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Mower Maintenance
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Diagnosing Woody
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- Contains a high level of endophyte that enhances insect resistance.
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- Rich dark green color with good mowing quality.
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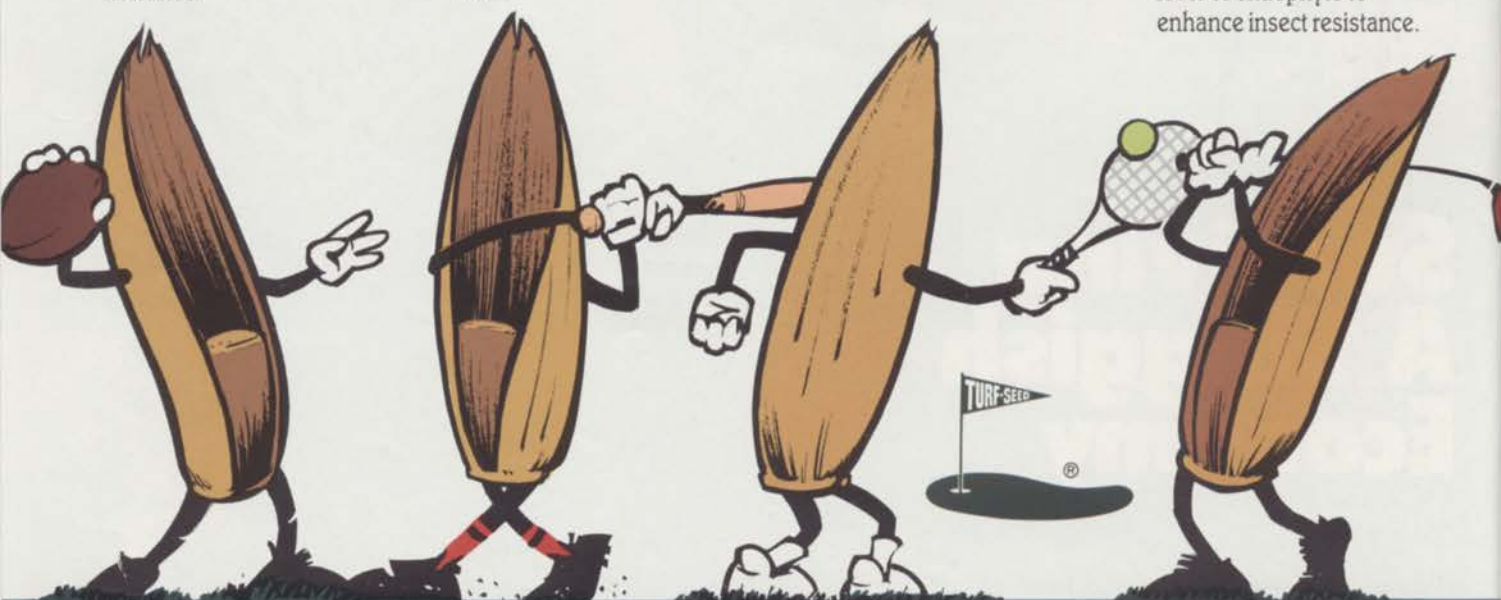
- The number 1 variety in the 1986 National perennial ryegrass trial.
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- Good performance under low fertility and improved color and growth under cool weather conditions.
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246 Sunrye

- Very dark blue-green colored turf-type variety.
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FORMERLY ALA MAGAZINE

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EDITOR'S FOCUS

THE PROFESSIONAL LAWN CARE

Association has reissued its advertising guidelines to encourage and remind lawn maintenance operators to be responsible in marketing their services.

The industry has been regularly attacked, most recently by the General Accounting Office, for "false and misleading" advertising claims. In essence, the GAO report said that professional applicators are making claims that lead their customers to believe that all pesticides are safe and non-toxic.

The report went on to say that applicators are misrepresenting their services and convincing consumers, who might not otherwise buy their services, to get their lawns treated. In many instances, the GAO referred to advertising brochures which have been off the market for a number of years.

Although the PLCAA questioned the methodology of the GAO report, it expressed a desire to sit down with the Federal Trade Commission and the Environmental Protection Agency to develop guidelines that can be approved or OK'd by them.

The FTC is technically supposed to regulate all advertising, while the EPA regulates product manufacturers, formulators and distributors. However, from a moral standpoint, the industry ought to abide by the same guidelines placed on manufacturers, according to Barry Troutman, PLCAA's director of education.

"Over the years, the industry has struggled with how to aptly describe the safety of its products and how to put risks into proper perspective," Troutman said. "It's hard to communicate."

To fill the gap until a meeting and guideline writing session takes place, the association reissued its guidelines, developed and approved by its board in 1988, as a reminder to lawn and landscape maintenance operators.

First and foremost, applicators should avoid any statement that directly or indirectly implies a pesticide is recommended, approved or endorsed by any federal or state agency.

In addition, avoid inflammatory references that do-it-yourselfers may have greater risk of pesticide exposure or that a professional service is safer for the environment.

Other suggestions for phrasing information in your literature and sales presenta-



tions include the following:

Use EPA-registered instead of EPA-approved. Lawn maintenance products have been reviewed by the EPA and have met criteria for registered use, but the EPA does not officially approve a product; rather, EPA registers products for use according to label instructions.

A material can be used safely instead of a material is safe. The EPA determines that a product "can be used without unreasonable risk of adverse effects" before it allows its sale or use. It's not saying a product is safe, but establishing the requirements for using the product safely.

Use the words material, product or controls instead of chemical. These terms more accurately describe the products the industry uses, including both liquid and dry formulations.

Control or manage instead of kill or destroy. Eradication has never been a realistic goal. Applicators need to guide customers away from that perception, concentrating instead on controlling growth of both desirable turf and unwanted weeds.

Hazardous instead of dangerous. Danger is a broad term used by the EPA as a signal word for the highest potential toxicity. The term hazardous is more broadly used describing a number of products in lawn maintenance.

Each and every operator has the responsibility of circulating brochures meeting established advertising guidelines to the marketplace. The same techniques should be applied to verbal sales presentations and when answering customer concerns. — Cindy Code

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LETTERS

KEEPING UP

Your magazine has been a tremendous help. The articles keep me informed on new and different products on the market, as well as serving as good educational tools. It's nice to know what is successful in your part of the country as well as all over the United States. Keep up the great work.

*R.J. Tinsley
Tinco Lawn Care
Northport, Ala.*

Being in a rural northern Wisconsin area, your magazine is one of the few means we have of keeping up on what is happening in metropolitan areas and in the industry as a whole. Some articles on smaller businesses in rural areas instead of metropolitan areas would be interesting and informative to many small businesses. Keep up the good work.

*Dennis Teece
Lakeland Services Unlimited
Lake Tomahawk, Wis.*

Your publication is more technically precise and thus helpful (Strategies for Turfgrass Renovation) than most. The reader service cards are good sources for otherwise unknown or unavailable products.

You know what I like the most though? It takes away the feeling of isolation and frustration that comes with the territory of owning and operating a landscape maintenance business. I feel I'm in good company with you guys (and gals) along. Thanks for your publication.

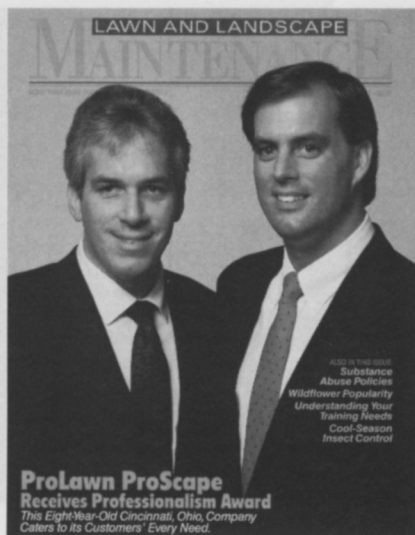
*Chris Howell
Tamata Landscaping
Albuquerque, N.M.*

CHEMICAL CONCERNS

I appreciate your magazine. Your articles are informative and have helped me with both the way I do business and the way I think about my business.

My main concern is our industry's dependence on chemicals. I try to use safe, organic methods as much as I can. I use products made by Safer and Ringer. They are a little more expensive in the short run, but prove to be cost effective in the long run.

Many people in Northern California are very ecologically aware. We need to find



alternatives to 2,4-D and not push to reduce regulations of its use. More IPM articles would be appreciated.

*Michael Kirschner
Michael's Yard Care
Arcata, Calif.*

BOOST YOUR BUSINESS

I like your articles on the complete aspects of an individual's business. It's nice to compare their company ideas to mine (e.g., equipment, uniforms, philosophies, etc.).

I am primarily a landscape contractor and I like to see company profiles of other landscape contractors doing what I do.

*M.A. Schrandt
Kenosha Landscaping
Kenosha, Wis.*

We are a small, profitable business and plan to keep it that way. We really have enjoyed your magazine and profiles on other businesses. You have made some good points in your articles, and we will continue to read your magazine. Thanks.

*James Schwalbe
Wildwood Landscaping
Big Sky, Mont.*

We want to know what you think. Please address all correspondence to Lawn and Landscape Maintenance, 4012 Bridge Ave., Cleveland, Ohio 44113. All correspondence may be edited for space and style.



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TORO SHIFTS LAWN-BOY PRODUCTION TO THE SOUTH

THE TORO CO. PLANS TO CLOSE ITS Lawn-Boy plant in Plymouth, Wis., July 6 putting 229 people out of work.

Lawn-Boy corporate and engineering offices in Plymouth, employing 125 people, will remain open.

Toro, based in Minneapolis, Minn., will shift its Lawn-Boy riding products and space heater manufacturing operations to an existing Lawn-Boy plant in Sardis, Miss. The company also has an engine manufacturing plant in Oxford, Miss.

Toro said it would discontinue production of Lawn-Boy snow throwers and tillers, which also have been manufactured at the 460,000-square-foot Plymouth plant. Toro, already considered strong competitors in the snow thrower market, bought Lawn-Boy from Outboard Marine Corp. for \$85 million last November.

"In analyzing capacity needs after dropping the snow thrower and tiller lines, all the capacity was in the two Mississippi plants," said Dave Mona of Mona Meyer & McGrath. "Plymouth was the largest and most vulnerable."

The plant closing is not expected to have any effect on product shipments. The plant currently employs 173 hourly workers and 56 office workers.



Lawn Boy mowers will be made in Mississippi.

As part of future consolidation plans, Toro will also open a worldwide parts distribution center outside Minnesota for Toro, Lawn-Boy and Wheel Horse Product lines. The Plymouth plant is one site under consideration.

WILKINSON DEPARTURE RESULTS IN SCALED-DOWN 3PF

The Pesticide Public Policy Foundation, formed in 1983 to provide ammunition to

those fighting a myriad of pesticide regulations, has decided to drop the federal portion of its mission and confine its support to state and local efforts.

The 3PF board of directors decided to take the action as the only response it could make to large cutbacks in contributions made by its 13 member organizations. In doing so, the board rejected the other option being considered — to close the foundation altogether.

The foundation's educational project to develop a series of video training modules for states to use in recertifying applicators won't be affected. It's funded by the Agriculture Department and the Environmental Protection Agency.

Because member groups appear to be increasing their visibility on the federal scene, 3PF's continued role has to be on the state and local level, according to the board. But even that activity will be scaled down.

The decision was made at a meeting in Washington, D.C., two days before Jim Wilkinson's resignation as executive director took effect. He will not be replaced, but his N. Kingston, R.I.-based company will continue to handle 3PF's remaining day-to-day operations.

The four-hour meeting was closed to the public at the urging of two corporate board members who felt members might feel inhibited discussing monetary issues if the meeting were open. Legal counsel agreed saying "I don't think you want the money aspects that might be discussed here to be public knowledge."

But 3PF chairman Michael Watson, representing the Utility Arborists Association, said in an interview after the meeting that the organization's annual operating budget of \$180,000 would be reduced by the restructuring to about \$20,000.

The organization had fallen at least \$40,000 short of its

(continued on page 8)

BROOKS' MOVE SIGNALS CHANGES AT PLCAA

IN WHAT IS BEING CALLED a "staff reorganization," Jim Brooks, executive vice president, Professional Lawn Care Association of America, announced he is resigning his post to concentrate on membership recruitment and the Green Industry Expo trade show.

"The lawn care industry continues to diversify, and PLCAA needs to make a more concerted effort in identifying and meeting the needs of all types of companies; particularly the smaller operator," Brooks said.

Brooks will remain in his post until a replacement is made.

Rick Steinau, PLCAA president, said a three-member search team had been established and is developing criteria for

its new chief administrator. The committee consists of Steinau, Neal DeAngelo, secretary/treasurer; and Bob Parmley, immediate past president.

Steinau said the committee hoped to have candidate recommendations to the board by August, with a replacement being named between August and the November conference and show.

While the board expressed surprise at Brooks' decision, some said it was inevitable.

"It was fairly obvious that certain things had to change inside the association. This was recognized by Brooks first," Steinau said. "Jim realized that he was probably most advantageous to the association solely concentrating on areas he is best in.

"As we grew, issues became more complex and diversified, and Brooks was feeling the pressures of being asked to do so many other things than he has had to do in the past six years as executive vice president."

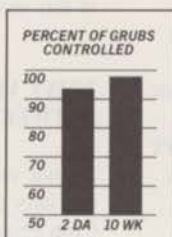
DeAngelo said he thought it was a tough decision for Brooks.

"I think Jim had to take a look at the status of the association and look at both his strong and weak points," he said.

Jerry Faulring, a director, also said Brooks made the right decision to benefit PLCAA.

"I was surprised, but not totally blown away," he said. "Jim knows that the group's had the most success in recruiting members when it got out in the field and talked to operators."

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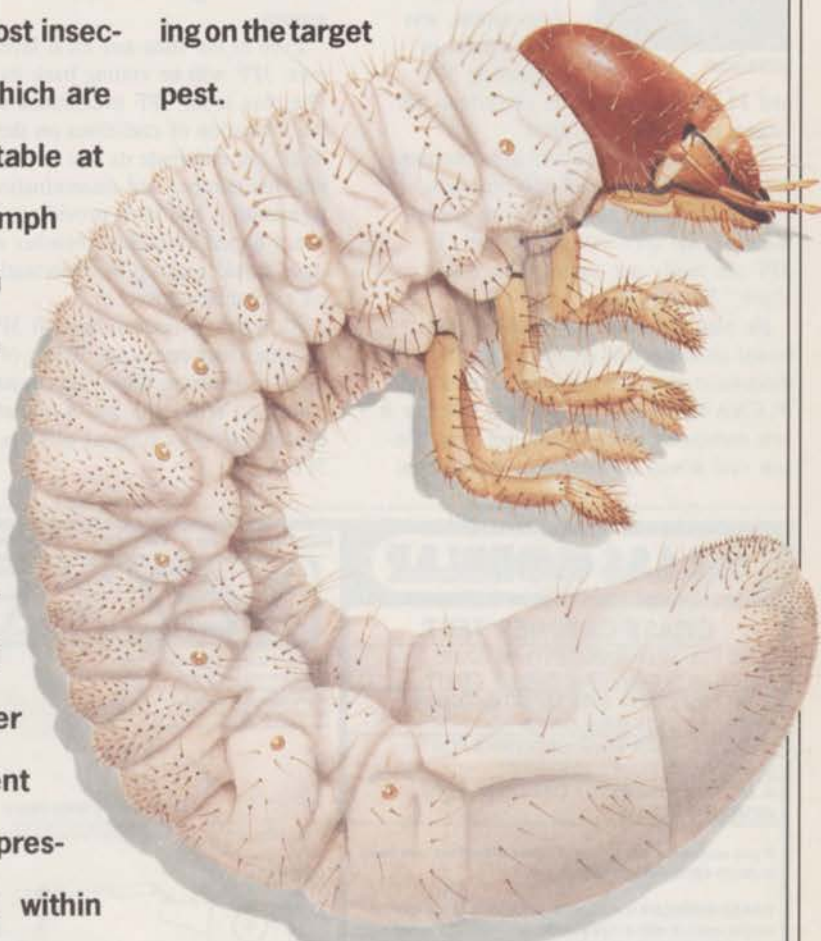
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budget and had accumulated a small debt that needed to be paid off, Watson said. He would not disclose the size of the debt.

