a few people ask for work. We're pretty well set," Colwell said. "We haven't hired anyone in four to five weeks. Last year at this time we were hiring five to 10 people a week."

The Hispanic employees have actually helped recruitment by bringing job-seeking friends and relatives to the firm. Colwell said he paid his employees a bonus of \$25 for each new employee they recruited. The only requirement was that the new employee had to stay with the job for 60 days. The program was a success; one especially industrious Hispanic employee recruited 30 successful new hires.

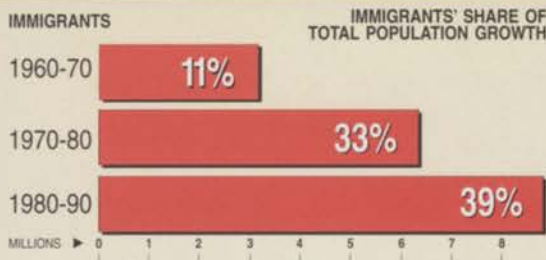
As to whether a language barrier exists, Colwell explained, "It's more disruptive to have an English-speaking person not show up than to have a Spanish-speaking person not understand you."

At Chapel Valley Landscape Co., Woodbine, Md., the percent of Hispanic employees has surged from zero to 41 percent



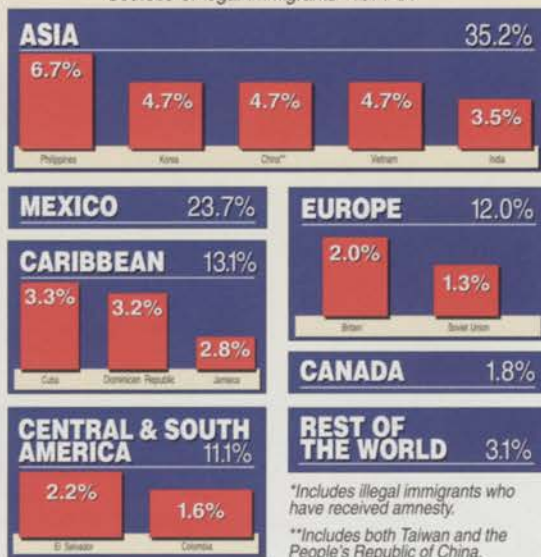
Hispanic workers have been commonplace at Clarence Davids & Co. for several years.

THE IMMIGRANTS



BROKEN DOWN

Sources of legal immigrants* 1971-91



Source: Business Week

since 1986. Landon Reeve, president, said his Hispanic employees hail from diverse backgrounds and have varying motivations for working in the United States.

Workers from Nicaragua and El Salvador, for example, are motivated by political reasons and tend to establish U.S. citizenship. Mexican employees, on the other hand, work in the United States for economic reasons; they typically return to their family and friends in Mexico during the off-season and return in the spring.

Like Colwell, Reeve admires the strong work ethic of his Hispanic employees. "They are steady and conscientious—they couldn't offer more," he said.

"I'm not criticizing Americans at all, but Spanish-speaking workers have different priorities. The U.S. (workers) tends to value leisure time more. The Hispanic (workers) value working hours and demand extra hours."

COMO SE DICE? Language is perhaps the single greatest barrier to upward job mobility for the Spanish-speaking employee.

Without a firm grasp of the English language, most Spanish-speaking laborers find themselves passed over for promotions. According to Terri Feldhaus, interpreter for Chapel Valley, "We emphasize to them (Hispanic employees) that English is the one thing that will be a stopping point if they don't make the effort to become more bilingual. Where there's a will, there's a way."

As interpreter, Feldhaus acts as a liaison between Spanish-speaking crew members and foremen. She intervenes when misunderstandings arise and sometimes interprets meetings between the two parties.

"Because of the language barrier, they can't communicate on the field with the foremen and supervisors. But they can call me at night and say, 'this happened, will you check with my foreman and find out what the situation is.'"

"To The Brickman Group, Long

Grove, Ill., breaking down the language barrier is a two-way street. Indeed, the company provides Spanish- and English-language classes to all interested employees.

Vice President Bruce Hunt learned conversational Spanish because, "it's a sign of respect if you speak Spanish. The company and all of its people try to convey a real respect for the Mexican laborer who works for us. And it's genuine."

Chapel Valley requires its foremen to be proficient in English, and compensates its Hispanic employees who attend weekend language classes. To improve communications, the company also offers Spanish-language classes to non-Hispanic employees.

The spoken language is not the only language barrier. Sometimes the written word can be just as big a roadblock for Spanish-speaking employees.

Understanding employee bene-

fits, for example, is an intimidating experience for one not well-versed in a particular language. Deonne Wollman, human resources manager for Chapel Valley, related some problems with dental insurance the Hispanic workers were experiencing:

"Some were going in and getting periodontal surgery or more than just a checkup. They didn't understand why bills were coming into them for \$200 or more. They thought our company paid all of it. And they didn't understand the concept of a deductible. Or claim forms."

As Feldhaus explained, "It's hard for an English-speaking person to understand what is covered much less a non-English-speaking person."

To simplify the insurance process, paperwork has been simplified and the company now has an HMO with Spanish-speaking doctors. Employees pay a certain amount weekly, depending on the

After bottoming out in the early 1970s, the number of immigrants entering the United States is on the rise and projected to continue its ascent. Among the reasons: The 1990 Immigration Act, in effect this year, increases legal immigration by 40 percent. Immigrants from Latin American countries, especially Mexico, account for a large portion of the total. From 1971 to 1991, Mexican immigrants comprised 23.7 percent of legal immigrants to the United States, according to a recent report in *Business Week*.

number of dependents, then present a card and \$5 at the doctor's office.

JOB CONCERNS. Workers' compensation coverage is one of the biggest concerns of the Spanish-speaking labor pool, according to Phoenix, Ariz.-based Hispanic-rights activist Federico Aguilar. "There are a lot of people working as contractors or doing contractor work without workers' compensation to protect them," he said.

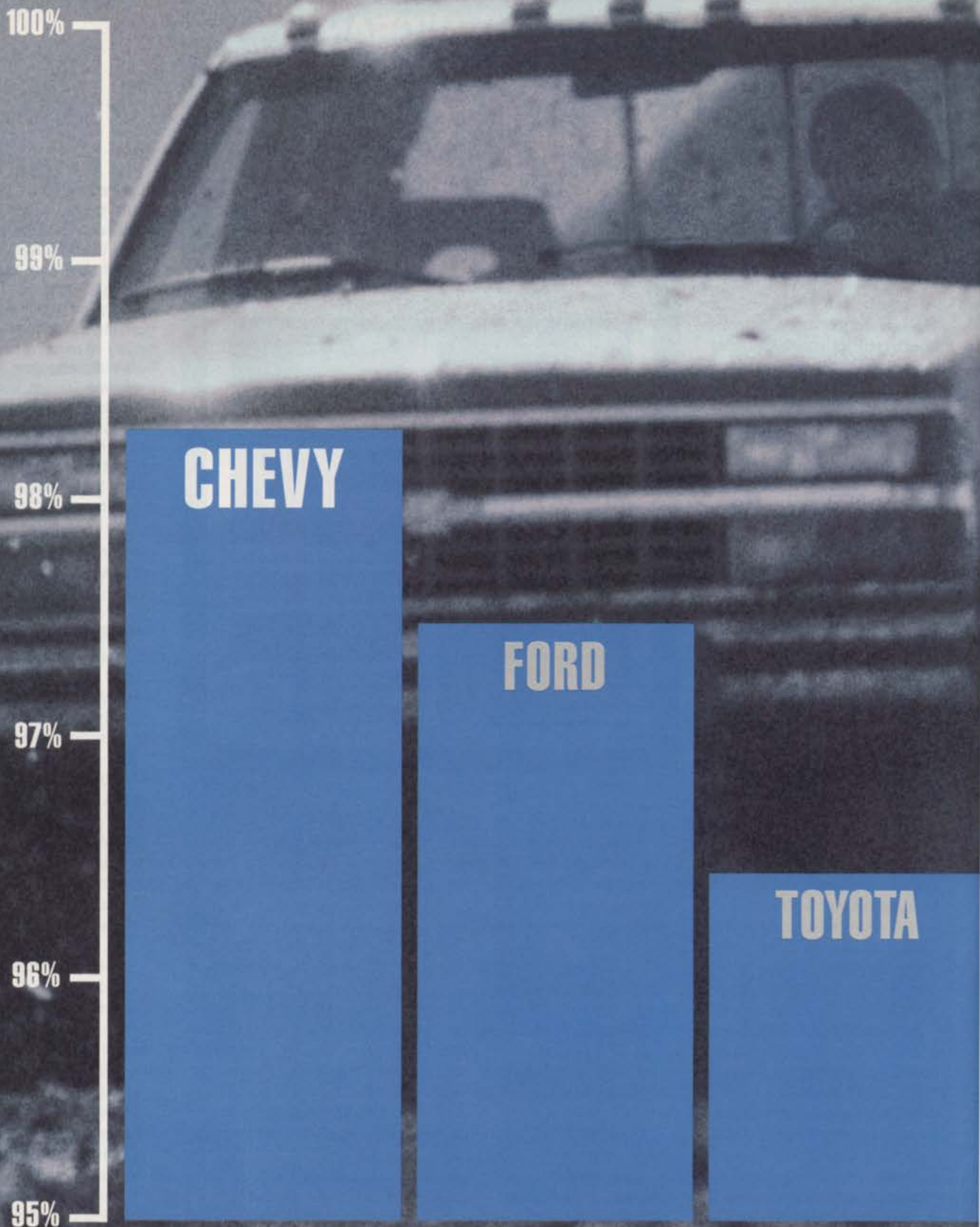
As Aguilar further explained, some unscrupulous landscape firms will hire Hispanic workers, classify them as subcontractors and hand them a 1099 tax form at year-end.

"Most of the time, a lot of the Hispanic workers don't know what their status is, and they don't know they're being treated as subcontractors until they get the 1099 or when they get injured and don't get workers' comp."

Worse, many Hispanic workers won't report accidents when they happen because they fear being blackballed. Whether justified or not, the fear is real and can get in the way of proper attention to their health care.

Hunt acknowledged that there are some "shoddy" contractors who are "not paying overtime and classifying themselves as agricultural even though they're truly landscape firms"; but he added that those contractors are few and far

(continued on page 34)



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NISSAN/DATSUN

Habla Español?

(continued from page 31)

between.