Apparently, the role of the Professional Lawn Care Association of America played a large part in 3PF's decision to retrench. PLCAA, along with the National Arborists Association, was instrumental in organizing 3PF, and PLCAA continued to contribute the largest chunk of 3PF funds.

The foundation was unable to recover from PLCAA's reduced contributions, coupled with the fact that "certain segments of the user industry covered by 3PF are really not contributing a fair share," Watson said.

He also acknowledged that previous board meetings had included lengthy discussion over the dominating role that PLCAA has played in 3PF and whether it was exercising undue influence. But Watson said it was no longer an issue at the

time of the May 2 board meeting.

The issue of financing had become so overwhelming at previous board meetings, Watson said, that the board was unable to focus on its mission.

"The entire board felt we had been struggling with this financial issue for several months, and I felt it was starting to drain the organization. Our energies were on solving financial problems rather than dealing with issues," he said.

Watson said the board also felt that 3PF could remain involved in national issues on a narrower scale, limited to critical issues, through voluntary efforts of user groups.

Even at the state and local level, however, 3PF will be cutting back its activity. The plan is for 3PF to continue to help in the formation of coalitions on the state level, but eliminate its two newsletters, its toll-free number and dissemination of information it had been providing. The board hoped individual member organizations would pick up the information slack on a voluntary basis.

Although Wilkinson has left 3PF to become chief operating officer of Lawnmark of Hudson, Ohio, his consulting company, Wilkinson and Associates, will continue to offer support services for 3PF.

Paul Skarupa, a Wilkinson associate, is to field inquiries at 401/294-6133 and direct them to members of the State Affairs Committee or to other 3PF board members. The board may reconsider even that scaled-back arrangement at the end of this year, Watson said.


JOINT VENTURE APPROVED BETWEEN SANDOZ, NOR-AM

A joint venture of the agrichemical and specialty chemical divisions of Sandoz Crop Protection Corp. and Nor-Am Chemical Co. was approved at the end of April by a European executive board.

Sandoz Ltd., headquartered in Basel, Switzerland, and Schering, AG, headquartered in Berlin, West Germany, are the parent companies of Sandoz and Nor-Am respectively.

The 50/50 joint venture will "project the company into a major player in the world market," according to George Jones of Nor-Am. "The companies are compatible in a number of areas and it will enhance our research capabilities."

Jointly, the company offers insecticides, miticides, fungicides and fertilizers to the turf and ornamental industry.



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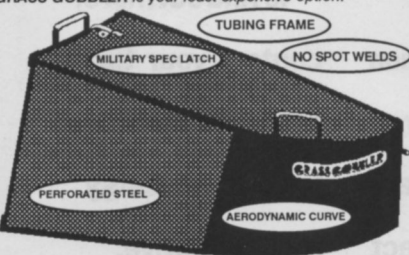
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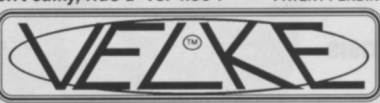
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EPA APPROVES CHANGES TO CHIPCO FUNGICIDE LABEL

CHIPCO® 26019 WP fungicide from Rhone-Poulenc Ag Co. is now registered to control necrotic ring spot and can be tank mixed with compatible fungicides.

Necrotic ring spot, a recently identified component of the fusarium blight complex, is a serious disease of turfgrasses, especially Kentucky bluegrass.

Tank mixing Chipco with compatible fungicides broadens the spectrum of disease control with one application. In addition, the product can now be used to control a spectrum of 14 diseases in a wide range of ornamental landscape plantings in any site.

ACQUISITION POSITIONS DAVEY TREE FOR GROWTH IN QUEBEC

The Davey Tree Expert Co. acquired Canadian Shade Tree Service Ltd., Montreal, Quebec, Canada.

Founded in 1933, Canadian Shade is the largest residential tree care company in Montreal. With the acquisition, Davey expands its Canadian operations into Quebec adding to current operating divisions in Ontario, Alberta and British Columbia.

With the merger, Davey is positioned to expand Canadian Shade's strong business base in Quebec and pursue utility line clearing opportunities, said R. Douglas Cowan, president and CEO of Davey Tree.

Bill Kelly, president of Canadian Shade, will continue managing local operations. The new business will be incorporated into Davey's Eastern Canada company headquartered in Burlington, Ontario.

SEVIN INSECTICIDE REGISTERED FOR CONTROL OF HARMFUL TICKS

Sevin® brand carbaryl insecticide for control of deer ticks and other ticks identified as vectors of Lyme disease has been approved for registration by the Environmental Protection Agency, according to Rhone-Poulenc.

A single application of carbaryl at two pounds per acre is said to provide more than 95 percent control of deer tick nymphs on residential lawns.

Data has shown that a majority of Lyme disease transmissions occur at the tick's nymphal stage of development in June and July when people's outside activities peak.

Lyme disease has affected more than 25,000 Americans in 43 states. Diagnosis is difficult because the disease's only uni-

que symptom — a red, expanding lesion at the site of the bite — is absent in 30 to 40 percent of the cases.

IPM COMPENDIUM AVAILABLE FOR \$12

Copies of the Environmental Protection Agency's "Integrated Pest Management for Turfgrass and Ornamentals" is available from the Golf Course Superintendents of America.

The book, a 337-page compendium of the latest IPM research and information

was co-authored by Ann Leslie of the EPA and Robert Metcalf of the University of Illinois.

To order a copy, send \$12 to GCSAA, Office of Government Relations, 1617 St. Andrews Dr., Lawrence, Kan. 66047-1707; or call 800/472-7878 or 913/841-2240.

POPULAR WALK/RUN RETURNS TO EXPO

Briggs & Stratton Corp. will host its third annual run/walk to benefit Special Olympics at the International, Lawn, Garden

FLORIDA TURFGRASS ASSOCIATION Annual Conference and Show



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and Power Equipment Expo, Louisville, Ky.

The 5K, 3.1 mile race, will be held at 7 a.m., Monday, July 30. The event is



A past walk/run starting line.

open to all show attendees and will be held on the Expo grounds.

Briggs & Stratton will match all proceeds from the race which will be shared by the Special Olympics' programs of Kentucky and Wisconsin.

For their \$5 donation, runners will receive a commemorative T-shirt and race number. Bus service from all major hotels to the Expo grounds will be provided.

DU PONT REINFORCES ITS COMMITMENT TO SIDURON

The Du Pont Co. announced its commitment to support Environmental Protection Agency re-registration of siduron, the active ingredient in Tupersan herbicide.

Tupersan is used as a preemergent to control crabgrass and other annual grasses in established and newly seeded turf. Tupersan is the only herbicide registered for use on newly seeded turfgrasses, allowing it to be applied the same day without harm to most turfgrasses.

The EPA requested eight new environmental fate studies estimated to cost Du Pont more than \$2 million.



Tupersan

Tupersan and fertilizer formulations containing siduron will continue to be available, except in California and Arizona, through the re-registration process.

LESCO SUES ECHO OVER RESTRAINT OF TRADE

LESCO Inc., Rocky River, Ohio, has filed a restraint of trade lawsuit against Echo Inc. and its distributors seeking injunctive and other relief. The suit was filed in the U.S. District Court for the Northern District of Ohio.

LESCO filed the suit in an attempt to prevent Echo from breaching or interfering with its contract which enables LESCO to distribute Echo trimmers, brush clippers and blowers. Such interference is in violation of federal antitrust law, according to LESCO.

Several court exchanges have taken place, but no agreements have been met, according to Stan Fisher, an attorney for LESCO. Settlement discussions are under court supervision and an agreement was expected as early as mid-June.

In the suit, LESCO said it obtained contractual rights on Feb. 23 to distribute Echo outdoor power equipment and introduced the line at its national sales meeting. On March 19, however, LESCO said it was told that Echo wouldn't sell its products to LESCO because of coercion and threats from certain Echo distributors and dealers.

LESCO seeks to enjoin certain Echo distributors and dealers from coercing or encouraging Echo to breach its agreement with LESCO.

According to Fisher, Echo's distributor advisory panel met with Echo March 16 and threatened to cancel spring orders if they continued to supply and deal with LESCO. The threats amounted to horizontal restraint of trade, according to Fisher.

"They didn't want another competitor in the marketplace. They're afraid of competing with LESCO," Fisher said.

LESCO continues to receive and sell Echo products pending continued negotiations.

The suit includes Rahrig Sales Inc., Forest, Ohio, and Burton Supply Co., Youngstown, Ohio, and 50 other defendants affiliated with the Echo distribution network.

LESCO has yet to determine the full extent of damages as the result of the breach of contract, but is seeking damages and costs plus punitive damages of \$20,000,000 in each of five specific claims against Echo and the other defendants.

The claims include antitrust violations, interfering with distribution, breach of fiduciary relations and breach of contract.

Echo based in Lake Zurich, Ill., is a subsidiary of Kioritz Corp., Tokyo, Japan. ■

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ASSOCIATION NEWS

AT FORMAL WHITE HOUSE CEREMONIES, First Lady Barbara Bush honored 60 firms and organizations for significant contributions in environmental landscape design and improvement.

The occasion was the 30th National Landscape Awards program sponsored by the **American Association of Nurserymen**. The ceremony marked the 14th

time in the program's history that a First Lady presented the awards and the 10th time they were held at the White House.

Recipients of the awards represented sponsors/owners, landscape architects and installation firms responsible for 20 landscape projects across the country. The outstanding feature of each project was its

deep impact on quality of life in the community.

The objective of the awards is to inspire industrial and commercial firms, private and public institutions and municipalities to participate in community environmental improvement through landscape design, said Lawrence Scovotto, AAN executive vice president.

"We are grateful to Mrs. Bush for her personal interest in this landscape enhancement program, as the resulting national attention has encouraged many others to make the same sort of investments in their own communities," Scovotto said.

Board members of the **Michigan Turfgrass Association** recently elected Fritz McMullen as its president. McMullen is a certified golf course su-

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perintendent for Forest Lake Country Club, Bloomfield Hills.

One of McMullen's first priorities will be appointing an environmental turfgrass specialist to help the foundation face the issues of the new decade.

Serving with McMullen as vice president will be Jim Bogart, Turfgrass Inc. Re-elected for 1990 were Gordon LaFontaine, Lawn Equipment Co., executive secretary; Kurt Kraly, Wilkie Turf, recording secretary; and Jeff Gorney, J. John Gorney Inc, treasurer.

All four incumbent board members were re-elected to their posts. They include: Dave Longfield in a second term representing the Northern Michigan Turf Manager's Association, Tim Doppel as lawn care representative, Ron Julip of the Sod Grower's Association of Michigan and Kraly as an at-large member.

Landscape contractors from around California will meet at the Sheraton Hotel and Conference Center in Concord July 12-15 for the **California Landscape Contractors Association** annual summer tri-board meeting.

Special events planned for the four-day meeting include the second annual LEAF golf tournament with proceeds going toward the landscape educational advance-

ment foundation.

In addition to the business meetings of the executive board, chapter presidents, women's auxiliary, LEAF trustees and associated member organization, a seminar on Proposition 65 and pertinent Cal/OSHA regulations is scheduled for the second day.

The **Professional Lawn Care Association of America** has literature promoting the industry's commitment to professionalism available for operators to distribute to their customers. About 250,000 copies of "A Professional Cares" have already been sold.

Two new editions of the series are ready. They are "A Professional Cares About Your Family" and "A Professional Cares About Our Community."

The literature is priced at \$8 for 100 copies, \$60 for 1,000 and \$250 for 5,000.

Also available from PLCAA on a subscription basis is its "Lawn Technician" newsletter. Called "the newsletter just for the pros who make things grow," it presents seasonal lawn care information, safety tips and humor in an easy reading style.

To start a subscription, contact PLCAA. The cost is \$55 per year plus \$2.50 for each employee.

The **Professional Grounds Management Society** has available copies of its sixth edition of "Grounds Maintenance Estimating Guidelines." This manual includes charts to guide operators in estimating the cost of a job, including the often overlooked hidden costs found in most projects. The cost for each manual is \$12 if a check is sent with the order and \$15 if billed. PGMS members can receive them at no cost.

The 1990 membership directory is also finished and ready for distribution. Cost is \$30 for non-members; free to members.

A long-awaited updated version of the plant hardiness zone map is available from the **U.S. Department of Agriculture**. The new map was needed because many nurseries experienced minimum winter temperatures that differed from those on the old map.

The 1990 map is based on information collected from 14,500 weather stations — more than twice as many as former maps. This version includes 21 zones compared to 10 zones on the 1965 version.

The 4-foot by 4-foot maps are available only from the Superintendent of Documents, U.S. Government Printing Office. Send a check for \$6.50 along with a request for stock no. 001-000-0455-04. ■

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Top row: Leaf-feeding caterpillar, Mealy bug, Japanese beetle, Bagworm, Gypsy moth. Bottom row: Cankerworm, Leaf skeletonizer, Tent caterpillar, Webworm.

FOCUS ON:

LANDSCAPE

RESPECTABLE GROWTH PREDICTED THIS YEAR

THE LAWN AND LANDSCAPE MAINTENANCE industry generally saw respectable growth last year and can expect that trend to continue for the 1990 season. Some problem areas existed in the Northeast, however, where an economic slowdown led to only minimal sales increases.

The National Landscape Association conducts an economic survey annually and tallies the results by geographic region: Northeast, Southeast, Great Lakes and Great Plains. The 1989 study contained too few responses from the Southwest and West Coast regions to provide reliable data.

Another study of the economy is not so optimistic. The National Association of Home Builders' report revealed the highest pessimism in seven years among that group's membership. About 41 percent categorized future sales as "poor."

Meanwhile the selling price of some

1990 EXPECTED LANDSCAPE BUSINESS

(Percent reporting expected change from 1989 sales.)

REGION	Percentage			Average Change
	Up	Same	Down	
Northeast	58	26	16	+13.0
Southeast	71	29	0	+26.5
Great Lakes	96	4	0	+16.9
Great Plains	93	0	7	+16.8
Survey Average	79	15	6	+16.7



existing homes in "hot spots" on the East and West coasts are stagnant or falling. The good news is that people are staying in their homes longer and may attempt to

upgrade their property with landscaping.

Respondents from the Northeast reported only an average growth of 6 percent over 1988. New residential landscap-

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ing declined 0.3 percent, while new commercial projects fell 1.8 percent. Renovation projects weren't much brighter, with residential work up only 5.5 percent.

Factors contributing to the slowdown included the numerous layoffs that occurred on Wall Street after the stock market crash, the rate of economic growth and high unemployment rates.

The Southeast presented an overall picture of reduced growth with the exception of Florida, which continues to boom. The region reported an overall sales increase of 29.1 percent for 1989.

New residential and commercial projects gained the most with growths of 21.9 percent and 19.1 percent, respectively. Renovation projects didn't share that prosperity; residential jobs decreased by 2.7 percent while commercial projects dipped 0.8 percent.

The vast destruction left by Hurricane Hugo may lead to renovation increases.

The Great Lakes region is in the midst of a resurgence assisted largely by two factors. First, factories are beginning to make a comeback after streamlining their operations and becoming more competitive on the world market. Second, the farmbelt has come back to life with worldwide demand for U.S.

grain up more than 35 percent in the last year.

Total landscape sales reflect the resurgence with a 20.3 percent overall increase. New commercial projects lead the way with 14.6 percent growth.

An additional factor in the increased work for the Midwest was an influx of people moving to the region from the East Coast, said Gary Thornton, Thornton Landscape Inc., Maineville, Ohio. Cincinnati, Ohio, particularly benefited from several corporations relocating their headquarters there.

The cost of living in the Midwest is much lower and these people are willing to spend money on creating nice landscapes.

Other factors that contributed to good sales last year were a rebounding from the Drought of 1988, and the fact that the Midwest is one of the few areas left in the country not having water shortage problems.

The Great Plains region reported an 18.6 percent growth in total landscape sales. New projects were in a slump with commercial jobs up 5 percent while new residential jobs were up a meager 3.5 percent.

The real winner in this region was renovation which jumped 20 percent. Appar-

ently, homeowners were eager to upgrade their homes with landscaping, sometimes foregoing a vacation or other luxury item.

The Pacific Northwest is probably one of the better markets to be in, with housing prices rising rapidly. In the late 1980s many baby boomers started moving to the area in search of economic opportunity and a cleaner, more pleasing environment.

The influx of people into the area has been phenomenal over the last five years, said Richard Ackerman, president, Northwest Landscape Industries, Tigard, Ore.

"The perception of the Pacific Northwest for a long time was that all it did was rain," he said. "That's changed and people have realized it is probably the most beautiful part of the country."

That shift in attitude has brought huge amounts of new industry into the area. This spring, his company had to turn away 192 potential customers, Ackerman said.

While Ackerman realizes there may be some small declines along the way depending on the economy, he said, this growth trend will probably last for quite some time.

When predicting sales for this year, those in the Southwest displayed the most enthusiasm with predictions of 26.5 percent growth. In contrast, the Northeast predicted only a 13 percent growth. ■

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IRRIGATION

NEW ORGANIZATION FORMED TO AID PRODUCT MARKETING

A NEW FIRM, FILTRATION IRRIGATION and Fertigation Co. has been formed as a manufacturers' representative organization to serve product manufacturers marketing to those respective fields.

The company was established to provide distributors and dealers the best available products from various represented manufacturers as well as specialized service, according to its President Jerome Gutman.

Previously, Gutman was president of Amiad U.S.A. Inc., a manufacturer of filtration and fertigation equipment. He organized and opened its U.S. sales and marketing in 1981, expanding the com-

pany nationally into a supplier of filters to the irrigation market.

The new company is located at 18155 Elkwood St., Reseda, Calif. 91335; 818/705-0215.

BACKFLOW PREVENTION SPOTLIGHTED IN NEW VIDEO

Watts Regulator has introduced a new video, "Spotlight on Backflow Prevention."

The video, approximately 20 minutes long, contains important information on the concepts of protection and conservation of safe drinking water.

It also reviews current backflow prevention products and gives the viewer

an introduction to Watts Industries and its backflow prevention devices used to protect safe drinking water.

The video is available on a one-month loaner basis or for purchase at \$15 each.

For more information or to place an order send video requests to: Advertising Dept., Watts Regulator Co., P.O. Box 628, Lawrence, Mass. 01842.

CENTURY RAIN AID EXPANDS BUSINESS

Century Rain Aid acquired the Louisville and Lexington, Ky., branches of Dixie Irrigation, expanding its sprinkler irrigation business to 17 locations. The branches will operate under the name "Century's Dixie Irrigation."

Century has added delivery service, contractor seminars and wider inventory in the new locations.

Debbie Anderson, who supervises both of the Kentucky branches, has a bachelor's degree in engineering and is certified by the Irrigation Association as a Level II irrigation systems designer.

TORO PARTICIPATES IN CONCEPT FOR FUTURE

GE Plastics' "house of tomorrow," Pittsfield, Mass., has become both a designer showcase and perpetual laboratory for the demonstration and use of designs and materials that will influence the way homes are built in the future.

Extensive landscaping surrounding the house is being irrigated with advanced automatic underground sprinkler system components molded almost entirely from GE resins.

All sprinklers, valves and the controller were specified by The Toro Co. The irrigation system included 111 570C Series spray heads; 39 Super 700 Series gear-driven rotary sprinklers and 12 250 Series electric valves. It's operated by Vision, a new Toro residential controller. ■

SPRINKLER INVENTOR RETURNS FOR HONOR

WHAT IS BELIEVED TO BE the world's largest automatic sprinkler irrigation system in residential use was recently marked by a historical plaque at Fair Lane, Mich., the estate of auto pioneer Henry Ford.

Among those attending the dedication were people from the Detroit company that installed the original system circa 1925.

Sixty years ago, John Brooks, founder of John Brooks Inc., installed at the Ford estate sprinkler heads and valves which he invented. Current company owner Marc Dutton and field supervisor Al Couck have relocated a section of the antique irrigation system.

The contractor moved the five-station, three-inch copper and bronze pipes to a walkway for easier viewing. The pipes originally were camouflaged near a 500-yard-long meadow, which served as Ford's personal putting green.

"It was placed well back in the woods so there were unbelievably heavy mosquitoes," Dutton said.

Bazooka valves, named for their long tubular shape, distribute water to zones within



the various lawns.

"As soon as you see it you think of a bazooka weapon, like in the army," Dutton said. Bazookas are the equivalent of satellite controllers now used on golf courses.

The early automatic switching devices contain one cylinder and are powered by hydraulic pressure generated by water. Today most sprinkler valves are controlled electrically.

The bazooka valves, sprinkler heads and gauges had to be disconnected to move the 250-pound section. While digging three feet down, the contrac-

tors discovered a problem.

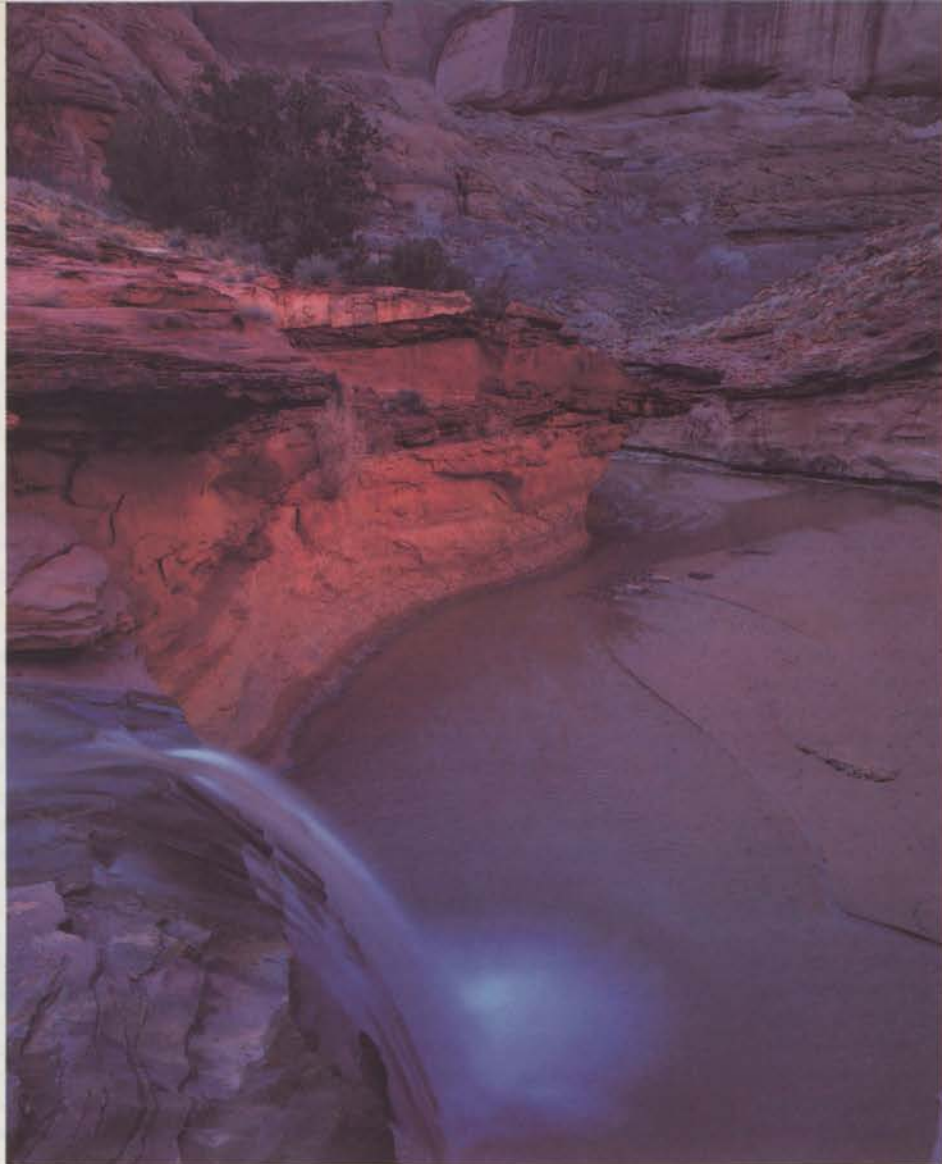
"We thought we had everything disconnected and found these drain lines that nobody had any inkling were there," Dutton said. The drains went to the Rouge River, 120 feet away.

It took two workers two days to move the bazooka, according to Couck. Special care was taken to keep it from being damaged.

"It was too heavy to pick up," Couck said, "so we used a back hoe with chains around it to move it."

Founder Brooks invented the bazooka valves and sprinkler heads used on the project. He patented various sprinkler devices beginning in 1916 for use in both the United States and Canada. Brooks installed his inventions to the exclusion of other brands on Ford's property.

Century Rain Aid, Madison Heights, Mich., provided system components to the restoration effort, while John Brooks Inc. donated flowering shrubs, azaleas and day lilies as well as labor for the project.



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INDUSTRY VIEWPOINT

OPERATORS, BIG AND SMALL, SHOULD STAND UP AND BE HEARD



Steinau

IT WAS MY FIRST official visit to Washington, D.C., and walking into the Hart Building, a huge modern office complex housing many of our U.S. senators, I found myself filled with anticipation and excitement. I entered the elevator, rode to the second floor and wandered down a long hallway. I located the hearing room where a few dozen people were milling about in anticipation of the senate subcommittee on lawn care. Upon spotting a few familiar faces I joined them. "Who's that?" went the conversation. "That's the Director for Public Citizens. That's the lobbyist for Waste Management. Over there is the Attorney General for New York and the delegation from ChemLawn," and so on. The group immediately came to order when Sen. Harry Reid, D-Nev., entered the room. Just as quickly, the Senator launched into his opening remarks including a tirade against lawn care and lawn care pesticides. I contemplated what the Senator was saying and determined much of it was old news, peppered with personal opinions. It was, for the most part, presented for the media on hand. Since I had heard and read much of what was being said, my attention was drawn to the camera technicians. Curious to see what their level of interest in the various speakers was, I focused on the network news crews. It was obvious that this event was nothing special to them as they shared quiet conversation and swapped shooting schedules. However, when 11-year-old Kevin Ryan stepped up to the microphone to give his testimony, the disinterested videographers turned into classic paparazzi. Ryan, a nice kid with a most unfortunate oversensitivity to chemicals, is well known to the chemical industry. As he has many times before, he pleaded his case eloquently and, as far as the media was concerned, that was their story. After listening to two "victims" speak of their pain and suffering, the media packed their bags and made a beeline to edit their tapes for the early news. They were gone long before the first lawn care advocate was called to testify. It was just as well, because even when

the lawn care side of the story was presented it was obvious that Sen. Reid and Co. were hardly in the mood to listen.

The worst example of this antagonistic attitude came when Jim Wilkinson, executive director of the Pesticide Public Policy Foundation, tried to refute some earlier testimony given concerning the death of George Prior, the Navy lieutenant who died in 1982 two weeks after playing a round of golf.

Sen. Reid flew off the handle at a stunned Wilkinson, screaming that Wilkinson had no right to introduce such testimony and that he would not stand for such antics in his hearing room. It wasn't until after the hearing that legal counsel confirmed that Wilkinson had done no wrong, but was bullied into silence by Sen. Reid.

And so went the subcommittee hearings. A grandstanding event for a senator who is running for re-election. An event that was called a non-event by the majority of legislators visited the following day by participants of PLCAA's "Day On The Hill." There was no denying that the hearings were an effective media event for the anti-lawn care advocates.

Before you put your lawn care company up for sale, it's good to know a little about how our government works. Regarding the hearing, you must understand that no legislation can be introduced by a senate subcommittee. Transcripts of the entire hearing, plus written testimony from all those who spoke, are provided by the subcommittee chairman to the senior committee, which in this case is the Committee on Environmental and Public Works.

The senior committee evaluates and makes the final call, ferreting out inconsistencies, researching conflicting views for inaccuracies and finally (hopefully) emerging with the truth.

Although most legislators we spoke with downplayed the effectiveness of the hearings, it still received enormous media coverage. This has the potential effect of motivating people to support the anti-lawn care movement. Voter pressure could do much to change the attitudes of heretofore neutral legislators, the potential of which we must be aware.

Fortunately, the PLCAA was simultaneously hosting its first Washington, D.C., legislative event, which gave association members an outlet for frustrations brought on by the hearings. Visits to

more than 30 legislators occurred the following day and PLCAA members received positive marks for efforts to express their views.

Everyone came away with the feeling that they had set up a line of communication with their senators and congressmen and that they had, in some way, been influential.

So, what is to come from our Washington sojourn? In a word, plenty.

Tension continues to mount and eventually one of those 535 legislators is going to seize the moment and introduce some amendment to FIFRA or SARA, or find some other way to get relief from a small, but persistent constituency. Either that, or we, as responsible pesticide applicators, will begin to face the facts.

Truth is, we need to support more progressive industry positions introduced by our associations. We need to stop hiding from consumer right-to-know issues such as posting, prenotification and written contracts. We need to embrace integrated pest management practices and not fight environmental activists, but understand and overcome their concerns.

Before we can do anything, however, we need more active participation from lawn care operators. If I learned one thing from my visit to Washington, it was that people who speak the loudest most often get heard.

We can complain to other lawn care operators, scream about our lawn care association and write letters to the editor, but we won't be truly effective until we have hundreds of small lawn care businesses joining in the battle. There is no doubt in my mind that we can become a stronger influence if only more of us would take part in the democratic system.

A single letter to your Congressman carries more weight than any "60 Minutes" report. A personal visit with a senator has tremendous impact. A \$100 campaign contribution to go along with that personal visit is valuable beyond calculation.

My Washington visit was an experience not to be forgotten. Start saving your pennies for next year and quit whining about how your company is too small to matter. — Rick Steinau ■

The author is president of the Professional Lawn Care Association of America and president of Greelon Lawn Care Services, Cincinnati, Ohio.



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Steady Growth Sustained Minor's Through Recession

DAVID MINOR WAS just 16 years old when he and a buddy set out to earn a teenage living mowing lawns.

His buddy had the car and the driver's license, Minor had the mower and edger. Together they canvassed the neighborhood trying to pick up jobs.

"The first yard we did, we charged \$16. It took us five hours, 10 man-hours. We thought we were getting rich," Minor said.

After one summer, Minor sort of inherited the mowing jobs when his friend decided to go in another direction. Minor said he learned two things that year: Self-employment is the way to earn a living and not having a partner was the only way for him to go.