Housing presents another crisis for the hispanic employee. Aguilar said he knows of instances where up to 14 people live in a two-bedroom apartment. "Affordable housing is almost unknown to a lot of these people. Even if it's available, they have to get past the loan application requirements."

Poor housing conditions for Hispanic nursery employees in Painesville, Ohio, led State Attorney General Lee Fisher to set in motion their closing. Working on behalf of the Ohio Department of Health, Fisher is attempting to shut down three unlicensed migrant camps operating illegally.

The structures of the three properties housing approximately 50 males were cited for a variety of health and safety violations, including inadequate sleeping facilities, unsanitary toilet facilities, lack of first aid equipment and accumulation of garbage.

Ohio law defines agricultural

labor camps as "one or more buildings used as temporary living quarters for five or more persons engaged in agriculture or related food processing.

Fisher said Ohio law requires an operating license to run an agricultural labor camp. The camps in question were not complying with the law and were informed of their illegal status. Subsequent checks of the camps revealed they

were still in operation. As of publication, all three cases were assigned to the county court. A hearing is scheduled for Nov. 12 in the Lake County Court of Common Pleas.

Feldhaus explained that although housing conditions are sometimes deplorable, the sad truth is that the conditions are often bet-

ter than what workers are used to in their own countries.

"A lot come from an economical background in their countries that's not affluent. It sounds horrible, but at home, they have no running water or toilets, so to them it's not any different (here)."

Feldhaus tried to shake some of the misconceptions about hispanic laborers.

"If they had any other way to

has to go to support a wife and children.

"Many times we say, 'why can't they have a savings account and a checking account?' Because they live check to check. A lot of what they make gets sent back to their country."

FUTURE PLANS. The influx of Hispanic workers into the landscape industry will continue into the next decade. As a result, employers would be wise to brush up on their Spanish and improve communications if they hope to attract this hard-working group of laborers.

By following the lead of employers like Chapel Valley Landscape Co. and respecting the language and traditions of another cultural group, companies within the lawn and landscape maintenance industry could find themselves fully one step ahead of the hiring game.

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

Language is perhaps the single greatest barrier to upward job mobility for the Spanish-speaking employee.

live they would choose the better way. It's very difficult for American culture to understand what these people are going through. They're in this country because in their countries they couldn't find a job like this. For whatever reason they left their country — here is probably 10 times better. Whatever they make gets split up and

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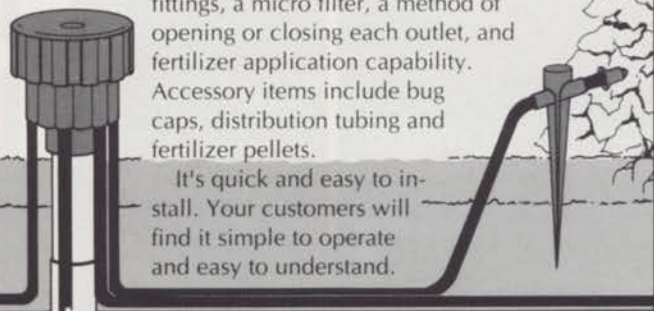
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IRRIGATION
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IN SEARCH OF UNIFORMITY

Poor uniformity is the primary cause of dry and wet areas, high water costs and wasted water.

By Larry Keesen

IRRIGATION SYSTEM uniformity is the bottom line. I know of three townhouse associations in the Denver area who won six-figure cash settlements from contractors because of improper design of irrigation systems.

The contractors all did the same thing; they stretched the spacing between the heads at 70 percent and 80 percent of the diameter of coverage when the manufacturers' recommended spacing was 50 percent of the diameter. The consequence was unacceptable uniformity which resulted in damage to turf and asphalt from the overwatering required to prevent the turf from wilting and dying.

WHEN EQUAL AMOUNTS of water from the irrigation system are applied to each square foot of soil surface area the system has a very high (100 percent) uniformity. Uniformity measures the mechanical preference of the irrigation system. Uniformity for sprinkler irrigation systems can be 90 percent or higher, but in real life most existing systems are below 70 percent and the average is around 50 percent. This could be the result of an inadequate design, installation deficiency, lack of maintenance or poor maintenance.

Uniformity is important for turfgrass since every square inch of area has plant roots with very shallow root zones, and 75 percent of the roots are often in the top 1 inch of soil. Trees and shrubs are similar proportionately. The top 1 to 2 feet of soil contains up to 40 percent of the total plant root system. Hence water is needlessly wasted with deep root watering at the 3- or 4-foot level as only 10 percent to 30 percent of the roots are located at this level.

Poor uniformity is the primary unseen cause of dry and wet areas, high water costs and wasted water. The industry standard for sprinkler head spacing is usually 50 percent of diameter (allowing for 5 to 10 mph winds) or "head to head" spacing where the water from each

head reaches the adjacent heads. It's advisable to follow manufacturers' recommended spacing (don't forget to reduce the spacing for wind conditions) or maintain the spacing under 60 percent to avoid liability and waste.

Other factors that affect uniformity are sprinkler operating pressures; sprinkler distribution profiles; and slopes in which the uphill radius is reduced, and the downhill radius is expanded as the gradient increases. The industry standard for spacing on slopes is to reduce the spacing laterally on the slope by 1 percent for every 1 percent of slope change beyond 10 percent.

Most existing systems suffer pressure problems. This one has high psi. Photo: Larry Keesen.

While vertical spacing on the slope is not changed, the spacing is increased at the bottom of the slope and reduced as it interfaces with the top of the slope. (See figures 1.)

TESTING UNIFORMITY. If you want to test the uniformity of a system as well as the net application rate, place catchment devices (conical catch devices, rain gauges or cans) in landscaped areas to measure, in inches, the amount of water that is applied for a given time period. This rate of application can then be used to calculate accurate irrigation schedules.

The time period is not important if you only want to look at distribution uniformity. If the catchment device is located between two zones or in a number of different zone areas, than those zones must be operated for the same amount of time. Operate the system for five to 10 minutes for spray heads or 20 to 30 minutes for rotor heads, then measure the amount of water in each device. You will probably see some catchment containers with a lot more water than others.

I have performed numerous catchment tests over the last 10 years and have consistently seen problems with uniformity. For instance, at a 5-acre multi-family housing site I measured the uniformity and application rate of pop-up spray heads at three locations within a single irrigation zone using the "can" test method. The results were 1.1 inches, 2.3

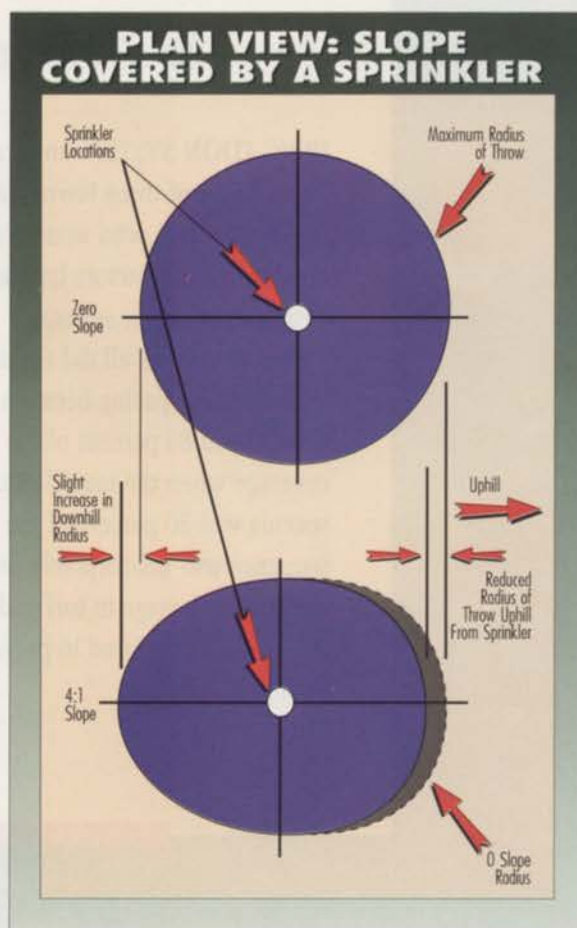


Figure 1. The slope of a property can affect the uniformity of your sprinkler system.





inches and 0.90 inch per hour. The average application rate was 1.43 inches per hour. As you can see, the uniformity is very poor and the first two test areas must be overwatered by up to 1.4 inches or 155 percent.

I also measured the application rate of large rotor heads at three locations within a zone. The results were 0.44, 0.0 and 0.38 inches per hour (the 0.0 inch application rate is a result of poor head spacing) resulting in an average application rate of 0.27 inch per hour for the three test locations. For a good test I would use at least two catchment devices per sprinkler head, placing them two to three feet from a head and half way between the heads.

Measurement of water application for each zone in the system using the "can" test method will provide for greater accuracy in water/time applications and conserve additional water. This will also increase your awareness of the uniformity of coverage provided by the irrigation system.

WATERING EFFICIENCY. Water application efficiency calculates the percentage of applied water that ends up in the root zone of the plant. Efficiency is the amount of water stored in the root zone divided by amount water applied. Properly maintained and managed irrigation systems can produce irrigation efficiencies above 80 percent.

The theory of uniformity and efficiency are entirely different. Systems can have a high uniformity and low efficiency, low uniformity and high efficiency or low uniformity and low efficiency.

Our goal is to strive for the highest uniformity (healthy appearance) and the highest efficiency (lower costs) on every landscape.

In 1942 J. E. Christiansen developed a method to explain and measure how uniformly water is distributed from a sprinkler. This number or percentage is referred to as the uniformity coefficient. Christiansen studied direct evaporation loss from irrigation sprinklers in California and determined that more than 10 percent of the water may be evaporated as it is applied during the afternoon during hot dry periods, while the opposite occurred at night and losses were very low.

Additionally, a study of field application efficiencies done at Redfield, S.D., indicates a wide range of efficiencies from 95 percent down to 65 percent. Water losses were either from deep percolation and/or evaporation. Frost and Schwalen made a number of tests to determine the effect of nozzle size, pressure, wind velocity, temperature and humidity. They concluded that water losses increase with higher temperatures, wind, operating pressure and decrease with higher humidity and nozzle diameter.