"I was at a real disadvantage because my partner was a late sleeper. So I'd have to sit around and wait for him to come over and pick me up before we could go out and cut lawns," he said. "It was my first and last experience with a partner."

Now, at 31, Minor is running a \$2.5 million company called Minor's Inc., Fort Worth, Texas.

Minor kept on mowing through high school and college, and in 1980 hired his first employee who, to this day, works summers for the company.

The company catered essentially to the residential market until 1986 when the maintenance mix shifted to 50/50 residential and commercial. Today, the company manages a 75 percent commercial to 25 percent residential blend.

"This year it looks like the swing is going even more to the commercial end which I think is fairly natural for most people in our industry," Minor said. "It's really hard to be competitive on residential property, a mow, blow and go type of operation, because you're dealing with the David Minors of 15 years ago."

Maintaining what Minor calls a conservative 15 percent to 20 percent annual growth over the last few years, the company will employ about 150 workers, including 50 year-round employees, this year.

The most dynamic growth came between 1982 and 1986. Minor's grew from 11 employees in 1982 to 85 in 1986. Sales increased 572 percent between those years, taking the firm from \$209,000 in sales to \$1.4 million. The effort landed Minor's number 446 on *Inc.* magazine's 1987 list of 500 fastest growing companies.

Until the Texas economy shapes up, Minor plans to continue growing at a conservative rate.

"That's the goal right now, though we may change because we're in a better position to grow more than in the past," Minor said. "I want to create opportunities for my employees, because I know they're not going to be happy staying as an account or a sales representative for Minor's at Fort Worth."

Minor is still active on the business side of the organization, but not so much on the day-to-day operations. That responsibility falls to Randy Ferrari, Minor's operations manager. Ferrari, one of Minor's original employees, directs the firm's daily crews.

The number of crews Minor's sends out varies from day to day, but 32 to 34 trucks are generally sent out the door daily. About 14

to 16 of those are two-man residential crews. About 13 trucks carry commercial crews ranging from three to six men depending on the layout of the job and the day's schedule.

"We don't have a set crew number like a lot of companies do. We base it on the location of the job, the volume and whether the crew just does mowing or combination work," Minor said.

Combination crews are responsible for completing all jobs weekly on small commercial sites including the trimming, bedwork, mowing and edging.

In addition, the company sends out three chemical crews, two landscape crews and a one-time crew which does all major cut-back work.

The chemical and landscape crews make up the special services department, an area of the company established last year. Minor's subcontracts irrigation maintenance to a former employee.

Most of the commercial crews drive 3/4-ton crew cab pickup trucks, but the company also sends out a few flatbed and 1-ton trucks. Stressing the need for all crew members to ride in the cab, Minor had to buy 10 new vehicles last year when he decided to enlarge his crews. Eight of the 10 new trucks are extended cabs with front and back seats.

Until last year, Minor had never purchased new trucks, opting to buy used vehicles. "It goes back to my conservative nature. I didn't want to get strung out and owe a lot of money," he said. "Our debt is very low as a result."

Minor relaxed his used truck theory to ensure service to the company's growing business in Dallas County. Rather than open a branch office, Minor made the decision to send workers from the

MINOR'S INC.

Headquarters: Fort Worth, Texas

Branch Offices: None

Founded: 1980

Owner: David Minor

Primary Services: Full-service maintenance work for residential and commercial property. Limited installation.

Employees: 50 year-round, 150 seasonal.

1989 Sales: Over \$2 million.





Fort Worth facility and to buy new trucks to reduce the potential for downtime.

"We really needed to regear our fleet and finding extended cab trucks in the used market wasn't easy," he said. "We'll probably go back to buying used vehicles."

When buying equipment, however, Minor's buys new and counts on his two full-time mechanics and one full-time shop maintenance worker to keep the equipment up and running.

This year a starting laborer at Minor's will make \$4.50 an hour. A foreman will make \$7 to \$10 an hour depending on how long he's been with the firm and what his bonus is.

"The wages are competitive in our market, but you can call around the country and find foremen making as much as our supervisors," he said. "But they're also billing out as much as \$28 to \$30 an hour."

Other members of Minor's team include: a residential maintenance scheduler, two commercial salesmen, two residential salesmen during peak season, a

controller and an executive assistant which the company didn't have until it reached \$600,000 in sales.

"Our controller's done a good job in getting our financial end straightened out. Before he came it was pretty much seat-of-the-pants," Minor said. "I've always had a real good feel for numbers, but I've never really had them updated and received financials on a regular basis."

Some tricky weather conditions in the South add to the competitiveness of the maintenance industry. Texas heat from mid-May to mid- to late September, is virtually unbearable.

"We're working in 95 to 100 degree temperatures every day. We're paying guys \$5 an hour to work in 100 degree heat and it makes for high turnover in the summer," Minor said. "People think we get more mowings as a result, but that's not the case because we have one season turf-grass in this area, giving us 32 to 34 mowings."

But dealing with the heat is almost routine. What Texans

weren't prepared for was the freeze the area received last December and the monstrous rainstorm of this spring.

"The rain cost us a lot of money because our residential revenue is per service," Minor said. "We also lost a lot of plant material because of the freeze. That combined with the rain has kept us off schedule."

On a bright note, what the company has lost in maintenance revenue they've made up in landscaping.

One of Minor's goals for this year is to get out and talk to his customers more often. Although he sold many of the commercial accounts himself and he personally reviews quality control questionnaires, he'd like to spend more time out of the office.

"Customers are what it's all about. They're right at the top of our organizational chart," he said.

In the following interview, Minor shares some insights into the lawn and landscape maintenance field.

(continued on page 26)

More than 30 residential and commercial crews are sent out daily by Minor's. The company employs about 150 workers during peak season.

Introducing Tempo For Home Lawns And Ornamentals.

Use new TEMPO™ 2 ornamental insecticide and it will become your new standard of measure for all other insecticides. New TEMPO is the first affordable pyrethroid labeled for both ornamentals and home lawns. Better yet, it treats the same area as effectively as the leading insecticide, but with 80% less active ingredient. And that's a sizeable difference.

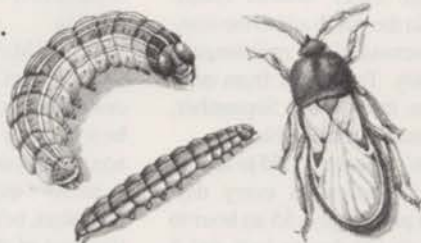
Weigh the alternatives. New TEMPO uses approximately 80% less active ingredient than the leading insecticide. Which means there's approximately 80% less chemical for you to carry around. And 80% less chemical to impact the environment.



How To Size Up

Measure the effectiveness. TEMPO is a broad-spectrum, advanced-generation pyrethroid.

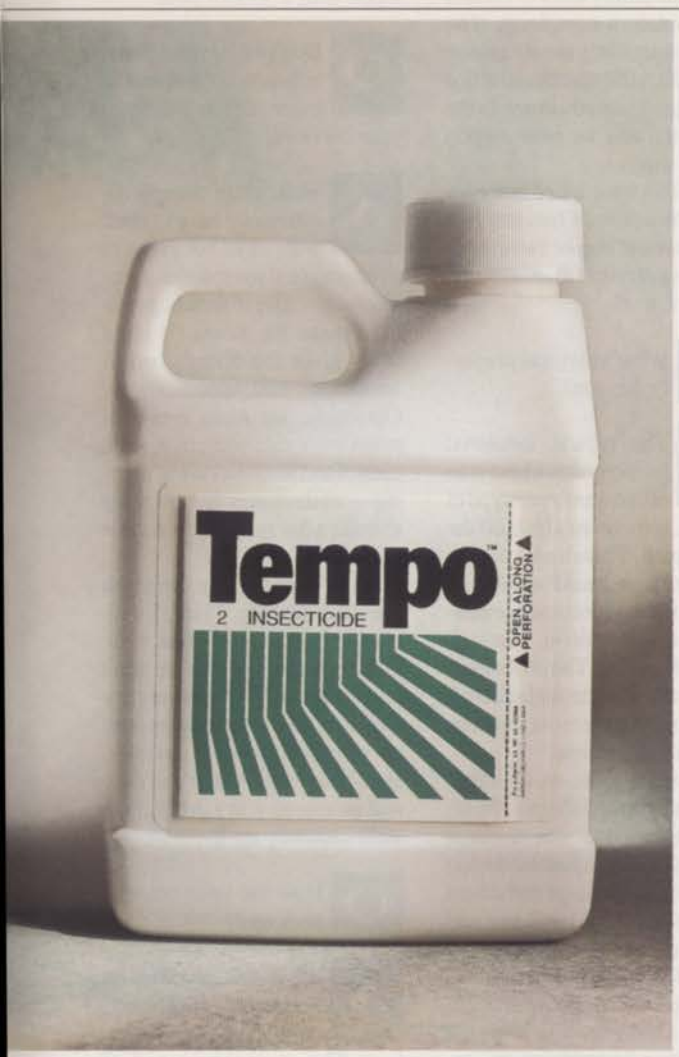
In simple terms, TEMPO effectively controls the surface-feeding insects attacking your customers' lawns. Plus, TEMPO controls the toughest ornamental pests. So using TEMPO eliminates the need to stock several different insecticides.



TEMPO effectively controls surface-feeding pests like cutworms, armyworms, chinch bugs, and sod webworms.

Here's another good reason to put TEMPO in your tank. More and more of your customers have a growing concern about Lyme disease. TEMPO effectively controls the deer tick which carries the Lyme disease virus.

Calculate the cost. TEMPO is the first affordable pyrethroid labeled for use on home lawns. Better yet, it's competi-



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TEMPO is not a cholinesterase inhibitor like other insecticides. So you don't have the chore of constantly monitoring your applicators. And you don't have the applicator downtime caused by cholinesterase depression.

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TEMPO reduces exposure to your customers, your employees, and the environment.

Your Insecticide.

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TEMPO uses 80% less active ingredient than the leading insecticide.

Gauge the work involved.



TEMPO uses 80% less active ingredient than the leading insecticide. So, TEMPO takes up 80% less storage space, both on and off the truck.

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Circle 27 on reader service card

Q How did you break into the commercial market?

A We were visible in the residential field because we had a lot of trucks out so I suppose it was only natural that people started calling us.

I remember our first big commercial job, we had little condominiums here and there, but our first big commercial account, I had no idea how to price the job. I did what people do to me every day, which I'm embarrassed to admit, but it's a fact of life. I went in and said, "What do you want done?" She told me and then I found out what they were paying and figured, well, I'll cut it \$50 or \$100 or whatever. It was about a \$1,500 or so a month account and to me at that time — seven or eight years ago — that was great.

So I decided to figure out a way to make money at \$1,500 a month. I had the same advantages a lot of people have on us right now — low overhead. Once we really started doing commercial work, we realized you could get a lot of volume, and we grew from there.

Fortunately, we've gotten more sophisticated — graduation by necessity.

Q But your old method of pricing is still fairly common in the industry?

A Absolutely. It's frustrating, but it's a fact of life and I'm not going to cry or worry about it. That's the way our industry is.

Basically, we've taken the approach

that we're not necessarily going to be low bid. We're very competitive. We feel like we're middle of the road as far as pricing is concerned.

We give a good service for the price that we charge. But, we don't try and compete against the low bid guys, we just try and sell the advantages of using Minor's.

We sell value is what it amounts to. Some people buy value and some people buy low price. It's up to us to educate the potential client of the advantages of using us.

Residentially, it's tougher because it's so much more of an easy entry market. You've heard it a million times before, if you have a pickup truck and a lawn mower you can mow lawns.

Commercially, the criteria's a bit more difficult. To be competitive, you have to have some larger equipment, bigger trucks and crews, be more responsive and, in some cases, you have to meet particular insurance requirements, which we love, because it screens a lot of people out.

But there's still a lot of competition, a lot of guys working out of their house and basically buying themselves a job. That's what the American free enterprise system is all about.

Q What kind of commercial mix does Minor's have?

A Anything aside from a single family dwelling. We're real pleased with our mix right now. As far as our commercial market is concerned, we probably do about 35 per-

cent condominiums and what I call multi-family units — condos and apartment complexes. The rest splits up fairly evenly among industrial, office parks and office buildings. Then you throw in the residential and we have a good market mix.

We don't have all of our eggs in one basket and I like that. We don't have but maybe two clients where we do more than \$125,000 worth of work.

Q What's a typical property for you?

A The typical industrial property down here is an office warehouse type of project, sometimes a little off the beaten path. There's a lot of people who invest considerable money in landscape because the market is so competitive, like it is everywhere else. The office market is basically the high-rise office projects where we manage the entire landscape.

The apartments, on the other hand, are a little different. We offer a real varied service. Some of them want the complete landscape management package and others want just mowing, trimming and bed cleaning.

Our theory is if they have to landscape, we'll maintain it. Even if it's in a less than desirable area or less than desirable condition. If they pay their bills and they want service, we'll provide it. I don't have an ego problem, just as long as they're willing to pay and it's a profitable account for us.

So we've got a good mix. We've got a lot of nice properties and then we've got a lot of less than desirable properties that some

landscape companies might not touch with a 10-foot pole.

Q Don't the less than desirable properties become more desirable from your services?

A Well, given the specifications we have to work with...I'm not going to sit here and tell you that every project we go on we make a huge improvement. We do what is asked of us given the client's budget limitations and specifications. Obviously, we make every attempt to upgrade with color, weed control and fertilization and pruning — all the things that are going to make a fair property be a great property.

I'd be a fool to turn down the ones that just say, "Hey, I only want to be cut every other week in the summer because we don't have irrigation." We have very few like that, because they generally go with the one truck operator. But if they want Minor's to do it and we can do it at a profit, then we'll certainly do it.

Q How are your services packaged?

A What we advertise is landscape management, installation and irrigation. The management end of it is about 95 percent while installation and enhancement is something we really just got into.

It appears to have some real potential, but we didn't market it heavily until last year because there weren't a lot of people spending money on enhancements down here. My theory was to stick with what I knew, and what I knew was landscape management.

I feel like I know how to run a landscape management company and how to do it at a profitable level. As far as installation, quite frankly, I didn't feel like I knew that area as well and we didn't have the people on board who did. But as people start seeing the benefits of enhancements, more people are opening up the purse strings.

We're mainly landscape management and I expect always will be. I don't have a real strong desire right now to get into the installation end of the industry. That's

Willow Lake is an exclusive town-house development maintained by Minor's. The homes are surrounded by 175,000 square feet of turf and more than 40,000 square feet of planting beds.





One of the few wide open spaces at Willow Lake. The hybrid bermuda is mowed at a height of 3/4 to 1 1/2 inches depending on the season.

not to say that won't change, but right now, that's my one desire.

Q How bad has the economy been in the last few years?

A Well, the last few years have been pretty rotten to tell you the truth. There's no building to speak of and vacancy is way up in the Metroplex — Dallas/Fort Worth.

But that's the good thing about maintenance. Companies may have to cut their specifications a little bit, but they still have to maintain the property if they have any hope at all of leasing their offices.

Whether it's an apartment community, office or industrial park, the curb appeal, the initial impression a prospective client gets when they pull up to lease a facility is vital. They say you never get a second chance to make a good first impression, well that is the case as far as landscaping is concerned.

If they pull up and the landscaping doesn't look nice, they're going to turn around and go down the street to somebody else. So, the maintenance work has been OK. It's a lot tighter because there's no new projects coming on, the new business we're used to isn't there and the growth is a

little bit slower. If you can steer away from that — if you could in the last four years — you'd be in pretty good position for the market to rebound. It's not doing it yet, but we think we're real close and we've been able to weather the storm.

We hope that the worst is over and that things are going to turn around real soon.

Q So half of the years you've been in business you've worked through a bad economy?

A As a matter of fact, yes. It's funny, the first half was a boom economy and I really wasn't prepared to take advantage of it because I didn't have the people or the expertise. The last five years have probably been as bad as it can ever get, and that's when I've really been prepared.

I'd like to think that what I've learned the first five years has helped me through the last five years.

Q Did you make a profit in those years?

A Yes, we did. I don't have any complaints personally. We weathered the storm pretty well. I think we're real lucky. We took the real conservative approach.

I've always taken a conservative approach. I haven't gotten carried away with spending a lot of money, adding additional staff and that kind of thing. We asked the staff we had to do a little more work.

Q How do you ensure a profit?

A Run your organization as efficiently as you can. Don't add people to crews where they aren't needed, route your accounts properly and efficiently and don't add unnecessary equipment. Go slowly and make sure each quarter or each year is profitable.

Obviously there'll be fluctuations and every month is not going to be profitable. Be prepared for that and understand it's reality.

Determine what you need to bill out to make a profit based on your overhead and then do it. I juggle with it yearly.

Q Why would someone choose your company instead of another?

A I'd like to think we provide a good value for the investment that our clients make. And I look at it as an investment.

They're investing in landscape management services, an area that's competitive price-wise, yet we give outstanding service.

We pride ourselves on being extremely responsive. We provide good quality work and we're there year in and year out. We're willing to touch base with the clients, they know we're always here and we don't ever argue with the customers. If they feel like something is not right, or they want to make some adjustments, we'll work with them in any way we possibly can.

I don't know that that makes us really unique, I think that it's a prerequisite of doing business in the 1990s. Anybody who's not going to be that way isn't going to get any kind of market share.

In addition, the quality of our people is outstanding. From the mechanics to the foreman and the laborers, I've been blessed with incredibly tremendous people.

And in the office, we have 15 people or so, but the people that we have are really good people and I think that without those people things could have been different.

We have developed our corporate culture to be one that is serving and responsive. Everybody understands our corporate culture, and anybody who doesn't, doesn't stay here very long.

We've seen this thing go from basically 10 employees to 150 em-

ployees. We've been through the good times and the bad times and we've made it.

Q What are the long-range needs of your customers?

A First and foremost they need to have a quality service, no headaches and a good price. Our philosophy around here is quality, production and reliability.

All of our foremen are on a percentage based compensation, 20 percent of their pay. It's based on good quality jobs, good production and being here every day.

Quality is first. Anybody can do a quality job, but doing a quality job and doing it efficiently to the point we can charge the customer a fair rate for our services, that's when we're going to be successful.

If you have one and not the other, you can fail. You can talk quality until you're blue in the face, but you've got to do it and be productive at the same time or you're not going to be in business very long.

The needs of our customers are to have a quality service at a good price. They want and need to have a responsive company to be able to act when things need acting on with professionally licensed personnel.

Q What are your goals for the next five years?

A Number one is to continue consistent growth — 10 percent to 15 percent; 15 percent is preferable — and to maintain the margins we have.

Having volume and doing \$8 million, \$10 million, \$20 million or \$30 million is great just so long as the margins follow. I'm definitely bottom-line oriented. That's why we're in business and that's what it's all about.

We have a saying around here that we never sacrifice quality for profit for the short-term. If it comes down to the long-term, then we have to make a decision either to go up on the price or get out. I'm not going to keep doing a quality job and not make any money.

I'd also like to be able to create opportunities for the people who have been loyal to me. By that I

(continued on page 70)

Do Environmental Needs Outshine the Booming Economy?

BUSINESS SLUMPS, water shortages, increasing environmental exposure and legislation, the worst freeze in years and the Immigration and Naturalization Service looking over your shoulder.

Any one — or at least any two of them — might be enough to keep you awake at nights. But even with all of these issues hitting landscape contractors in the West in varying degrees, optimism seems to be running high. In some cases, it's even bullish.

Take Michael King of Reno Green Landscaping, Reno, Nev., where a lack of rainfall and the subsequent low level of the Truckee River — main source of water for Reno — has resulted in a severe water shortage.

For starters, lawn watering is now permitted just two days per week; still twice as generous as it was in 1988 when drought conditions restricted watering to one day per week.

Nevertheless, King said, business is good and getting better. The area is growing and he predicts 15 percent to 20 percent annual growth for at least the next several years.

King's organization serves about 30 percent to 35 percent commercial customers, with the balance in residential maintenance. Commercial accounts include the Burger King chain in the Reno area as well as shopping centers and apartment complexes.

Water restrictions have forced a drastic

change in King's fertilization programs. Previously, he used almost 100 percent liquid fertilizers, but now estimates using as much as 50 percent granular slow-release materials to help prevent burned out lawns caused by limited watering schedules.

Growing customer concerns over pesticides and other environmental factors have led King to let his customers decide on the extent of pesticide use.

King is now involved in forming a northern Nevada association of lawn and landscape operators — one goal being public education on the individual and general benefits of proper landscape maintenance.

King estimated there are as many as 3,000 lawn care operators in Washoe County, an area which includes Reno and Carson City. Operators serving the county's 250,000 population range from those who only mow lawns to firms such as his providing complete lawn and landscape services.

FREEZE AFTEREFFECTS. In Texas, it's quite another story. There's been plenty of rainfall — far too much, as news reports show. But the lingering problem is the impact of last winter's freeze, the worst since 1983 and as bad as any experienced by Richard Duble of the Texas Agricultural Extension Service in almost 50 years of dealing with turf and landscapes.

The freeze killed plants and grass in both commercial and residential areas. In addition, the freeze has impacted the availability of plant material as well as the price. There was a major loss of bermudagrass in the Dallas area because of below zero temperatures; it was even colder in northern Texas.

"The cost of sod has doubled from \$70 to \$80 per pallet to the current \$150 per pallet," said Duble, who is based in College Station, Texas.

As a result, ornamental plants are being imported from Mexico and California with accompanying higher costs.

Generally, Texas faces the same environmental issues as the rest of the country with respect to pesticides and chemical fertilizers. But one issue — disappearing landfill space — has been given high priority in Fort Worth.

Agriculture Extension Agent Bill Knoop developed a "Don't Bag It" program to spread the word that something else can be done with grass clippings rather than bagging them and sending them to overcrowded landfills.

The Fort Worth test recommended more than once-a-week mowing, use of slow-release fertilizers and putting clippings back on the lawn to decompose and return nutrients to the soil.

In Fort Worth, 150 home lawns were part of the test, using special side-discharge mowers provided by The Toro Co. These mowers were equipped with internal deflectors which cut and re-cut clippings and discharged them back onto the lawn.

One key step early in the program was a seminar held for lawn maintenance professionals. Knoop and city officials described the program and encouraged aid and cooperation from lawn maintenance contractors.

According to Knoop, the Fort Worth test results were encouraging enough to prompt cities such as Tampa, Minneapolis and Los Angeles to adopt similar programs.

POPULATION INFLUX. A substantial portion of new business



The future looks bright for Northwest Landscape Industries, Tigard, Ore.

WESTERN MARKET REPORT



in New Mexico is the result of new golf course construction. Population growth in the state is being fueled by an influx of retired persons and their apparent desire to take advantage of the New Mexico climate and play golf year-round, according to Charles Glover, executive director of the Southwest Turfgrass Association, Las Cruces, N.M.

Another concern — and it's no surprise — is water management. Water in New Mexico is a precious commodity — with most coming from groundwater sources. Rainfall has been low, so 1990 is a water-scarce year.

In bordering El Paso, Texas, for example, alternate watering days are already in force, leading New Mexico contractors to expect similar restrictions later this year, Glover said.

In some locales, planning is under way to supplement irrigation systems with recycled or reclaimed wastewater, a technique already being used in other parts of the Southwest.

Glover cites the growing demand for more professionally trained people in turf management as a noteworthy change from the past. To help fill this need, New Mexico State University has

established courses in major recreation area management.

ENVIRONMENTAL RESPONSIBILITY. Moving West, both Sharon Dewey, executive director of the Arizona Landscape Contractors Association — with about 800 members — and Bob Underwood, association president and head of AAA Landscaping of Phoenix and Tucson, revealed pertinent comments about Arizona's economy.

According to Underwood, business has bottomed out after a downward reaction to residential and commercial overbuilding that plagued Arizona in past years.

Smaller communities like Flagstaff, Kingman and Sedona, along with the state's rural areas, didn't experience the overdrastic and sometimes overpromoted growth of Phoenix and Tucson, resulting in steadier business conditions.

The most successful contractors learned to respond to fluctuating business conditions by diversifying or pulling back by design and not in panic, he said.

Dewey agreed adding that contractors with basic business sense and skills, in addition to

their technical expertise were those who quickly and comfortably adapted and survived.

But the worst is over, Underwood said, projecting about a 2.1 percent steady annual growth for the next several years.

Environmental responsibility is a major goal for the state's landscape contractors. This includes educating both the green industry and the public on proper irrigation, water conservation and landscape design and maintenance techniques that make best use of plant materials.

Recently a group of industry professionals banded together to modify a water conservation ordinance in Phoenix. Initially, the ordinance was a typical municipal regulation governing water usage, but the group proposed a revised measure offering residential water users incentives, including a rebate of up to \$200, to save water.

The revised legislation has been submitted to the city council where passage is predicted. Underwood is hopeful that it will serve as the model for a statewide measure.

Landscape maintenance contractors are also working with Phoenix on demonstration gar-

The West is not without its share of problems; nevertheless, business is booming no matter where you look.

den projects, and may serve as instructors and lecturers at a series of seminars the city is planning for the public on landscaping, the environment, water conservation and related topics.

A marked lack of knowledge by customers regarding water management is apparent but, Underwood said, he finds them responsive to education and acceptance of innovative irrigation developments such as water controllers.

Underwood also stressed the need for contractors to understand the long-term benefits of these measures themselves. "Then they'll be equipped to convince customers that higher initial costs will ultimately produce environmental and financial benefits."

Demonstrating his own commitment to the environment, Underwood recently completed a 40-acre commercial project in Chandler—a Phoenix suburb—where a 1 1/2-acre lake serves as a storage reservoir, and where reclaimed water is used for landscape irrigation.

Finally, Underwood stresses a growing need for qualified personnel. He said it's essential to contact young people and introduce them to the industry at the high school level during career days and similar events.

BUSINESS BOOM. Skipping to the Pacific Northwest—Oregon, to be specific—Trish Stormont, sales and marketing representative for Northwest Landscape Industries in the Portland suburb of Tigard, reported that the area is booming, second only to Seattle.

The company works exclusively with commercial clients and she sees a rosy outlook—especially with 250,000 new residents expected to move in over the next 10 years.

But caution, or at least thoughtful growth, is the company's philosophy, according to Stormont. She said the firm is selective in choosing new contracts and customers and doesn't want to over expand.

Northwest is attempting to be more selective in hiring and is spending more time in training and personnel development, including hands-on training in safety and product/service quality. The company is also working with community colleges on



Northwest Landscape Industries maintenance workers at the 364-acre Murrayhill development.

one- and two-year certification programs.

Training with an emphasis on safety has more than the obvious benefits. Oregon has one of the nation's highest workmen's compensation insurance rates. As a result, thorough safety training not only helps employees in terms of their own well-being, but helps hold down insurance costs by lowering the incidence of injuries and other work-related health problems.

She credits the company's construction department for a strong contribution to Northwest's proactive environmental stance. Since this department handles projects in environmentally sensitive wetlands, the maintenance staff obtains guidelines, techniques and information which might not otherwise be available.

Water shortages are not currently a factor in the area, but Northwest is looking ahead just in case. Computerized water control, monitoring and other management methods are being evaluated. For some customers, separate irrigation systems for shrub areas and lawns have been installed so watering can be done on different schedules.

Reinforcing the area's booming business activity, Steven Vargas, technical information and training coordinator for Pro Grass, Wilsonville, Ore., said the firm exceeded its 1989 business

projections, attributed generally to good business conditions and to the company's recent entry into the commercial field. Pro Grass operates in Oregon and Washington and has a new office in Concord, Calif., serving northern California.

Pro Grass has held the line on price increases—there were none in 1989—and doesn't anticipate any in 1990 unless faced with substantial material cost hikes that can't be absorbed.

New developments include an organic program that will stress use of natural materials and fertilizers instead of chemicals. Vargas said the company has already stopped using 2,4-D.

One of Vargas' key assignments is training new employees and continually updating current employees with safety and licensing information. Weekly training sessions in customer service and communication not only ready employees to do a better job, but help strengthen their sense of professionalism and interest in making a long-term commitment to the industry and to the company.

IRRIGATION MANAGEMENT. If the economy is booming in California, so is the California Landscape Contractor's Association, according to Larry Rohlfes, director of communications and administration in Sacramento.

CLCA membership stands at

1,700 after two years of rapid growth—nearly 50 percent since last year. And he sees 10 years of substantial growth ahead, a reflection of the projected growth for the state's economy and for the lawn and landscape maintenance industry.

CLCA's marketing and educational programs and other benefits have been instrumental in attracting many new members, including previously unlicensed contractors who see the benefits in becoming licensed, according to Rohlfes.

CLCA and industry growth has been highlighted by a recently published report from the Green Industries Association, an umbrella organization serving all aspects of urban agricultural activity in California.

The report shows landscape and horticultural services with 1990 employment of 53,580 out of a total greens industry figure of 148,658—about 36 percent of the total.

But rapid growth is not the only focus—welcome as it may be. The state's voters may have to confront two environmental measures on the November ballot.

One, called the "GREEN" initiative, comes down hard on pesticides, among other restrictions. The other, dubbed "CAREFUL"—for Californians for Responsible Food Laws—is favored by the CLCA.

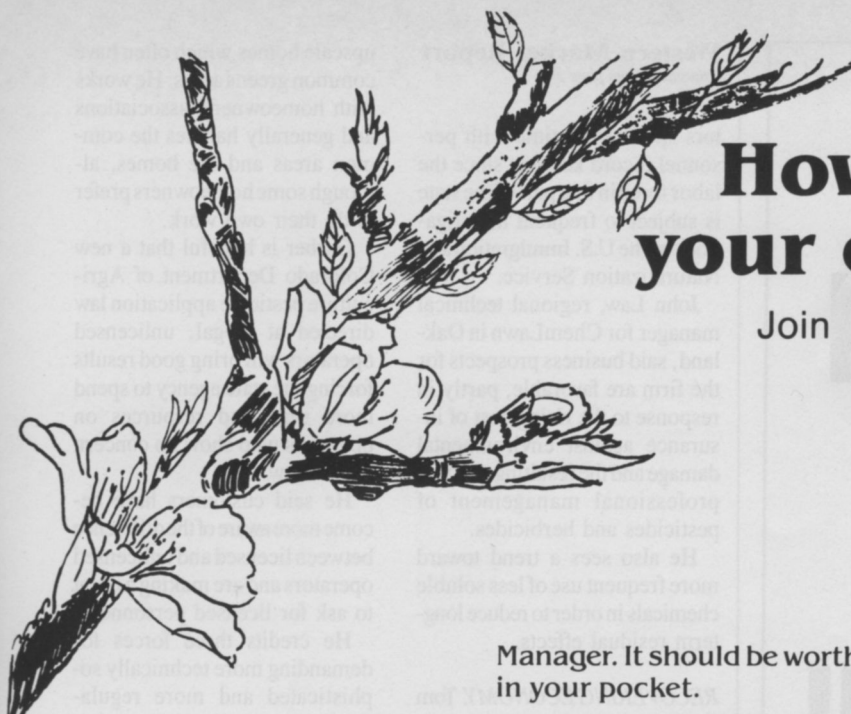
And the CLCA has taken definite stands on other environmental issues. The association, for example, opposed xeriscaping, advocating proper irrigation management and plant location instead of xeriscaping's emphasis on drought-resistant plants.