Water losses are most directly related to the vapor-pressure deficit in the atmosphere which is dependent

SEVERAL FACTORS AFFECTING SYSTEM OPERATING EFFICIENCIES:

- ✓ Evaporation losses from spray droplets as they pass through air.
- ✓ Wind drift that carries the droplet away from the irrigated area.
- ✓ Water overspraying on asphalt, concrete, etc.
- ✓ Water runoff from the turf surface region.
- ✓ Water that drains below the active root zone.

on the temperature and relative humidity. Near the saturation point or at a very low pressure deficit, water losses in a no wind condition were about 3 percent at 30 PSI pressure and noticeably greater at 50 PSI pressure.

Water application efficiency can differ from 70 percent in hot arid climates to 85 percent in cool humid areas. Notice that



properly designed and maintained turf irrigation systems are capable of irrigation efficiencies at least as high as 80

System uniformity is important for turfgrass since every square inch has plant roots, most of which have shallow root zones. Photo: RainBird.

percent.

Operation of a group of rotor heads instead of a single head covering the same area as the group of heads operating simultaneously will save up to 20 percent more water, according to a study by the American Society of Civil Engineers. One head can not cool the air as fast as five would for the same sized area. The water spray reduces temperature and increases humidity resulting in higher efficiencies.

IMPROVING EFFICIENCY. What else can we do to improve system efficiency? Anemometers can be installed with the irrigation system to measure wind and shutdown

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system operation when velocities are above 10 or 15 mph. If prevailing winds are a problem, design the head spacing for high winds. Install rain shutoff devices on the irrigation system to avoid watering when it rains.

In cold climates, install a temperature sensor that will turn off the system when temperatures drop below 38 degrees. Soil moisture sensors are providing additional water savings that have not been possible in the past. These sensors read the moisture level in the soil and tell the controller how much water needs to be applied.

I recently reviewed a soil moisture system at the Denver Bronco's practice field. The turf appearance was great, and the usual problems with wet and dry areas were non-existent. The turf manager, Ross Kurcab, determines the window of operation and the sensors do the work.

If you're interested in more information on water uniformity, refer to *Irrigation, 5th edition*, available from the Irrigation Association. For more information on testing irrigation systems and water

management attend the one day Landscape Irrigation Auditor training program sponsored by the Irrigation Association; 703/524-1200.

CONCLUSION. In the last three issues we have looked at water management and the factors that affect good management practices. Soils, irrigation scheduling, pressure control, uniformity and efficiency must be understood in order to properly design, install, maintain and operate the system.

My idea of a near perfect irrigation system is:

1. Uniformity of more than 90 percent.
2. Application rates that match the intake rate of the turf and soil.
3. Ninety-five percent efficiency.

Next month will be the beginning of a series of articles on irrigation system design. Water sources, quantity, quality, water pressure and system capacity are some of the topics for the next issue. ■

The author is president of Keesen Water Management Inc., Denver, Colo.

IRRIGATION QUESTIONS

1. Does sprinkler head spacing affect irrigation system uniformity?
2. What is an acceptable efficiency level for an irrigation system?
3. Can soil moisture sensors improve irrigation system uniformity?
4. Can system uniformity be tested and measured in the field?
5. Will poor uniformity of coverage affect the irrigation operating efficiency?
6. What is more efficient, one head operating by itself or five heads operating as a group on one zone?

Answers appear on page 62 of October LLM.

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USE READER SERVICE #33

Look-Alike Pests

Distinguishing lawn pests from beneficial insects is often a difficult task. But studying seven key insects will give you the answers to more than 90 percent of the insect damage to home lawns.

By David Smitley

AFTER MY TALK at a recent field day meeting, a gentleman approached me with a sample of turf from one of his customer's lawns.

The turf was obviously suffering. It was brown and thin in patches, with some green clumps. Racing among clumps of grass were many small gray bugs. The question was, "what caused the damage and what should I do?" A quick look at the small gray bugs with big eyes told me that he had a sample full of big-eyed bugs, a common predator found in turf.

After closer examination, I could still find no pest bugs in the sample. My response was one of those 'best guess' answers: "The damage may have been caused by chinch bugs, but the chinch bugs are gone. These are big-eyed bugs, a beneficial insect that eats chinch bugs and some other kinds of insects. I suggest that you don't do anything except the usual watering and fertility program to help the turf recover."

This was not the answer he was expecting. "Are you sure? These bugs are all over the lawn, it seems like they caused the damage." We discussed the situation. It had been a wet summer and chinch bugs were not as abundant as usual. In many places a fungal disease of chinch bugs called *Beauveria*, had caused a collapse of active populations. Sometimes, even in dry spells, the chinch bugs slowly disappear without any pesticides being used, and more big-eyed bugs are found than chinch bugs.

This conversation reminded me of how some beneficial insects commonly found in home lawns resemble pest insects. Insects can always be found; in healthy turf, or in damaged turf. Without a background in entomology or plenty of experience, it is difficult to distinguish some of the good guys from the bad guys. Also, some of the key insect pests may be difficult to tell apart.

In this article I will provide a few useful pointers for classifying



The big-eyed bug, second from left, unlike the white grub, chinch bug pictured from left to right above, are key insect pests in turf. Big-eyed Luckily, there are only a few insect species that are important pests of roots, rarely cause any significant damage because of predators and

some of the most common insects in home lawns as beneficial or destructive. I will also explain how to identify the most important turf pests.

Because more than 1,000 species of insects may be found on the turf and in the soil of just one home lawn, you may think it is impossible to distinguish one pest from another. Sometimes it is tricky, but you may be surprised by how simple it is. Fortunately, there are only a handful of insect species that are important pests of turf in home lawns. Many other insects can be found that feed on turf blades or roots, but because of predators and naturally occurring diseases, they rarely cause any significant damage.

That leaves us with a group of seven insects that cause more than 90 percent of the insect damage to home lawns. If you learn these key pests, you can consider all other insects as harmless or beneficial. It also helps to know the most abundant beneficial insects. I will explain how to identify two of the most common ones: big-eyed bugs and ground beetles. There are two other groups of beneficial insects that you already know how to recognize: spiders and ants. They are abundant in home lawns, and very helpful in controlling insect pests.

BENEFICIAL INSECTS AND SPIDERS

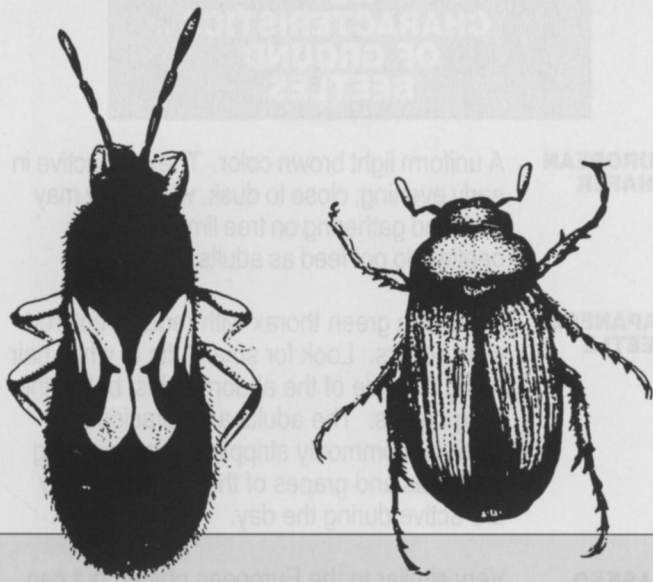
Big-eyed bugs
Ground beetles
Spiders
Ants

KEY INSECT PESTS

Chinch bugs
Bluegrass billbugs
Japanese beetles
European chafers
June beetles
Masked chafers
Sod webworms

Learning these seven insect pests and four groups of beneficial insects provides a good start for identifying insect problems in turf. Two other insect pests commonly found in the North Central states are the greenbug-- a small aphid that feeds on grass blades -- and the winter grain mite -- a dark red mite the size of the period at the end of this sentence.

In New York, New Jersey and neighboring seaboard states you may also run into problems with the oriental beetle or the Asiatic garden beetle. In the Southeast-



and European chafer, is a beneficial insect in turf. The other three, Japanese beetle and chinch bugs are often confused, leading to misidentification. Japanese beetle is often found feeding on turf blades or naturally occurring diseases. Illustrations: Michigan State University.

ern states you will find plenty of mole crickets and green June beetles. But in the north central states, the group of seven pests listed above are by far the most important ones.

INSECTSTRUCTURE. Identifying insects is easier if you have an understanding of basic insect structure. All insects have some features in common. They have three distinct body regions; a head, thorax and abdomen. Adult insects have compound eyes and a pair of antennae on their head, and six legs and a pair of wings attached to their thorax. The eyes and antennae may be small and indistinct on larval stages of insects. The larvae also do not have wings.

All the key insect pests listed above, except the chinch bug, have a larval stage that looks different from the adult insect. Just like caterpillars pupate and turn into moths or butterflies, grubs pupate and turn into beetles. The immature lifestyles, like caterpillars or grubs are referred to as larvae, while the butterflies or beetles are the adults.

Chinch bugs belong to a more primitive group of insects that do not go through a pupal stage. Their larvae look similar to the adults, only smaller and without wings.

For some insects, like the cicada killer, the body regions and wings are easy to see. For other insects, like beetles, you may need to examine them more carefully. Beetles have hardened wing covers that protect their folded wings. The wing covers, like the wings, originate on the thorax, but extend back to cover most of the insect's abdomen.

If you want to see the membranous wings that beetles use to fly with you must lift up the wing covers. These hard wing covers protect beetles from predators, but they must be held in a lifted position for flying, making most beetles rather clumsy fliers.

CHINCH & BIG-EYED BUGS. The chinch bug and big-eyed bug are two common, similar looking residents of home lawns. However, it is important to be able to distinguish them because the chinch bug is destructive to turf while the big-eyed bug is beneficial. Adult chinch bugs are approximately one millimeter wide and 3 to 4 millimeters long (1/8 inch). The larvae are smaller, varying from 1 to 3 millimeters long.

Big-eyed bugs are about the same size, although the adults may be slightly larger than the chinch bug adults. Big-eyed bugs are best distinguished from chinch

bugs by their eyes. Their large eyes bulge out wider than the thorax, while the small eyes and head of the chinch bug are not nearly as wide as it's thorax. Also, the big-eyed bugs are a steel gray color, and the chinch bugs are mostly black with white wing markings.

When chinch bugs first hatch from eggs the tiny first instar larvae are mostly red, but quickly change to a black color as second instars. The larvae of big-eyed bugs look like a smaller version of the adult without wings.