Water management is another area in which the CLCA takes an active interest. The association has issued a 13-point position paper on water management covering many accepted water conservation measures, but also calling for incentives in the form of water rebates for retrofitting irrigation systems, "water bank" credit for putting results of water audits into practice and penalties for water abusers.

Rohlfes says the CLCA regularly provides members with information and education in marketing, estimating, public relations and labor relations.

Southern California contrac-

(continued on page 32)



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Western Market Report

(continued from page 30)

tors spend extra time with personnel record keeping since the labor force in that part of the state is subject to frequent investigations by the U.S. Immigration and Naturalization Service.

John Law, regional technical manager for ChemLawn in Oakland, said business prospects for the firm are favorable, partly in response to the rising cost of insurance against environmental damage and the resulting need for professional management of pesticides and herbicides.

He also sees a trend toward more frequent use of less soluble chemicals in order to reduce long-term residual effects.

RECOVERING ECONOMY. Tom Garber, president of Colorado Landscape Industries, Arvada, in the Denver metro area, is dealing with problems faced by industry members in the far West as well as in the East.

For example, Denver's winter weather doesn't encourage year-round landscape attention, so Garber offers snow removal service in the winter. "It doesn't completely balance out the year," he said, "but it certainly helps."

As to general business prospects, Garber said, things are looking up after several years of a slumping economy. An increase in major construction is revitalizing the economy. Wages are still low, but are likely to go up as a result of the basic wage rate going from \$4 per hour to \$5.50 per hour.

Garber's firm deals exclusively with large neighborhoods of

upscale homes which often have common greens areas. He works with homeowner's associations and generally handles the common areas and the homes, although some homeowners prefer to do their own work.

Garber is hopeful that a new Colorado Department of Agriculture pesticide application law directed at illegal, unlicensed operators will bring good results forcing the state agency to spend more time and resources on operators who show no concern for the law.

He said customers have become more aware of the difference between licensed and unlicensed operators and are making a point to ask for licensed personnel.

He credits three forces for demanding more technically sophisticated and more regulation-responsive pesticide activity: pressure and higher rates from insurance carriers, periodic inspection by regulatory agencies and educational programs from the Associated Landscape Contractors of America.

Garber said his own pesticide program involves the hiring of his firm's first safety officer, and almost daily tailgate talks where safety precautions and new information are reviewed just before a crew begins a pesticide job.

In the past five years or so, Garber said, he's seen several major changes in landscape maintenance. They include:

- Pruning — now standard operating procedure instead of an occasional operation; probably due to maturing landscapes.
- Aeration is up tenfold.
- Annuals now account for about 75 percent of flower plantings.
- A fivefold increase in water management.

To illustrate the increased interest in and use of water management, he described one of his customers who installed rain-sensing devices and now saves approximately 200,000 gallons of water every time the sprinkler system isn't turned on.

Garber said the cost of installing rain-sensing devices is about \$50 per sprinkler control clock. For a small investment, the savings in water and water cost is considerable. — Ben Warner ■



Tree care is becoming common.

The author is a free-lance writer from Sacramento, Calif.

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Abundance of Varieties Creates Buyer's Seed Market

THE PAST SEVERAL years have brought a proliferation of new seed varieties to the market, many of which have traits not seen in turfgrass before. Recent introductions include products with higher tolerance levels to drought, heat, shade and pests.

But it doesn't end here. There's still a great deal of research and improvements yet to be made in turfgrass seed, said Milton Engelke, Texas A&M University.

The predominant areas of research in the next several years, according to Engelke, will revolve around reducing water requirements, temperature extremes and water quality.

CONFUSED BUYERS. The increased number of players in the seed business has led to confusion, but that's a product of the free enterprise system, Engelke said.

One area of confusion that was created by the seed companies involves dwarf-type tall fescues. Even seed manufacturers themselves cannot agree on a definition for this variety and agree the term has been overused.

Barry Green Jr., vice president of sales, Jonathan Green, Farmingdale, N.J., said a "true" dwarf-type mature plant should not grow higher than a knee cap, and "semi" dwarf-types generally grow about as high as a belt buckle.

Craig Edminster, director of research, International Seeds, Halsey, Ore., said a mature plant of a true dwarf-type grows less than 100 centimeters and semi-dwarfs grow to about 112 centimeters.



The differing growth characteristics of varying tall fescues is easily seen. Turf-type is on the left, forage-type is in the middle and dwarf/semi dwarf on the right.

meters.

"There is no quantitative standard for determining a dwarf," he said. "It is used indiscriminately. It's something the marketing people have grabbed onto and attached to far too many varieties. It doesn't mean that much anymore."

Finally, Tom Stanley, marketing manager, TurfSeed Inc., Hubbard, Ore., said some companies use Kentucky 31 as the standard to judge all others against. "Using that, everything can be called a dwarf," he said.

CHOOSING A VARIETY. Just because there are more varieties on the market than ever before — between 300 and 500 — doesn't mean an operator need throw his arms up in despair.

Much to the contrary, it's a buyer's market, according to Engelke. As long as a person buying seed knows the specific conditions of the area he wants to grow it in, he's fine.

One of the best places to start is at local universities' field days where turf trials are displayed and

explained.

"People often ask if there is a consumer guide to grass seed, and there really is if you look to your local university or county extension service," he said. "It takes some common sense, too."

"You can't choose a seed just because Company X is boasting in its advertising that the variety rated No. 1 in national trials."

Some veteran seed industry participants even have a difficult time keeping up with all the recent releases, said Joe Churchill, product manager, Northrup King, Minneapolis, Minn.

"Just 10 years ago it was a big deal when a seed company introduced a new variety, but now with so many breeders and so many releases every year it's just commonplace," he said. "From my perspective it's a full-time job trying to keep up. There's no way the end user, the buyer can be aware of it all."

One benefit of so many available varieties is being able to find one that is conducive to the desired growing area.

"Naturally, there are differences

between the old and new tall fescues, Engelke said. "Everybody's got the turf-type fescues now. So usually when someone asks me which one they should use, I usually tell them whatever one is available in their area."

WHAT'S AVAILABLE? At Zajac Performance Seed, N. Haledon, N.J., owner John Zajac is excited about two of their new releases.

The Saturn perennial ryegrass has rated No. 1 in national trials. It's currently sold out and, even though Zajac expects a reasonable harvest, it will

still be in low supply because of high demand.

Omega II perennial ryegrass has garnered first place in the national overseeding trials. It too is expected to have a high demand.

Zajac has two grasses now in development. Envy, also a ryegrass, will be available on a trial basis this year. Its main strength is an increased cold hardiness that should allow it to work well in the Northern climates.

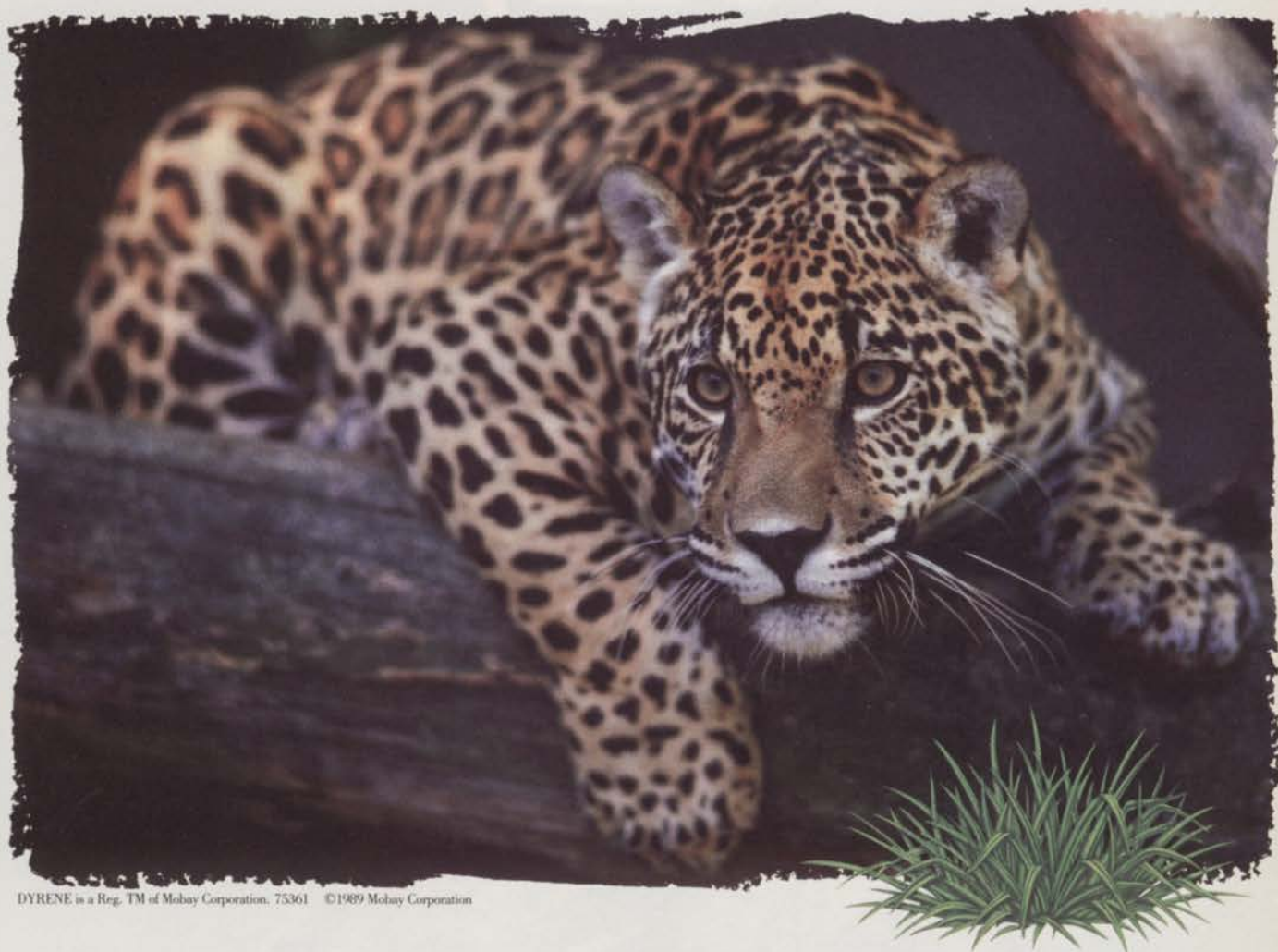
Also in early development stages is a Kentucky bluegrass with the code name ZPS 749. This is intended for low maintenance areas, but will not be available commercially for several years.

Sales of Kentucky bluegrass haven't seen a major resurgence, but Zajac said, those still using it are devoted and want improvements.

Vista red fescue has widespread availability this year after having limited quantities last year. Its main attractions include increased turf quality, a higher disease resistance and better performance

(continued on page 38)

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in shady and infertile areas.

The company also has one each of a chewing, hard and sheep fescue in trials now which will remain in limited availability for another year. They are all intended to have lower maintenance requirements.

Washington Kentucky bluegrass from Jonathan Green will see its first year of commercial availability. The variety is said to green up during the first week of March. It has ranked among the top five in national trials.

The company's Gettysburg perennial ryegrass was the darkest green in trials, according to Green. It has tested well in resistance against leaf spot and pythium blight.

Two first-year, turf-type tall fescues are Duke and Montauk. Selected for their lower growth tendencies, both will be in limited supplies.

Target perennial ryegrass from Northrup King is expected to become a "major player," Churchill said. It performs well in overseeding in the South. Plans also include it being mixed in several blends for the North.

Amigo and Arriba turf-type tall fescues, which have finished in the top one-third of national trials, will be blended with the company's existing Arrid and be called the A-Team tall fescue blend.

The company has also developed Dover chewing fescue to help incorporate its low maintenance and shade tolerance into blends and mixtures.

Prairie buffalograss developed by the Texas Agricultural Experiment Station at Texas A&M should be available later this year. This female buffalograss is a blue/green, dense fine-textured grass with a mature plant height of four to six inches.

Prairie is said to spread faster than other varieties. It's competitive against weeds and other grasses. If grown in an area with 20 to 30 inches of annual rainfall, it will require infrequent irrigation to maintain turf quality, and little or no irrigation to keep a competitive turf stand.



Early transition and general appearance of turfgrass entries during April of 1990 at a cooperative overseed trial held by International Seeds Inc., Halsey, Ore. and Western Sod, Casa Grande, Ariz.

Another buffalograss in development at Texas A&M was planted for production last month and should be available as sod in July 1991. Unnamed yet, NE 84-609 is more dense and uniform than seeded buffalograsses and establishes rapidly from sprigs or plugs.

When it becomes commercially available, NE 84-609 should perform well in minimal maintenance turf sites and with modest fertilization and irrigation, should provide good quality turf for residential lawns.

Cheyenne, a seeded turf-type bermudagrass, from Pennington Seed, Madison, Ga., will be available for late summer planting, said Don Roberts, company agronomist. This variety's best attribute is its cold tolerance. It should grow well as far North as lower Kentucky, Roberts said.

The company is also offering a turf-type perennial ryegrass called Pebble Beach. This variety germinates in about six days with first emergence appearing at seven or eight days. Stand establishment is fairly easy because of its seedling vigor and quick germination time. It has increased heat and drought resistance which will give it improved performance in the South.

Another ryegrass best adapted to the cool, moist areas of the Midwest, mid-Atlantic states and parts of Canada is Stallion. It has a moderately dark green color and produces dense turf because of its heavy tillering ability.

It performs well with moderate to low fertility, establishes quickly

and is compatible with other perennial ryegrasses of similar color and texture.

Pennington also has Fine Lawn 5GL turf-type tall fescue developed by Fine Lawn Research, which Pennington partly owns. 5GL has rated above other popular turf-type tall fescues in turf quality, drought recovery and vertical growth. It also stands up to diseases such as brown patch and leaf spot.

THE FUTURE. Engelke predicted grasses of the future will be less finicky when it comes to water consumption. Creating varieties that can grow and thrive without using potable water will be a crucial step in attempting to solve the water problem facing the lawn and landscape maintenance industry.

"Obviously the potable water supply is not increasing," he said. "We need to develop grasses that will survive on the lower quality water that has heavy metal content and saline content."

The first step is finding varieties that are more tolerant of those waters, then strengthening their tolerance and eventually putting those genes responsible for that tolerance into other varieties. It's that type of research that can take upward of 10 years or more.

A definite problem in creating such grasses, according to Edminster, will be identifying a screening technique that shows which varieties have greater water use efficiency.

"Once you find the screening technique, the next question will

be whether that characteristic is inheritable. There are so many genes that control so many different things that breeding to improve all of them is really debatable."

Another future development will center around developing grasses that are less dependent on chemical fertilizers, fungicides and herbicides. In general, future moves in turfgrass development will be toward a more natural environment.

"People are concerned with what's going on their lawns and the EPA is telling us to cut back on chemical use," Engelke said. "Eventually we will

develop grasses that are going to get by with less."

But there may be a trade-off. Moving away from general chemical use may create a turf with somewhat lower quality that won't withstand all the stresses we currently expect.

"We should be able to develop grasses that are more naturally resistant to diseases and pests, but a question certainly remains as to just how resistant they'll be," he said. "But I believe there's going to be a time when general chemical use will be a thing of the past."

Chemical manufacturers shouldn't be alarmed. Chemicals will still be needed, but they'll be much more effective and targeted to more specific problems.