A final tip is to observe how fast they move. Big-eyed bugs are so fast that if they are placed in the palm of your hand, they will run off your hand in a few seconds. Chinch bugs will try to run away too, but they have shorter legs and do not move nearly as fast.

WHITE GRUBS. White grubs are a name used for the larval stages of a large family of beetles that include the Japanese beetle, European chafer, masked chafer and June beetles. If you find a white, C-shaped grub, with six legs located on the thorax just behind the head, it is one of the white grubs that feed on turf and shrub roots.

Another kind of grub prevalent in home lawns is the billbug larva. The adult is a black weevil called the bluegrass billbug. At first glance, the billbug larva may look like the Japanese beetle grub or other white grubs, but if you look closer, you will notice that it does not have any legs. This is characteristic of all weevil larvae. They have a white body and dark brown head capsule, like Japanese beetle grubs, but, unlike beetles, they do not have any legs.

Japanese beetle grubs vary from 2 mm long at egg hatch to 25 mm long just before they pupate. Billbug larvae have a maximum size of 10 mm in length. In the North Central states billbug larvae are active in June and July, a time when Japanese beetle, European

chafer and masked chafer are usually not found in lawns because they are in the adult stage. However, June beetle grubs may be found at any time during the spring and summer.

IDENTIFYING WHITE GRUBS.

The four most damaging kinds of white grubs look very similar. The Japanese beetle, European chafer and masked chafer have one generation per year, and are usually found in March, April, May, early June, late August, September, October and November. The June beetle, or May beetle as it is referred to in some places, represents a group of several species of large beetles (1/2- to 1-inch long) that develop from large white grubs that may be 2 inches long.

These beetles with a 2- or 3-year life cycle may be found at any time in the spring or summer. But remember that June beetle grubs start as eggs, too, so the larvae may be anywhere from 1/8-inch to 2 inches long. The white grubs found in the soil of lawns can be identified by the pattern of spines on the underside of the last abdominal segments. This group of spines is called the raster. The raster pattern can be seen on large grubs with your eyes, but for smaller grubs you may need a hand lens.

JUNE BEETLE

Two parallel rows of spines that converge at both ends.

JAPANESE BEETLE

A V-shaped set of spines.

EUROPEAN CHAFER

Two parallel rows of spines that diverge toward the rear-end.

MASKED CHAFER

No distinct pattern of spines.

ADULT BEETLES. Many different kinds of beetles can be found in home lawns. The most important pest species will either look like a bluegrass billbug or like a European chafer.

The adult billbug is black with a long snout characteristic of weevils. The delicate, elbowed antennae of weevils emerge from the base of their snout. The European chafer, Japanese beetle and masked chafer all have the same stout body appearance. An important clue for identifying these beetles is that they all have short, clubbed antennae. This distinguishes them from another large group of beneficial beetles; the ground beetles, that have long thread-like antennae.

Ground beetles are usually black, but some are brown in color. They crawl quickly and are good at evading curious turf professionals trying to pick them up for examination. In many species the black wing covers are concealed with parallel ridges. The ground beetles are predators; they only feed on other insects.

Although the European chafer, Japanese beetle and masked chafer all have the same body shape, they can be separated by their coloration. Unfortunately, the European chafer looks very similar to some of the smaller species of June beetles. Key characteristics are found in Table 1.

Many other kinds of insects may be found in home lawns. The best approach is to learn how to identify the key insect pests described in this article and a few insects that they can be confused with. Everything else can then be assumed to be harmless.

Follow-up by collecting each of the key insect pests and preserving them in 70 percent alcohol. Screw-top glass vials are the best containers, but baby food jars or other small glass jars will work too. This method will not work well for grubs, however, because they turn black after a few weeks in alcohol. With a small collection available, employees can be quickly trained to identify pest problems.

For more information on these

KEY CHARACTERISTICS OF GROUND BEETLES

EUROPEAN CHAFER

A uniform light brown color. They are active in early evening, close to dusk, when they may be found gathering on tree limbs. These beetles do not feed as adults.

JAPANESE BEETLE

A metallic green thorax with reddish-colored wing covers. Look for small tufts of white hair along the side of the abdomen just below the wing covers. The adults are voracious feeders, commonly stripping *Tilia*, flowering fruit trees and grapes of their leaves. They are active during the day.

MASKED CHAFER

Very similar to the European chafer, but can be distinguished by their black heads.

Table 1

pests and other less common ones see the excellent book authored by H. Tashiro, "Insect Pests of the United States and Canada," published by the Cornell Publishing

Company.

The author is an entomologist at Michigan State University, East Lansing, Mich.

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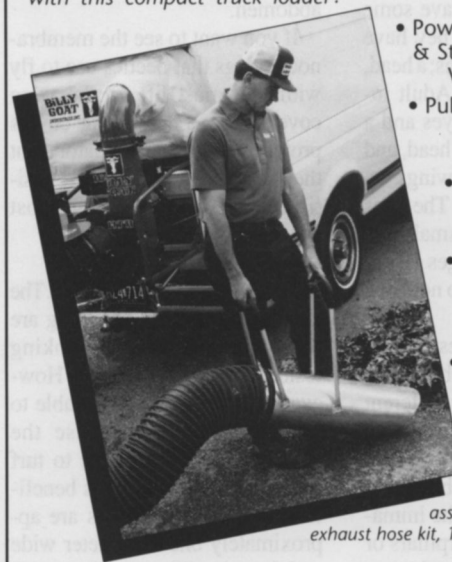
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WILDFLOWER plantings at a noted South Carolina resort have surpassed all expectations for physical impact on the landscape. Psychological and emotional reaction, however, have been equally overwhelming.

The owners of Kiawah Island, which is located about 20 minutes north of Charleston, S.C., originally saw planting wildflowers as a quick and effective way to help the resort recover from Hurricane Hugo's devastation. What wasn't expected, though, was the emotional response to these plantings.

Residents and visitors watched as the damaged vegetation was piled on a 5-acre spot called Bass Pond. The plot was deemed the burning site for the remaining hurricane debris, as well as the initial step in the wildflower development plan created for Kiawah Island.

The planting of wildflowers on Bass Pond produced one of the most visible wildflower sites in the United States. The meadow draws raves from both residents and visitors and has even been the focus of national attention.

Bass Pond, once known as the symbol of destruction in the wake of Hurricane Hugo, has been turned into a beautiful site cherished by many. "The meadow looks like a bride before she walks down the aisle," said Sara Edie Livingston, co-founder of the Wildflower Alliance of South Carolina.

Wildflowers became a valuable healing process -- helping restore nature to the island. "When people have special little view corridors that are filled with wildflowers, it makes them feel wonderful," she said. "It raises their spirits and makes them feel good." This was the effect of the initial planting at Bass Pond.

Leonard Long, part owner of Kiawah Resort, and an avid fan of wildflowers, wanted Livingston to create and implement an islandwide wildflower program. With her expertise in large scale

Turning Devastation Into Beauty

A natural disaster such as a hurricane or tornado doesn't have to leave permanent scars. The planting of wildflowers became a valuable healing process in South Carolina.

plantings on both public and private lands, Livingston was able to offer a unique approach.

SENSITIVE PLANTINGS. "The development of Kiawah has always been done sensitively," Livingston said. "So, to begin an organized, conscious wildflower program was consistent with the mind set at Kiawah."

Each minute detail -- from drainage to roads to flora -- was studied thoroughly before initial construction of the Kiawah resort began. The thought and sensitivity involved were tremendous, resulting in a perfectly beautiful island, she said.

Through seeded color, Livingston wanted to bring a breath of fresh air back to the ash-covered 5-acre burn site, as well as other parts of the island. Her main objectives included recapturing the character of the past while moving forward with the growing popularity of wildflowers.

"I am really excited about being part of a movement to bring back plants, like wildflowers, that are more natural, require less maintenance and are beautiful," Livingston explained.

Planting Bass Pond was the first step in the development program. "Those were the worst planting

conditions possible," she said.

"The pH level was only 3.5 compared to an ideal level of 7. Annual ryegrass had been planted on the site, and had been heavily fertilized, resulting in a healthy, mature stand of a particular grass that is toxic to the production of wildflowers."

To prepare the site for planting, operators started with a Bush Hog to cut down tall weeds and grass. Seven days later, applicators sprayed the entire site with Roundup® herbicide. Approximately seven to 10 days later the site was tilled and sprayed again with Roundup. The whole process took approximately one month.

Livingston compared plot preparation times with and without the use of herbicide, and found Roundup to play an integral part in speeding up the planting process. "For my work, I don't have clients who are willing to invest two years to rid a site of weeds before we ever even plant a wildflower," she said. "By following this program of ground preparation, we are able to speed up the process and plant wildflowers the first season."

COLOR DAZZLES VISITORS. By April, sweet alyssum flowers covered Bass Pond like snow.

Throughout the summer and into the fall, an array of bright, sassy colors met inquiring visitors and enthusiastic homeowners. A riot of color burst from perennial black-eyed Susans, bright orange California poppy, yellow, lavender and white cosmos -- followed by dazzling yellow coreopsis, gaillardia and lemon-mint. The changing tapestry of color transformed the field five times in the first year from white to completely yellow, red, lavender and purple.

Both developers and contractors are leveraging the advantages of planting wildflowers in terms of beauty, ecology and practicality. Wildflowers are drought-tolerant, control erosion, reduce maintenance costs and provide excellent wildlife habitat.

Wildflowers are naturally acclimated to the area as well, thriving in conditions that generally do not support exotics. For example, they are not affected by insects, and they use existing ground water.

Wildflowers also cost far less to maintain than exotics and turf. Installation costs for wildflowers are eight to 10 cents per square foot, compared to \$4 per square foot to plant perennial or annual bedding plants and 68 to 75 cents per square foot for sod, Livingston said.

"I think everybody is beginning to become aware that not only can wildflowers save you money and effort, but they also create an image of being environmentally sensitive," she said.

Wildflowers allow developers to take highly maintained areas and return them back to environmentally protected areas. A wildflower development projects the image that developers care about the environment, whether it be a resort, a golf course, an apartment complex or an office building.

Environmental awareness has always been important in the development at Kiawah and has

risen since Hurricane Hugo. As a result, Kiawah Resort Associates asked Livingston to return something to the environment. "Wildflowers are the romantic way for both residents and visitors to get in touch with their roots," Livingston said. "There's a lot of romance and nostalgia associated with planting wildflowers."

DEVELOPMENT CONTINUES. Plans for further wildflower developments on Kiawah Island include areas along bicycle paths, golf courses and walkways. A series of Butterfly Gardens has recently been installed along Ocean

Course Drive leading to the Ryder Cup Course.

There are approximately 13 acres planted with wildflowers,

and eight additional acres will be planted this year.

"The four owners of Kiawah gave me freedom to review the

tucked away that people feel like they've discovered, then it will make them want to buy property there."-- Sargent & Potratz ■



This 5-acre plot, called Bass Pond, was deemed the burning site for the remaining hurricane debris on Kiawah Island, South Carolina, as well as the first step in the wildflower development plan designed to return the former beauty destroyed during the natural disaster.

island and plant sites that would test a variety of growing conditions," Livingston said. "We want visitors to experience maximum visual impact."

Included in this year's plantings will be the tip of the island, called Rhett's Bluff. "The character of that part of the island is just perfect for the natural beauty you get with seeded color," she said.

"The bottom line is that people will come to see color," she said. "If we have a beautiful little place

PLANTING WILDFLOWER SITES

FOLLOW THESE instructions for a prairie-type wildflower site:

1. Take a soil sample of the site to be planted. Instructions should specify that the crop is to be "wildflowers" and indicate whether or not irrigation is available.

2. Amend the soil based on the recommendation for the soil sample.

3. Schedule the planting to be done after the date of last possible frost. The annuals will be killed by a late freeze.

4. Mow the area to be planted with the mower blades set as low as the machine accepts.

5. Rake the residue thatch and remove it from the site.

6. Prepare the seed for distribution by mixing it in a container with a ratio of one-part seed to four-parts damp sand.

7. Stir the seed/sand mixture thoroughly. This will scratch the outer coat of the seeds which will encourage better germination of some species. The damp sand will stick to the seeds, making it easier to achieve a more even seed distribution.

8. Distribute the seeds by "feeding the chickens." We do not recommend using a rotary-type seed machine that fits across the chest, as the tiniest seeds shift to the bottom and results in poor distribution.

9. Drag the site with a fence weighted by a heavy pole or roll with a water-filled drum if the site is large.

10. If the site is small, rake the seeds in to assure positive seed to soil contact. This step cannot be over-emphasized.

11. Mulch with a fine layer of pine straw or hay to hold the seeds in place and discourage raiding by birds.

12. Water the site if possible.

13. The cotyledons and "true leaves" should begin to show in five to six weeks.

14. If grass or weeds become a problem, apply the herbicide Poast® as recommended, disturbing the site as little as possible.

15. Do not mow the site until the annuals have set seed. Set the mower blades high enough to leave the leaf rosette of the perennials which will serve as a green ground cover during the winter.

FOR A GRASS-FREE WILDFLOWER SITE:

1. Mow if the grasses and weeds are exceptionally high.

2. Spray with herbicide Roundup,® mixed at the recommended distribution rate.

3. Wait two weeks, then till the site thoroughly to expose any potential dormant weed sites.

4. Wait two weeks for weeds to germinate, then apply Roundup again.

5. Wait two weeks, till again, then distribute seeds according to directions for a prairie-type wildflower site.

These instructions on how to plant wildflowers have been prepared by Livingston and Associates, Mt. Pleasant, S.C. Attitudes and technical information varies from region to region, but, in general, wildflowers are becoming more accepted on both home and commercial properties. For more information, contact: Livingston and Associates, 857 Coleman Boulevard, Mount Pleasant, S.C. 29464.

Low Light Conditions

Ed. Note: The following text is a short excerpt from the soon-to-be published book: TURF-GRASS ECOLOGY AND MANAGEMENT. Understanding lighting conditions, whether extreme or lacking, is a fundamental principle in managing turf conditions. Look for more excerpts from this book in future issues of Lawn & Landscape Maintenance magazine.

SHADE CAUSES significant growth changes in turfgrass plants. In response to shade, turfgrass plants have more of an upright growth habit; thinner, longer leaves; shallower rooting; lower plant energy levels; reduced tillering; and less dense turfgrass stands.

In turf, shade is commonly associated with trees but shading occurs between individual turfgrass plants as well. This competition between turfgrass plants is further described in later chapters that address intra- and inter-specific turf competition. The remaining part of this chapter examines shading effects caused by trees.

Shade is a major problem where turf is grown beneath or in close proximity to trees. The effect is to reduce the amount and quality of

light received by the turf. Light transmitted through tree canopies comes through at longer wavelengths (far-red, infrared) which are not the desirable wavelengths for photosynthesis.

Photosynthetic rates are slower under shade, and result in plants having lower carbohydrate reserves and shallower root systems. Research has also shown that shading reduces the amount of chlorophyll in lower parts of the canopy. (Biran and Bushkin-Harav, 1981)

The change in quality of light influences turfgrass growth by affecting phytochrome. In unshaded, daylight areas, red wavelengths predominate and convert the phytochrome to its active state, P_{fr}. But in shaded, nighttime situations, far-red wavelengths predominate switching the phyto-

chrome to an inactive state (P). The inactive state results in a lack of leaf expansion, increased stem elongation and reduced plant tillering.

Shading and tree type influences the quantity of light that the turf receives. Trees that cast a deep shade, such as maple and oak, reduce the quantity of light to a greater extent than open canopy trees such as ash, birch and locust. Deciduous trees filter the quality of light by intercepting the blues and reds and transmitting the far-reds. The exclusion of bluelight as the level of shade increases is the most critical wavelength missing for turfgrass growth. (McBee, 1969)

Turfgrass plants adapted to shade in general have a low light compensation point which is the



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You're familiar with the technical aspects of turfgrass management, but can you explain why you're doing what you're doing? **TURFGRASS ECOLOGY AND MANAGEMENT** provides a framework in which to judge and develop turfgrass management programs. In the coming years, the challenge will be to maintain quality turf more efficiently. This is particularly important considering the current environmental scrutiny the public and the government have placed on turfgrass management practices.

The ability to deliver high quality turf with less inputs will require greater efficiency by the turfgrass manager. To meet this challenge, turf managers will require more than technical expertise of how something is done, but an understanding of what effect a cultural or chemical practice has on that turfgrass ecosystem.

TURFGRASS ECOLOGY AND MANAGEMENT addresses topics addressing environmental concerns such as pesticide and nutrient fate, water use, pesticide resistance, cultural practices as related to pest development...approaches to turf management that have never before been proposed in books related to turfgrass management.

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light level at which net photosynthesis equals zero. In other words, this is the point where photosynthesis equals respiration. Plant growth, as measured by dry weight, occurs only when the light is above the compensation point. The ability of shade grasses to maximize photosynthesis at lower light intensities, and lower compensation points allows them to compete in shade situations.

Conversely, turfgrasses that have higher light compensation points do not perform well due to insufficient light to carry on necessary photosynthesis. Warm-season grasses (C4) are the least shade tolerant due to a higher light compensation point. Of the warm-season turfgrasses, centipedegrass has shown the best shade tolerance while St. Augustinegrass (cv. "Floratum") the least. (Barrios et al., 1986)

Management practices for turfgrasses in the shade should address the changes in growth effects. Mowing heights should be raised to account for the longer, thinner leaves and reduced canopy density. In addition, care should be taken to minimize any scalping to low shade-tolerant turfgrasses.

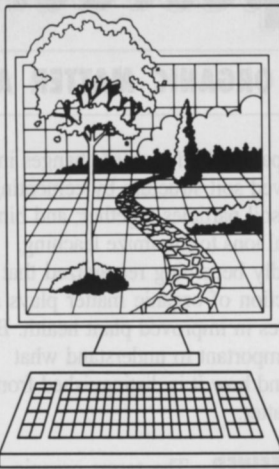
Shade-sensitive turfgrasses have reduced levels of chlorophyll near the soil which decreases their recuperative capabilities and limits their ability to regenerate new tissue. Irrigate only when needed to promote deeper root systems and minimize overwatering. In shaded situations, promote air circulation to reduce humidity levels which will help reduce conditions favorable for disease development.

Light is critical for the development and growth of turfgrasses. Starting with the seed and progressing through to plant maturity, light is needed for energy, initiation of reproduction and seed germination. From a competitive standpoint, reduction in the quantity and quality of light limits, in general, turfgrass growth. However, differences in growth among turfgrass species in response to a reduction in light occurs. ■

COMING SOON

WATCH FOR:

More information on the availability of TURFGRASS ECOLOGY AND MANAGEMENT in the November issue of Lawn & Landscape Maintenance.



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Compost Corner

HUMUS VS. ORGANIC MATTER AND COMPOST

EXTENSIVE UNIVERSITY testing combined with proven field experience indicates that there are numerous plant growth benefits to enhanced humus levels in soil. Humus, or humic-like substances, can be added to the soil in different ways, including soil amendments with high organic matter materials such as plant or animal residues, composts or sludges.



Wilkinson

In addition, numerous soil amendments containing only humus or humic-like substances have recently appeared on the market making claims of enhanced plant growth.

It has long been recognized that soil organic matter, which is made up in part of humus, possesses several benefits when available in sufficient quantities in the soil: slow release of N, P, & K; improved water

holding capacity; buffering of changes in pH; improved soil structure by cementing individual soil particles together; and binding of metal ions to minimize leaching.

It is rapidly becoming recognized that the humus fraction of organic matter plays additional roles in improved plant health. But first, it is important to understand what humus is and how it is distinguished from organic matter.

HUMUS DEFINED. The terms organic matter and humus (or humic substances) are often used synonymously, however, further definition is required to clarify each and their role in soil and plant health. Organic matter can be defined broadly as including:

- soil biomass (earthworms, insects, microorganisms)
- undecayed plant and animal tissue
- discrete categories of decaying plant and animal tissue, e.g., sugars, polysaccharides, proteins, amino acids, fats, organic acids, and so on.

Humus, on the other hand, lacks any precise definition. It results from organic matter decomposition over time. It is a non-specific, complex mixture of organic substances having a very high molecular weight. Humus varies considerably from source to source and consists of many unidentifiable compounds. There are no analytical methods to quantify humic substances. While humus resists further decomposition, it does indeed decay at a very slow rate (unlike fresh animal or plant tissue which will decompose readily). The older the humus, the slower the rate of decay.

It is known that humus consists of three broad categories or different fractions:

- humic acid -- soluble at pH's > 2
- fulvic acid -- soluble at all pH's
- humic -- not soluble in water

HUMIC SUBSTANCES. Among all the soil organic constituents, it appears that humic substances have the ability to act as plant growth stimulants. Research throughout the world on numerous plants has

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focused on three main effects -- germination and seedling growth as well as root and shoot growth.