He compared the situation with the increasing awareness of irrigation. Irrigation contractors are telling people there are measurable and responsible methods for applying water. In the future, chemical companies will be using basically the same message about the use of their products, he said.

Chemicals for turf maintenance will never completely disappear from the scene, Churchill said.

"There will always be a market for chemicals in the high maintenance, manicured turfs even as better grasses are developed," he said. "There's no chance of golf courses or other areas going cold turkey with chemicals. When quick results are needed, the answer will be obvious."

But somewhere, something's going to give. The entire green

industry is feeling the effect of the new environmental consciousness. From the seed companies coming up with more responsive varieties to chemical companies examining organic alternatives to operators implementing integrated pest management programs and bagging fewer clippings, it's the consumer, the property owner who is pushing for the changes.

"The chemical companies probably aren't eager to talk about the research and work they're doing, but the smart ones have to be looking at creating chemicals that are safer and better adapted to the current concerns," Churchill said. "We're all feeling the same pressure; there's no question about that. Changes don't happen overnight, so you know a good number of companies are looking into these issues."

To accomplish what they want, the property owners may have to be willing to change some of their expectations and be ready for some trade-offs, Edminster said.

But those drawbacks will remain undetermined until the grasses are developed and tested by seed companies. Edminster guessed that some of the trade-offs may involve decreased stamina and resistance.

"I don't envision a problem with lushness; I think that'll still be there," he said. "But I think there will be a difference in what the turf will be able to withstand." The high traffic, heavy use applications such as sports fields and golf courses probably won't be able to handle the wear they now do with chemical use, he said.

Homeowners may have to become accustomed to a slower spring green up and possibly an earlier dormancy.

An area to delve into that isn't sparked by environmental concerns is a continued effort to move Southern grasses farther North, extending the traditional transition zone.

Edminster said it should be possible to move a bermudagrass farther North that has extended stay-green potential — that greens earlier and goes dormant later. It could be overseeded in an area that has heavy traffic.

"Because many cool-season grasses go dormant in the summer, adding a warm-season grass for that time could be a way to

keep that area growing," he said. "We are definitely going to see warm- and cool-season grasses flip-flopped to meet certain needs in the market."

A technique that eventually would increase the amount of seed on the market is now being researched by Jacklin Seed Co., Post Falls, Idaho, said Doug Brede, company research director.

The new procedure, priming, is similar to current seed soaking methods with one major advantage. Priming gets the plant ready for germination, but doesn't actually start the process as soaking does.

If the grass seed plants are primed when they're planted in the fall, they should germinate earlier and be ready for harvest earlier than the usual July/August period, Brede said.

Then if the seed generated from those plants is primed, grass will germinate much more quickly after being planted.

"It'll be good for people who won't mind paying a little extra to have the grass come up faster," he said. "We're hoping that it will establish in 3½ days rather than a full week."

Jacklin is currently testing the priming process and expects those tests to continue for a couple years. If the process doesn't pan out as well as the company hopes, it will not market primed seed, Brede said.

As the ability to create environmentally conscious grasses becomes more crucial to the industry, the smaller seed houses lacking the research facilities will be squeezed out of the market, according to Edminster and Churchill.

"For the last three or four years while the seed supply was tight, it was fairly easy to get into the field," Churchill said. "It's not that difficult to buy a proprietary and then market it. But now buyers are going to start returning to the companies they've known for awhile and are comfortable with."

The companies that will be around in 15 and 20 years are those that have made the commitment to research and improving their product, Edminster said. — David Westrick ■

The author is Assistant Editor of Lawn and Landscape Maintenance magazine.

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Recognizing the Role Women Play in Buying Decisions

WITH THE TRADITIONAL role of American women changed over the last 25 years from that of full-time mother and housekeeper to important income producer with greater independence, marketers of products and services are faced with different marketing concerns.

As a result, many service industries have found an increasing need to address

women's buying requirements. And while women have definite views on lawn and landscape maintenance, the methods operators use to reach that audience are as varied as the services they provide.

While most operators acknowledge the role women play as both influencer and decision maker, few specifically target their marketing toward women, often

still looking to the male.

"We've found a trend in home service marketing; more women are making the decision with the possible exception of in irrigation," said industry consultant Phil Christian, Philip Christian & Associates, Alpharetta, Ga. "Most operators don't realize this. In some cases they won't talk to her or close her."

In eight out of 10 cases, the operator will try to close a sale with a male, Christian said.

Extensive surveys have shown a substantial increase in female purchasing power both at the information gathering stage and the final sales stage. This development can be attributed to a number of influences, particularly the dramatic increase in two-worker families. A female is just as likely to be out of town three or four days a week as a male.

"As more males and females work, there's no clear differentiation between inside and outside chores," Christian said. "But she's more in charge of the entire nest and also the one who cares the most. She's still there more often than the male."

"There's a demand for increased quality around the home and a need for owners to be less involved," he said. Homeowners are "subcontractor minded" — a positive stride for the lawn and landscape maintenance industry.

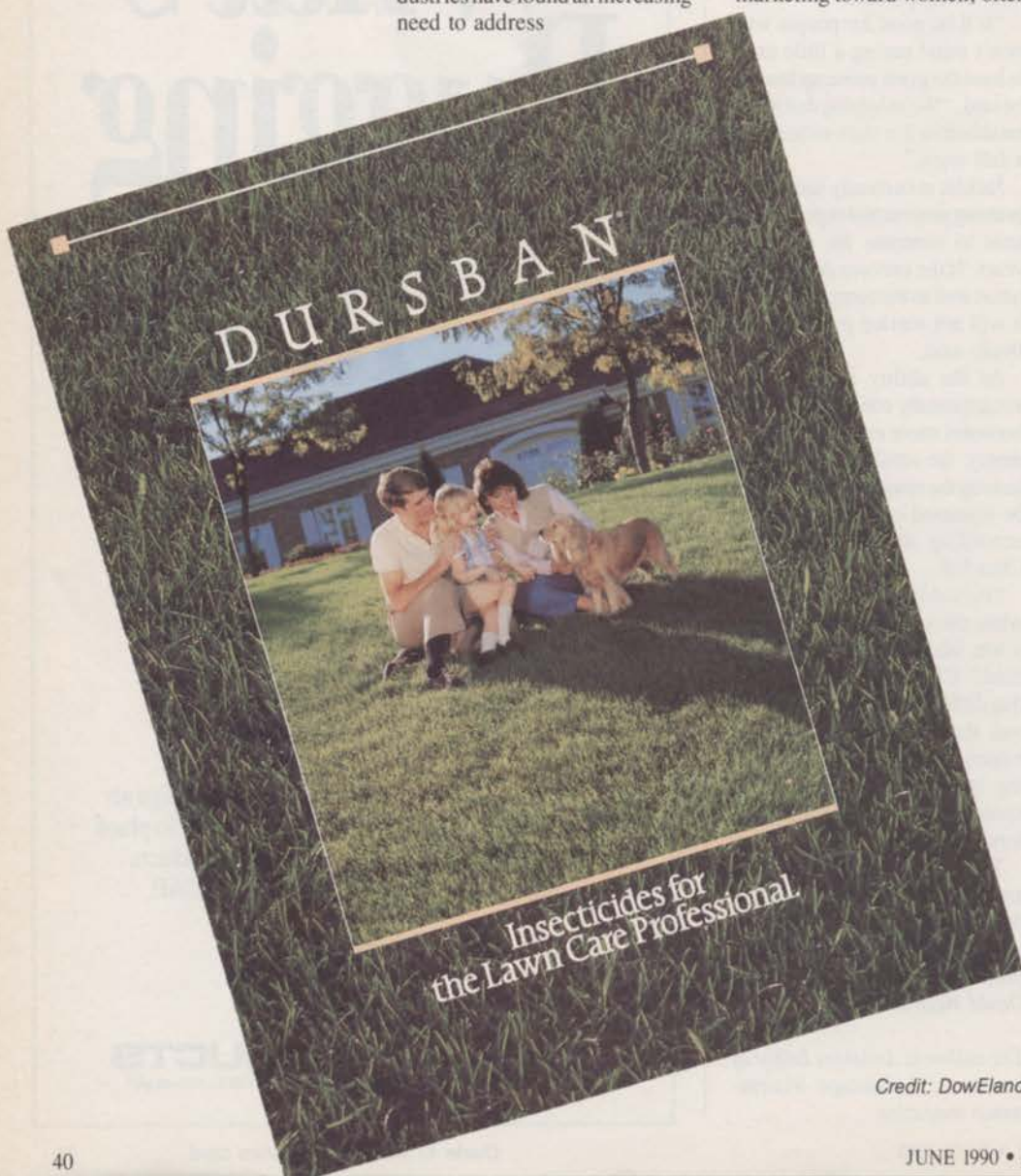
A Mobay Corp. survey of 505 homeowners revealed that 52 percent of those making decisions regarding lawn maintenance were female.

Dan Meek, Mobay product manager for turf and ornamentals, said women are typically more concerned with the toxicological effects of pesticides and the environment.

But Mike Davids of Clarence

Credit: DowElanco.

(continued on page 42)



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VARIETY	AVG. SCORE
Chateau	6.0
Classic	5.9
Challenger	5.8
Ram I	5.7
Julia	5.7
Eclipse	5.6

Rated 1-9; 9 = Best

Turf Color

LINCOLN NEB.-2 YR. MEAN

VARIETY	AVG. SCORE
Midnight	7.9
Chateau	7.0
Baron	6.9
Fylking	6.8
A34	6.5

Rated 1-9; 9 = Dark Green

Summer Density

NATIONAL TURFGRASS
EVALUATION PROGRAM 1987

VARIETY	AVG. SCORE
Chateau	7.3
Challenger	7.2
Bristol	7.1
Julia	7.0
Liberty	6.8
Nassau	6.6

Rated 1-9; 9 = Maximum Density

Shade Performance

MARYSVILLE, OH 1981-82

VARIETY	AVG. SCORE
Chateau	2.32
Eclipse	2.20
Birka	2.01
Glade	1.65

Rated 1-4; 4 = Best



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Marketing to Women

(continued from page 40)

Davids Inc., Blue Island, Ill., said he thinks 52 percent is low for the number of women making buying decisions.

"We typically know if we're dealing with a husband up front, the wife had something to say about it," Davids said. "We make a conscious effort to address women in the selling process."

Regardless of recent statistics, a disparity remains on how and when to use such information.

"One or the other (male or female) may generate the interest in landscape services, but they generally decide on the service together," said Ron Kujawa, president Kujawa Enterprises, Cudahy, Wis. "I can't say one is more dominant than the other. It's such an individual decision, there's no discernable trend."

"We don't differentiate one way or another toward an individual in the house," said Tim Doppel, president, Atwood Lawn Care, Sterling Heights, Mich. "We basically let our results and our services tell the story regardless of the decision maker."

At one time, Atwood targeted the male as the key to a sale, but readjusted its thinking to recognize the influence of the female.

"We still think the majority of outdoor landscaping decisions are made by the husband, but we've found more success in selling if we win over the woman of the house, whether she's the head of the house or not," he said.

Doppel added that he doesn't think women have been overlooked as key decision makers, but operators need to be more careful

leisure time availability is decreasing," said Russ Frith, president of Lawn Doctor, Matawan, N.J. "We found that decision making in this area appears to be stronger male oriented. But even eight to 10 years ago, there was a strong secondary audience of females. It's sufficiently close, and we want to be responsive to both."

Charles Fahrenkopf, vice president, sales and design for Adsit Landscape and Design Firm, Memphis, Tenn., said the income level of his clients dictates that women make decisions on landscaping.

"With the family structure and income level of the clients we're dealing with, our services have almost always been directed to the woman because she's more likely to be home," he said. "Women have always been a strong partner, if not the decision maker, when it comes to landscaping."

Among other things, Adsit provides specialty maintenance services to its clients including the installation and care of seasonal flowers and their beds.

Unlike maintenance and installation, interiorscaping has almost always had a strong link to the female buyer. Bob Maronde, president of Exotic Plant Rentals, S. Elgin, Ill., said the profile of a typical buyer really hasn't changed in the residential environment, but now sees more women making the decisions in the commercial environment.

"Even 10 to 15 years ago, we were sitting down with the woman of the house. The service really hits home," he said. "But we're now seeing women taking over in office and facilities manage-

.....

Surveys have shown a substantial increase in female purchasing power both at the information gathering stage and the final sales stage. A major contributor to this is the rise of two-income families.

recognizing the number of households headed by women.

"It's not fair to say we market to any particular gender, but (instead) to the homeowner who's

ment."

When it comes to selling to the residential market — one in which women decision makers are very much involved — operators can



Studies show women will give more regard to brochures depicting a family setting.

profit from understanding the need for paying careful attention to the female viewpoint, for it's women who are the primary decision makers in purchasing home services, according to most reliable market sources.

According to the U.S. Census Bureau, of the 50 million women in the United States 62 percent are currently in the work force. Projections indicate that by the end of the century, women in the work force will increase by 13 million while the number of men will decrease by 7.7 million.

Interestingly, other statistics indicate that while many women leave the work force to have children, half of the new mothers are back on the job before their baby's first birthday.

In addition, females account for 70 percent of all U.S. households and control 85 percent of consumer income, according to Art Weinstein, a marketing professor at Florida International University. Weinstein suggested that traditional husband and wife families will continue to decrease, while families headed by females will continue to increase in the years ahead.

WHAT DOES IT MEAN? The fact that more wives are busily engaged in the work force and find less time and attention to devote to household chores has meant, and should continue to mean, more opportunities for home services like lawn and landscape maintenance.

This has not been lost on many advertisers to home markets whose commercial message is that their products and services offer convenience and significant time savings.

"They all want something nice. Something with low maintenance and that's aesthetically pleasing," Fahrenkopf said. "Landscape serves the same value whether it's sold to a male or female."

Landscaping is an extension of a home, but most people just want to come home and enjoy it.

People concerned with marketing to women today often find themselves in a dilemma. On one hand, there is the need to address women as equals in a non-sexist manner. But it is also a fact of life that women have specialized needs that must be addressed.

"Women understand the marketplace and want someone who

can provide them with specialty services, not just a yard boy," Fahrenkopf said. "If they've made a good-sized investment in their landscape, they don't want someone who doesn't have horticultural experience and knowledge."

When developing marketing brochures keep women in mind. Change the strong reds, whites, blues and greens to softer shades, Christian said.

"She doesn't care about equipment. She's more apt to appreciate children and a dog in the yard," he said. "She's a more pleasant target, but softness can't trick her; she's a professional buyer."

Christian also suggests these marketing techniques: reduce the technical information, stop emphasizing "killing" talk directly to women and sell the company and its services.

"Women are much more practical to sell to. They like weed control, but they're not hung up on it," he said. "They want to buy from someone they like and can believe in."

Dauids said he has observed

The two most important affronts to women are to talk cute to them and to imply that their domestic chores are more important than their souls.

that women tend to be more attentive to color schemes and have a better grasp of blending the interior elements to the exterior.

ADVERTISING FACTS. *Advertising Age*, an advertising trade publication, in 1988 featured a special report on marketing to women and came up with the following facts of interest to businesses concerned with reaching out to women in the marketplace:

- For advertisers interested in reaching women for the first time the most effective avenues are women's magazines, drive-time radio, late night TV and billboards.

- Women can't be reached at home via traditional media any more. You have to catch them on their way to work, on the way home from work or during lunch.

- Compared with housewives, working women drive 25 percent more miles daily, watch 57 percent less daytime TV and read 10 percent more billboards.

- While women are the dominant decision makers in buying food and clothing, their decision making role is increasing in male-dominated categories such as autos, insurance and housing.

- Women give radio the greatest share of their media attention, spending close to three hours a

day listening to radio.