Both the rate of germination and seedling growth appears to be enhanced by humic substances. This effect has been tied to an enhanced level of enzyme activity in seed tissue. This has been demonstrated in soils rich in humus, as well as when seeds were coated with a humic substance.

Stimulated root growth and initiation of new roots have also been observed in the presence of high levels of humus. It appears that humus has a greater effect on root than shoot growth. Indeed, liquid foliar applications of humus improve root growth, and fulvic acid appears to have a greater effect on roots than does humic acid. The concentration of humus is important, and the rate of root response appears to decline at high concentrations.

Although not as great as with roots, humic substances can also enhance shoot growth.

GROWTH STIMULATION. The mode of action of humic substances is under intense study. To date, it has been shown that humus can accelerate the rate of uptake of both macro (N,P,K) and micro (Cu, Fe, Zn, Mn) nutrients. In fact, lower molecular

weight humic substances themselves can be taken up by the plant.

The biochemical basis for the positive effect includes such issues as improved membrane permeability and enhanced energy metabolism. Photosynthesis rate, respiration rate, chlorophyll content and protein content all have been shown to increase. Humic substances may in fact be acting very much like a growth hormone.

INCREASING HUMUS. The level of humus in a soil can be dramatically changed by several means, including the use of compost-based products high in organic matter, and/or any one of a number of commercially available humic-based materials. Of course, when the source of the humus in compost is high in organic matter, you gain the soil benefits of the organic matter (improved water holding, improved structure, slow release of N-P-K, etc.) in addition to the benefits of the humus (growth stimulation).

Depending upon the source of compost used as a soil amendment, organic matter can vary anywhere from 30 percent to 60 percent. In general, humic substances can account for up to 17 percent of the carbon contained in such materials.

Humus derived from compost is very similar to the humus derived from natural decomposition of organic matter within a soil. When compost is added to soil, the humic fraction is impacted for several years. The influence of humus will become less apparent over time. Compost used as a soil amendment or turf topdressing should be applied periodically to maintain humic level.

Composts originating from plant residues and manures are known for their high level of humic substances. The addition of these types of composts to soil or to potting media in conjunction with other materials such as perlite, vermiculite and peat, has been shown to result in a higher growth rate attributable to humic substances and increased microbial activity.

The impact of humic substances on plant growth is extremely interesting, and our knowledge of its influence is advancing rapidly.

For more information, refer to Humic Substances in Soil and Crop Sciences from the American Society of Agronomy in Madison, WI. -- Jim Wilkinson ■

The author is vice president, professional sales and research and development for Earthgro Inc., Lebanon, CT.

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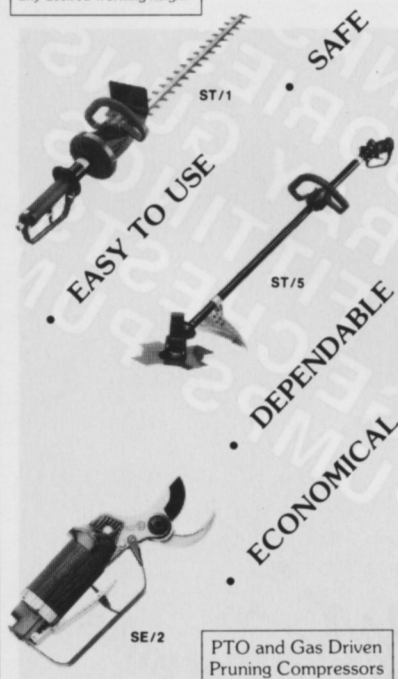
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People

HARDIE IRRIGATION hired **Tom Sage** as district sales manager for the central United States. Headquartered in Colorado, he is responsible for the sales management of Missouri, Kansas, Nebraska, Utah and Colorado.

Julie Ornberg has been named market development manager for Echo Inc. Ornberg is responsible for implementing communications efforts to distributors, dealers and consumers through advertising, newsletters, collateral material and promotional events.

Jacklin Seed Co. appointed **Matthew Emmons** to its international marketing department where he will specialize in export sales of turfgrasses, forage grasses and legume seed. Formerly, Emmons was responsible for analysis and briefings to Congressman John Miller, R-Wash.

Rain Bird and its affiliates have appointed several new managers: **Mike Baumann**, senior manufacturing engineer at Camsco Manufacturing Corp.; **James O'Shea**, senior designer for Clemar Mfg.; **Nick Moschis** contractor sales specialist at Rain Bird International; and **Steve Tyler** as engineering group manager of its contractor division.

Camsco exclusively manufactures the Rain Bird rotor line. Baumann's initial responsibilities include manufacturing support activities related to the production of the Rain Bird rotors. Clemar Mfg. exclusively manufactures controllers for Rain Bird Sprinkler Mfg. Corp. In his new position, O'Shea will provide packaging and circuit board design support to the controller engineering staff.

In his new position Moschis will work closely and solely with the irrigation contractor market in support of the network of Rain Bird Australia.

Shawn Kennedy joined ISK Biotech as Ontario sales supervisor. Previously, Kennedy was the western sales manager for United Agri Products, based in Calgary, Alberta. In his new position, Kennedy is responsible for the sales of turf and agricultural products in Ontario.

Also at ISK, **Troy Jamieson** is now district sales supervisor, industrial biocides division. He assumes sales responsibilities for Kentucky, Ohio, Indiana, Illinois, Michigan, Wisconsin, Iowa, Minnesota and Nebraska.

3M Electrical Products Division named **Gregg Paul** manager, Electrical Construction and Maintenance Business Development Unit. He is responsible for managing worldwide market development of 3M's EC&M products.

Also at 3M, **J.W. (Jack) Murphy** has



Emmons



Tyler

been named manager, Utility & Industrial Business Development Unit. He is responsible for the worldwide market development of products such as cold-shrink, molded rubber and heat-shrink cable splicing and termination kits.

Martin Coyne, former managing director of JCB's joint venture company with Sumitomo of Japan, has been named chief executive of JCB's worldwide organization. Coyne replaces Gilbert Johnston who is scheduled to retire next year after 30 years of service with the company.

Johnston, who served as JCB's chief executive for 17 years, has been named deputy chairman. During his time with the company, Johnston has worked closely with the company's founder, Joseph Cyril Bamford, and with the present Chairman and Managing Director, Sir Anthony Bamford.

Febco appointed **David Whitney** as a sales manager for the firm. He is responsible for the sales activities of 14 Febco Sales representatives in the Midwest and portions of the Northeastern and Southeastern U.S.

Don Brown, formerly executive vice president of CAD Institute in Phoenix, Ariz., is the new president of Landcadd. Greg Jameson, Landcadd founder will remain as CEO.

Mike Lamson was named Hunter district manager for the Southwest. His territory includes Arizona, New Mexico, southern Nevada and the El Paso area of Texas.

He will direct sales and marketing efforts for Hunter residential sprinklers for turf and landscape and commercial sprinklers for sports fields, parks and public areas. He also coordinates new product introductions and training.

Husqvarna Forest & Garden promoted **Bill Herold** to general manager of the firm's Mideastern division based in Butler, Pa.

Herold oversees all phases of sales and distribution of the firm's product in Ohio and Pennsylvania and sections of Indiana, Maryland, New York, West Virginia and Michigan.

Dr. Will Carpenter, who recently retired from Monsanto, was appointed chairman of the board of AgriDyne Technologies, replacing **Dr. Anthony Evnin**. ■

Product Profile

STEP UP TO GREATER PROFIT AND PRODUCTIVITY

"I JUST KNEW it was going to kill me," laughed Adam Helmick, owner and operator of AAA Lawn Services, Eldersburg, Md., describing his reaction to winning a maintenance contract for a three-acre property.

For a young lawn company, a contract of that size should have been exhilarating. Instead, all Helmick could think about was how exhausted he and his workers would be walking its more than six miles. "That's when I decided I'd better do something."

He had heard about different sit-down sulkys on the market, but was confused about their pluses and minuses. Still, he figured they were his only alternative to mower burnout and fatigue. He was about to get a nice surprise.

"I was at the lawn equipment dealer looking at sit-down sulkys, when I came across a brochure for a Velke," Helmick said.

The Velke, a step-on mower attachment that allows the operator to ride behind most walk-behinds standing up, promised to drastically reduce the time and effort spent mowing without any drawbacks.

"It sounded just too good to be true," he said. What Helmick found was that he gained even more than he had hoped for.

"It cut my time in half on the very first job," he said. "And, I actually had energy after mowing 10 properties that day since I didn't have to walk 30 or 40 miles (the average for a mower's eight-hour work day).

Such drastic energy savings are especially valuable for operators who are also company owners like Helmick because they must do a lot of their office and managerial work at night after working all day in the field.

"Now, I'm actually clearheaded when it comes time to do my paperwork. It makes a big difference in my productivity. And I'm just basically a happier person at the end of the day," he said.

Helmick isn't the only one who has experienced a change in outlook and attitude by riding instead of walking miles every day behind a mower. "My workers can't imagine doing a lawn without it. They're hooked," he said. "They like working a lot more now."

The attachment has also provided Helmick with a new pool of potential employees to choose from since it holds adult operators of most ages and sizes. Before the Velke, Helmick couldn't get his 15-year-old brother to work for him because of the physical demand of the mower. "Now I can't get rid of him," he chuckled. "He just loves it."

This increase in productivity and work enjoyment has allowed Helmick and his workers to significantly increase the number of yards they cut each day — which means an



The Velke turns a walk-behind into a rider.

increase in company profits. "I've been able to increase my mowing sales as well as my profit margin since each worker is able to do more in less time," he explained. "It has been one of the biggest improvements to my bottom-line this year."

Of course, increasing profits would be negated if Helmick had to invest in a bigger trailer to transport his new piece of equipment. Fortunately, that wasn't the case. "Because the attachment folds-up under the mower for transport, it doesn't require any additional room," he said. "It's really versatile, too. I can switch it from one mower to the next in a of minutes."

Helmick is also surprised at how maneuverable his mowers are with the new attachment. Not only can he mow tight areas since the Velke makes zero-point-radius turns, he can go backward as well as forward, and even traverse hills.

Now that Helmick has been able to increase his company's productivity and profits, he is planning to expand his business even further. Interestingly, he thinks the Velke helps him market his company and win new business.

"We attract a lot of attention riding behind our mowers. We have customers come out and watch us...and neighbors will actually stop on the street and stare, allowing us to start a conversion which often leads to more business," he said.

He just acquired another Velke and will buy more as his business expands. "It has become an essential tool in making my current business productive and profitable, and helping my business grow."

So how is that three-acre property going now that he rides instead of walks? "Piece of cake," he said. "Now that fatigue isn't a factor, I'm bidding a lot more larger properties." ■

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THE EXCEL HUSTLER™ 3-Way rotary mower gives operators the option of mulching, side discharge or rear discharge from one mowing deck. The heavy-duty, welded steel deck is designed with baffles that can be removed or changed in minutes.



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The 3-Way mowing deck comes in either a 60- or 72-inch model, and works on five models of the Hustler outfront, zero-turning-radius tractors. Buyers have several options in horsepower, fuel type and price.

Circle 126 on reader service card

The **Innovator** from Innovator Manufac-

turing grinds everything from yard waste to pallets. The materials are then blown out of the grinder in one action without augers or conveyor belts. The patented rotor design uses no screens to control product size.

The Innovator is tolerant of metal contaminants, fuel efficiency and few moving parts.

Circle 127 on reader service card

Prairie Buffalograss and 609

Buffalograss (a more intense blue-green color than Prairie) are two new strains of common buffalograsses available from The Turf Farms of Crenshaw & Douget.

These turfgrasses thrive with minimal irrigation and are resistant to disease and temperature extremes. The two types are fine-bladed grasses that require less water and fertilizer than other common turfgrasses. Both Prairie and 609 buffalograss are all-female strains that are low growing without seed heads, a feature which minimizes or eliminates the need to mow depending on the appeal.

Prairie and 609 Buffalograss are said to provide a quality turf for most residential landscape sites and has been successfully installed in a number of commercial developments.

Circle 128 on reader service card

The VQ801 series vacuums is now available from **Billy Goat Industries**. The VQ series vacuums replace the PB series with more power, a wider cleaning path and a dramatic reduction in noise.

The VQ801 series features a new volute housing and impeller design allowing the vacuum to operate more quietly without sacrificing power. Featuring a 33-inch wide cleaning path, five forward speeds



and one reverse, the VQ801 series makes quick work of debris. Ergonomically designed handles and controls make operation convenient.

(continued on page 58)

GUTS.

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USE READER SERVICE #60

Products

(continued from page 56)

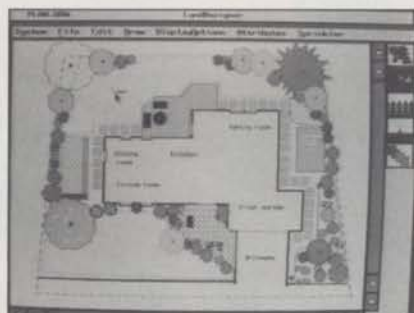
For increased safety, the entire VQ801 series employs a special rod diverter which keeps objects from entering the hose intake when the hose attachment is not in use.

Push or self-propelled, the VQ801 series comes standard with either an 8-h.p. Briggs & Stratton IC or 8 h.p. OHV Honda gasoline engine or an 8 h.p. OHV Honda propane engine.

Circle 129 on reader service card

LABB Systems/Software added Green Thumb's computer-aided design (CAD) package, LandDesignerPro, to its line of IBM PC compatible software products.

LandDesignerPro will create architectural landscape drawings in both plan and elevation formats. LDP has a 12 layer-deep flexibility and architectural



drafting symbols that keep complicated designs flexible.

LDP automatically builds accurate cost estimates, materials lists, plant lists and essential reports. A sprinkler system layout feature has the ability to test

projected coverage and flow usage before turning a shovelful of dirt. Fully integrated with a plant library of trees and ground cover, the LandDesignerPro enables fast and highly specific plant searches for a specific growing zone. The DFX import/export feature allows drawings to be exchanged with other CAD programs.

Circle 130 on reader service card

LESCO has introduced Accu-Wet non-ionic wetting agent, a new formulation of LESCO-Wet that can help reduce irrigation requirements by up to 50 percent.

Accu-Wet is labeled for use on turf, ornamentals and landscape areas. It is competitively priced at less than \$10 per gallon (with additional quantity discounts available).

Like LESCO Wet, Accu-Wet can be applied via LESCO's Accu-Rate injector gun, an ideal delivery system for all LESCO liquid iron and micronutrient products, insecticides and systemic fungicides.

Circle 131 on reader service card

York Rakes added a truck mounted broom to its new line of brooms.

The York broom model TFB328 mounts to the truck's snow plow hitch frame and is powered by a hydraulic motor hooked to the truck's hydraulic system. The broom may be angled to a maximum of 30 degrees left or right. The angling feature may be converted to hydraulic operation by replacing the manual control with a 10-inch stroke cylinder.

Standard features include adjustable caster wheels, single point raise/lower storage stands on each side of the unit and the broom drum has been mounted on pillow block bearings for their ease of access and maintenance.

Model TFB328 is available in an 8-foot width, while other sizes are available to the customer upon request. In addition, the new broom may be equipped with all polypropylene, crimped wire or a 50/50 combination of these convoluted brush sections at no additional cost.

Circle 132 on reader service card

Calendar

NOV. 10-13 New York Turfgrass Association Turf & Grounds Exposition, Rochester Riverside Convention Center, Rochester. Contact: NYSTA, P.O. Box 612, Latham, N.Y. 12110; 800/873-TURF.

NOV. 11-13 Solid Waste Composting Council, Third Annual Conference, Vista Hotel, Washington, D.C. Contact: SWCC, 114 South Pitt St., Alexandria, VA 22314; 703/739-2401.

NOV. 16-18 Green Industry Expo, Indiana Convention Center, Indianapolis. Contact: Green Industry Expo, 1000 Johnson Ferry Road, NE, Suite C-135, Marietta, GA 30068-2112; 404/973-2019.

NOV. 17-18 Strategies for Today's Business Climate, co-sponsored by the University of Massachusetts Cooperative Extension System and the Massachusetts Nurseryman's Association, Marriott Hotel, Worcester, MA. Contact: John Bragg, 508/534-1775 or Kathleen Carroll, 413/545-0895.

NOV. 19-21 TCI Expo '92, sponsored by the National Arborist Association and The International Society of Arboriculture, Baltimore Convention Center. Contact: TCI Expo, P.O. Box 1094, Amherst, NH 03031; 800/733-2622.

NOV. 24 Dr. Alex Shigo, How Things Move Into and In Trees, sponsored by New Hampshire Arborists Association, Alpine Grove, Hollis, N.H. Contact: Bill Collins, 603/641-6635 or 603/485-4761.

DEC. 2-4 39th Rocky Mountain Turf Conference and Trade Show, Currihan Hall, Denver. Contact: RMRTA, P.O. Box 29, Franktown, CO 80116; 303/688-3440.

DEC. 7-10 The Ohio Turfgrass Conference & Regional Show, Cincinnati Convention Exposition Center, Cincinnati, Ohio. Contact: OTF, 2021 Coffey Road, Columbus, OH 43210; 614/292-2601.

DEC. 8 Clean Lawn's Lawn Care Association Pa. meeting (LCAP), Embers Inn, Carlisle, Pa. Contact: Ron Keafer, 717/540-0661.

DEC. 8-10 Georgia Turfgrass Conference & Show, Georgia International Convention and Trade Center, Atlanta. Contact: Sarah Bundschuh, GTA, 5198 Ross Road, Acworth, GA 30101; 404/975-4123.

DEC. 15-16 Turfgrass and Ornamental Pest Control Workshop, Turfgrass Technology Center,

Marion County Extension Office, Indianapolis. Contact: Jeff Lefton, P.O. Box 688, Carmel, IN 46032; 317/846-7020.

JAN. 3-8 Advanced Landscape Plant IPM Short Course, sponsored by the Maryland Cooperative Extension Service, University of Maryland. Contact: David Laughlin, University of Maryland, Dept. of Entomology, Symons Hall, College Park, MD 20742; 301/405-3913.

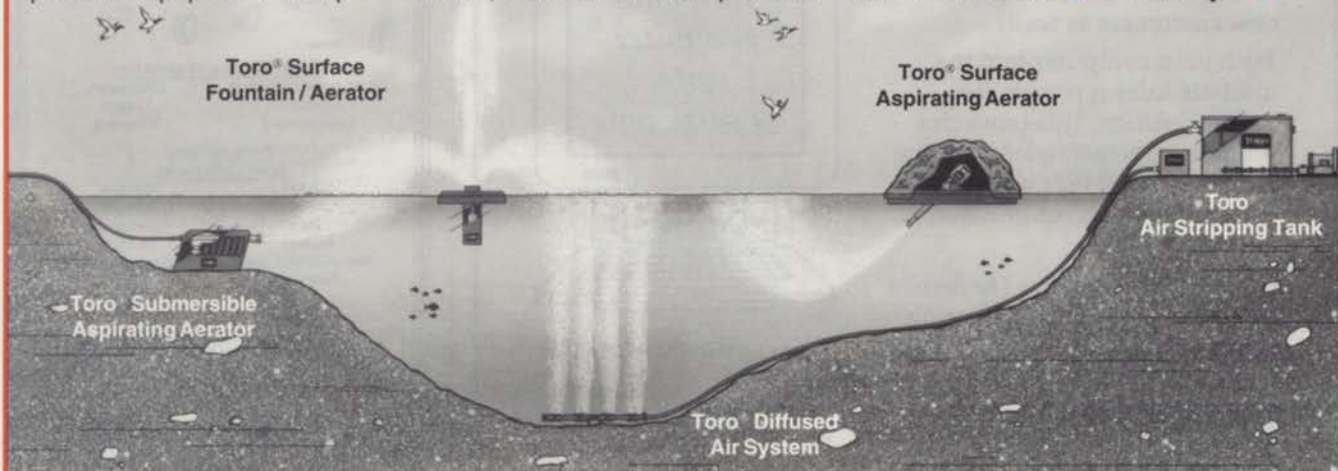
JAN. 5-7 63rd Annual Michigan Turfgrass Conference, Holiday Inn - South Convention Center, Lansing. Contact: Kay, MTF, P.O. Box 80071, Lansing, MI 48908.

JAN. 11-14 Advanced Turfgrass IPM Short Course, sponsored by the Maryland Cooperative Extension Service, University of Maryland. Contact: David Laughlin, University of Maryland, Dept. of Entomology, Symons Hall, College Park, MD 20742; 301/405-3913.

JAN. 15 8th Annual Mid-Florida Turfgrass Conference, sponsored by the University of Florida Cooperative Extension Service, Sanford, Fla. Contact: Uday K. Yadav, 407/323-2500 ext. 5559.

JAN. 4-6 Ontario Turfgrass Symposium, University of Guelph, Ontario, Canada. Contact: ■

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The Irrigation Revolution

(continued from page 21)

ing complete project managers," he said. New radio control packages allow the contractor, from a central location, to control irrigation systems as far as 10 miles away.

"This uses a trunk radio similar to what the police use," Wright said. "We're developing a lot of new products around that type of application, targeting folks that want to get into total management."

The extent to which landscapers are involved in installation vs. maintenance varies widely from market to market.

According to Clark, virtually all landscapers in California -- his primary sales region -- do irrigation, and low-volume is the big trend. California, where supplemental irrigation is mandatory, tends to set the pace for the irrigation portion of the landscape business.

"Landscapers are going to more localized irrigation of plant materials, especially shrub beds. I see an increase in shrub plantings and a decrease in turf area," Clark said.

"On the West Coast, almost every job is a turnkey, and a landscape company does the irrigation," said Gene Johnson, manager of marketing and sales for Weather-matic, a Dallas supplier. "In Texas, the Northeast, the North Central and up in the Rocky Mountain

region, more irrigation is installed by people who are irrigation contractors."

More interest is being shown in "micro" systems, he said, which cover many types of low-precipitation irrigation. "A lot of people thought drip would be the answer but now have second thoughts because of the added maintenance. Drip systems clog up, and people are always cutting the tubing when they're working in beds," he said.

PERCEPTION. In drought-sensitive California, the sight of sprinklers watering highways from center strips has, over the years, excited a great deal of outrage. Don Olson, owner of Olson Irrigation, a Santee, Calif., manufacturer, said most California landscaping involving individual plantings now employs drip or low-volume spray.

The Olson TH-12 is used by Kelly's crews to retrofit flawed irrigation systems. On this device, which is typical of others on the market that do a similar job, all drip components are screwed onto the top of a half-inch riser built into the head.

Mark Lurey, owner of ML Irrigation Systems, Laurens, S.C., supplies drip and minisprinkler systems, mostly to greenhouses and orchards, which in turn grow plants and trees for landscapers, although some of his business comes directly from landscapers.

"You first must evaluate what type of water you have and what type of filtration you need. Drip involves smaller orifices than sprinklers. Filtering the water is the most important thing to avoid getting your dripper stopped up," Lurey said. "Most landscapers working with drip were exposed mostly to pop-up and gear-driven sprinklers. They know the basics. It's just that they're used to using PVC instead of polyethylene tubing."

Sophisticated, but economically priced water management systems are now beginning to flood the market. Rain Bird's Irricalc, for instance, offers a user friendly calculation software package. "You punch in environmental conditions and it tells you how long to irrigate." And Rain Bird's new Xerigation line runs the gamut of low-volume hardware.

"Most major manufacturers have recognized the need for better water management tools," Clark said, "but the products are not what saves water. It's the people operating the products."

"A smart operator can turn an inefficient system into an efficient one. These new products make it easier, but you have to know how to use them. What this industry needs to do is to better educate its people." ■

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

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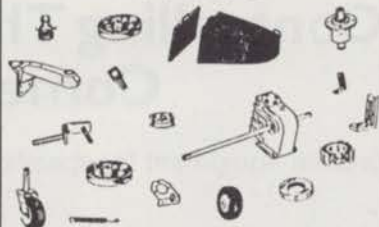


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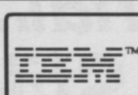
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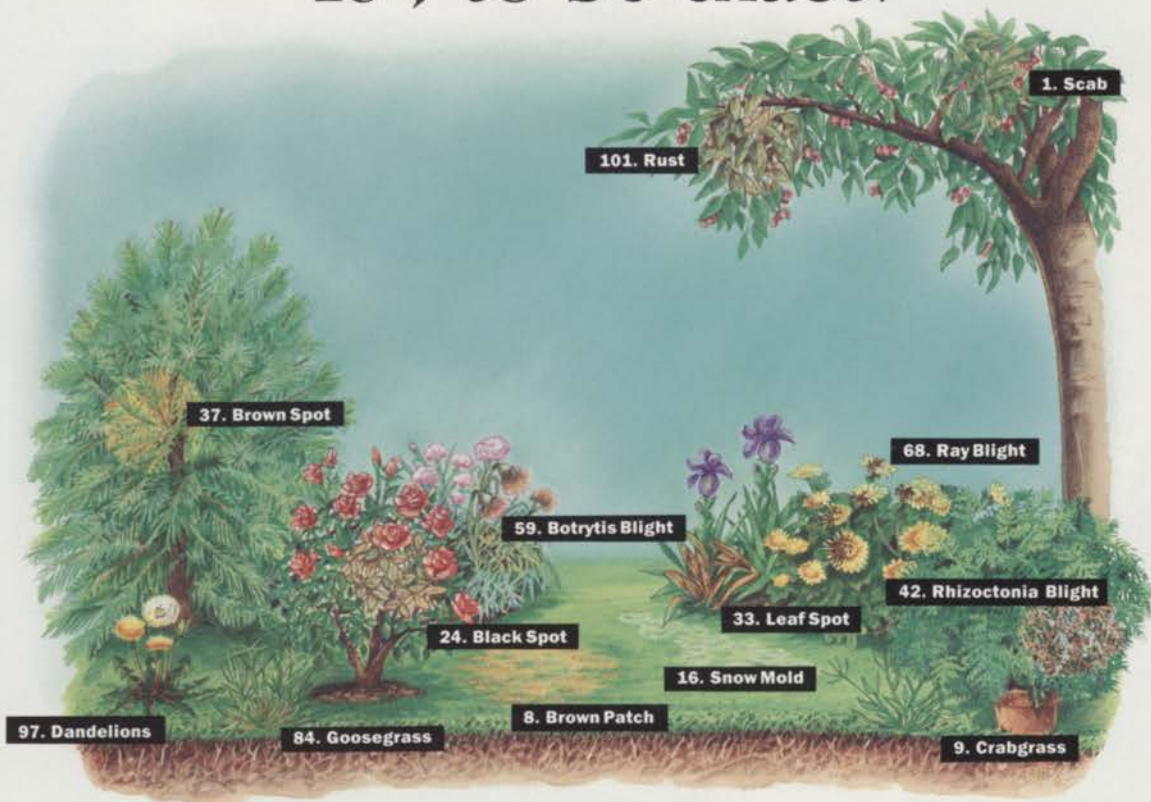
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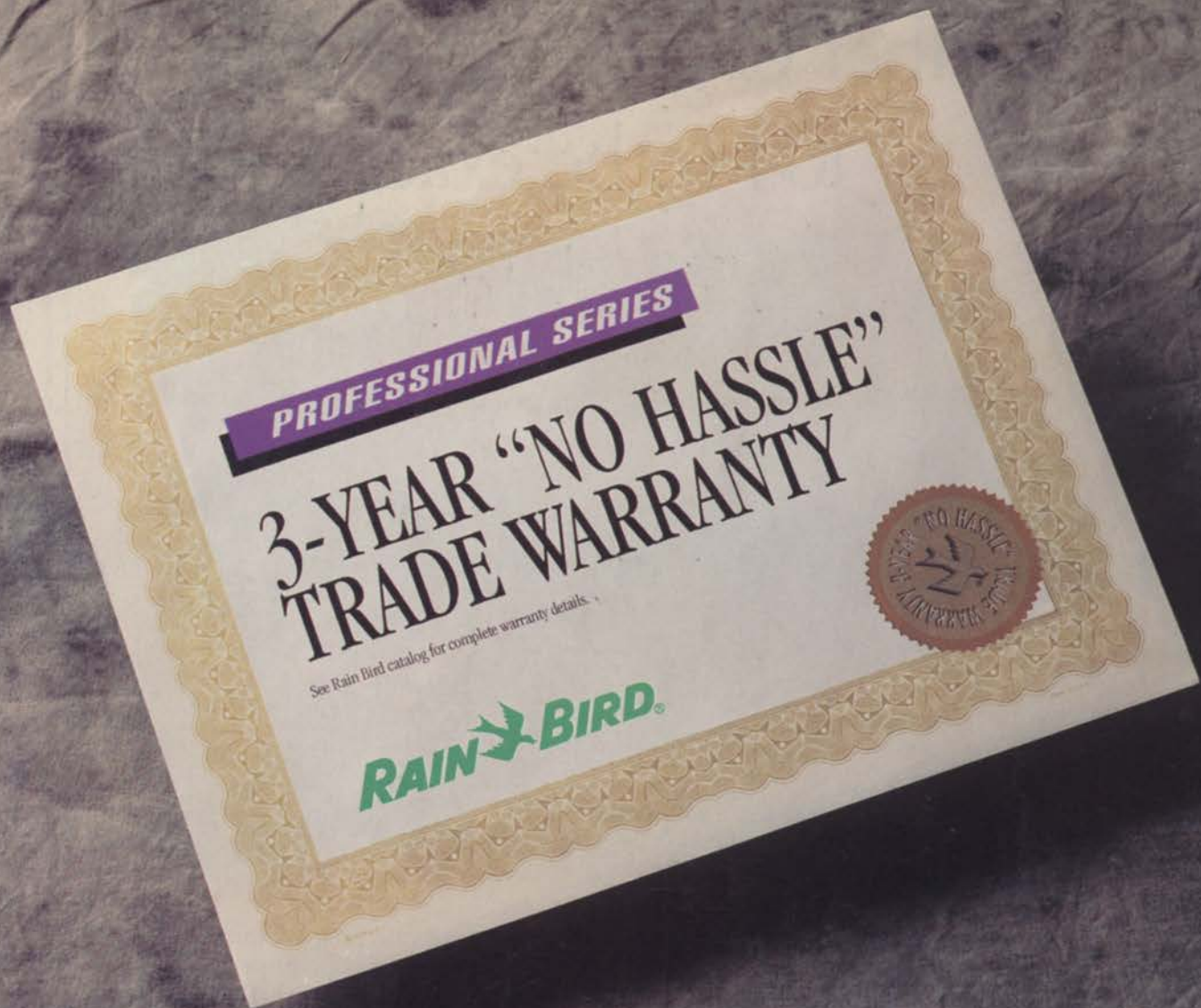
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