George Lois, a New York advertising executive offers some sound advice to advertisers who want to succeed in marketing to women in his best-selling book *The Art of Advertising*.

"The best advertising to women talks to them the same way as to men. It acknowledges their concerns and deals with their needs but it *never* resorts to a separate language. The two most important affronts to women are to talk cute to them and to imply that their domestic chores are more important than their souls. For too long women have been abused in advertising. They've been spoken to as fools or depicted as nitwits."

In order to compete in the dynamic lawn and landscape maintenance industry, it's necessary to keep an eye on the prominent role women are playing in the selection of maintenance companies.

— Cindy Code ■

The author is Editor of Lawn and Landscape Maintenance magazine.

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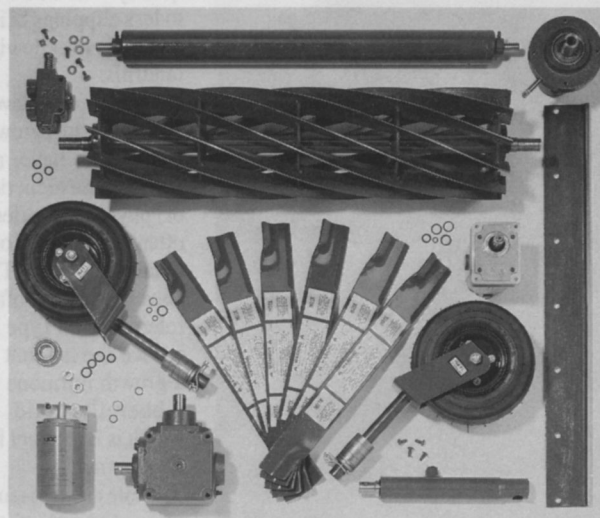
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PGRs: Not Just For Low Maintenance Areas Anymore?

WITH THE LAWN AND landscape industry under regular assault for its use of pesticides, maintenance operators may want to examine various techniques that could increase their business and contribute to a positive industry image.

One such way is investigating the use of turf growth regulators. Once considered only a tool for low maintenance areas such as roadsides, these products can now be considered for commercial and some residential applications.

The basic advantage of using a growth regulator is a reduced growth rate producing a lower mowing frequency. This, of course, can relate to a labor savings per job and allow you to cut more lawns with the same crew.

Reduced mowing frequency will also lead to less clippings being hauled to overflowing landfills.

Fairly recent developments in turf growth regulators have resulted in the reduction of phytotoxic effects often displayed by original regulators. The newer versions, often referred to as Type II, reduce the amount of a growth hormone — gibberellic acid — which is important for shoot growth.

While growth is suppressed, the plant still develops an inflorescence, but the whole plant is reduced in size.

Older regulators actually stopped a plant's cell division, often leading to adverse effects.

CAREFUL APPLICATIONS. Although encouraging the use of PGRs, manufacturers caution it

requires an application precision operators may not be accustomed to.

"A major hurdle in having them (PGRs) move into lawn care companies is the application technique," said Brian Stidham, marketing associate for DowElanco, which produces Cutless. "Growth regulators are much less forgiving than a fertilizer or herbicide when it is misapplied."

Because the compound's effects can last up to 16 weeks, an over-application in one part of the treated area could lead to uneven growth; resulting in irregular growth patterns throughout the turf. But at the same time, some overlapping is needed to ensure there won't be strips of untreated turf.

Growth regulators at this point are not ideal for high traffic areas such as a main lawn in a residential area. Heavy traffic mats down the turf and because its growth has been slowed, it won't grow back and refurbish itself.

A PGR's best use is still on areas that have low traffic and areas which would normally require heavy trimming.

At PBI/Gordon, producers of Limit, recommended uses for turf regulators include almost anything other than single family homes, said Doug Obermann, product sales specialist.

While growth regulators inhibit growth, the misconception that growth cannot be slowed without killing the plant has hampered a more widespread use of the products, Obermann said.

"A lot of people just don't think it's possible," he said. But once someone tries a growth regulator they usually are pleased with the results and continue using them.

The best time for application is four to six weeks after spring green up, Obermann said. Apply-

ing the product before the seed-head reproduction stage brings best results.

When seedheads are reproducing, the plant directs much of its nutrients away from other parts of the plant toward the seedheads because the process requires a great deal of energy. When this process begins, the quality of the turf declines somewhat. If a PGR is applied at this point, that quality will remain longer.

Ideal uses for regulators that haven't been adequately tapped yet include large commercial/industrial complexes with spacious unused turf areas and condominium complexes, according to Obermann.

"No matter what city you're in, you can drive down a highway and see offices with large turf areas that obviously aren't used," he said. "Anyone working on areas like that in a competitive bid situation will certainly benefit from using a PGR."

A good rule of thumb, according to Obermann, is every application saves two or three mowings over about a 12- to 16-week period.

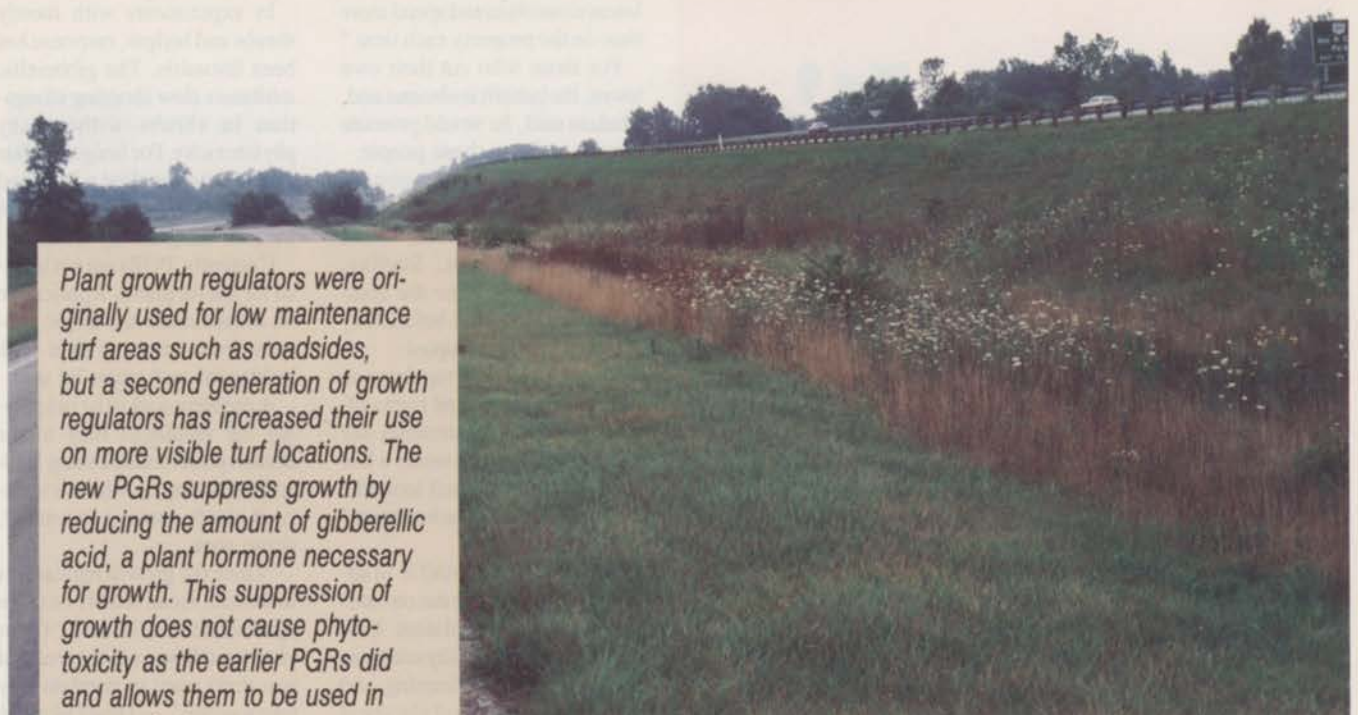
"Typically one application in the spring is most common, but if you make a second application in late summer or early fall that will lower the mowing needs even more," he said. "For guys in competitive bids, that means they can safely bid 24 or 25 mowings a year while the others are bidding 30. It'll help get business."

Anything that can cut down on trimming needs at condominium sites is a definite advantage because it reduces noise in the usually densely populated areas, he said.

Typically the cost for an acre application is about \$42. Studies show the actual cost of mowing to be about \$45 to \$60 per acre



A PGR treatment, such as the treated area away from this bank, maintains green turf color while slowing grass growth.



Plant growth regulators were originally used for low maintenance turf areas such as roadsides, but a second generation of growth regulators has increased their use on more visible turf locations. The new PGRs suppress growth by reducing the amount of gibberellic acid, a plant hormone necessary for growth. This suppression of growth does not cause phytotoxicity as the earlier PGRs did and allows them to be used in more turf sites.

depending on the terrain and other variables, Obermann said.

An acre's application is about equal to one mowing, so they do prove to be cost effective.

Growth regulators will also benefit those who work on an annual contract basis rather than through pay-per-mow methods.

"There are still some guys who say they're paid to mow and not to reduce mowing," he said. "But when you start talking to them about annual contracts and fixed payments, they see the benefits."

Operators shouldn't jump into using PGRs, however, without knowing exactly what to expect, said Dean Mosdell, project leader, research product development, Scotts Co., Marysville, Ohio, which makes the Clipper brand.

"Growth regulators definitely have limitations," he said. "You need to know what those are before using them and ending up disappointed."

He classified PGRs as a viable option for competitive bidding, but said, only a small percentage of operators could make use of them in main lawn areas.

"Their biggest drawback is causing heavy stress to be all that much more visible," he said. "If you try using one on a high visibility area that isn't irrigated,

that's taking a lot of risk. If a dry spell comes along, that grass will show the effects first."

OPERATORS' EXPERIENCES.

At least one operator who's been successfully using growth regulators on low maintenance, out-of-sight areas isn't ready to rush into using them on high visibility turf.

Dale Bray, Custom Garden Inc., Newport News, Va., wants to experiment on his own grounds before moving onto customers' property.

Up to this point, he's used PGRs on ditch banks. Before using them, he was cutting the ditches about five times a year using weed trimmers. That has now been cut back to three times a year.

"I'm satisfied with those results, but am a little reluctant to start using it in more visible areas," he said. "I want to experiment with them on the grass around my shop before I get into using it anymore than I already am."

His main concern is the phytotoxicity. Yellowing isn't immediately apparent in ditch banks, but when examined closely, he has found a slight discoloring.

One way in which PBI-Gordon attempts to reduce the yellowing side effect is by adding Ferromec iron/nitrogen fertilizer to the

growth regulator. The nitrogen and urea in the fertilizer ensures that both the iron and growth regulator are getting into the grass plant.

This helps because most of the yellowing comes from overlapping the application. The iron will help fight the yellowing, Obermann said. Also, the Type II PGRs cause less discoloring because they inhibit growth rather than completely stopping cell division.

In addition to coloring problems, Bray's also concerned about customer acceptance.

"They're used to seeing you out on the site on a regular basis and they're used to that fresh-cut look," he said. "I'm not sure how they'd react to using a turf regulator, and I can't sell it to them until I'm sure of it."

Bray said he's always considered low maintenance field areas, where grass can grow to about six inches, as the ideal location for regulators. He's not sure that can be transferred to his clients.

"When it's done that way, the growth is even and uniform," he said. "So it doesn't look bad letting it grow that high. But I don't think many property owners would accept grass getting that high."

Too many people think that using growth regulators will end

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their mowing requirements, said Bruce Branham, professor of crop and soil science, Michigan State University, East Lansing, Mich. Operators need to lower their expectations and realize there are limitations.

"They reduce mowing requirements by about 40 percent over a six-week period with minimal quality loss," he said. "They're probably best to use during the flush of growth in the spring."

While improvements have been made since the first available PGRs, Branham said, it will take more improvements before regulators gain acceptance and widespread use.

"I'm not sure that a 35 to 40 percent mowing reduction is going to sell that many operators on it, especially when you consider the more precise handling they require," he said. "If we can get the reduction rate up to 60 or 70 percent then there'd be widespread interest."

Another result of using PGRs is a deeper color after the effects have worn off, said Jack Edmondson, product development director, DowElanco, Greenfield, Ind.

This results from the same number of chloroplasts — which control the color — being formed in the smaller cells the regulators cause. The higher concentration of chloroplasts create a darker green color, which some people say looks unnatural.

Even operators who do not mow may be interested in growth regulators.

Drew Madzin, Royal Lawns of Monmouth Inc. in New Jersey, who doesn't mow, received favorable results from experiments he conducted on his lawn.

He used Embark and Cutless. Both provided good growth reduction, but comparing the two products would be too difficult, he said.

He tried Embark during a drought period which he thinks affected the turf's ability to recover. He would like to be able to offer them to his customers, but none are currently labeled for high traffic areas.

He views using them as beneficial to himself and customers, but for different reasons.

"I would like it because a lot of the cutters in this area don't like cutting our lawns because they're

so thick, lush and green," he said.

"They say they have to cut our lawns more often and spend more time on the property each time."

For those who cut their own lawns, the benefit is obvious and, Madzin said, he would promote them heavily to those people.

With mostly large condominium developments for accounts, Gerry Chauvin, Green Thumb Enterprises, Sterling, Va., uses PGRs after the complexes are built, but before they are completely occupied.

"We use a growth regulator on the common areas and rights-of-way," he said. "It stretches our mowing to about two weeks while ensuring that it doesn't look like the developer has gone bankrupt."

RESEARCH ON PLANTS. In addition to the longtime use on roadsides, growth regulators have also been used by utility companies for reducing trimming and pruning needs around electrical wires.

Tom Banko, agriculture and life sciences college, Virginia Polytechnic Institute and State Univer-

sity, is attempting to broaden that use to landscape plants and shrubs.

In experiments with mostly shrubs and hedges, response has been favorable. The gibberellic inhibitors slow shooting elongation in shrubs without any phytotoxicity. For hedges, he has sheered then applied a PGR and the growth is held in check for most of the growing season.

Currently, PGRs are not labeled for use on plants. Application on ornamentals is a major concern, even more so than with residential turf areas, he said.

A problem may exist in applying the regulators only to the desired plants because many landscape planting beds have a variety of plants growing in a small, dense area.

"Once the growth regulator is in the soil, it can readily be taken up from the soil," he said. "Other plants and flowers in the area that you don't want to regulate may take it up too." — David Westrick

The author is Assistant Editor of Lawn and Landscape Maintenance magazine.

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Maintenance Checklist For Commercial Mower Safety

WITH SUMMER AND busy operating schedules under way, safety and mower maintenance must play a vital role in your business.

To ensure safety among your employees, it's important to demonstrate your interest in safety by initiating a firm and positive policy that includes providing

basic precautions for the use and care of the trim and midmower are discussed below. The information was gathered from a variety of sources including the Associated Landscape Contractors of America.

MOWER HANDLING. The trim mower is versatile and more easily

controls.

On some of the mowers, the throttle lever is on the handlebars. On others, the controls may be located on the mower frame.

The trim mower is a self-propelled unit; meaning, it has a drive clutch. As a result, a "de-clutch test" must be performed before starting the mower. Be sure the self-propelled mechanism is disengaged prior to the prestart inspection and start-up.

For the declutch test, squeeze the clutch control lever to the handle engaging the clutch, then pull back on the mower. Release the clutch control lever and the rear wheels should turn freely.

A midmower is somewhat more complex than a trim mower and requires some additional knowledge to operate. It's a heavy-duty mower for use in large turf areas, cuts a wider swath and offers twin or three blades.

Differences include: In-line fuel strainer, top plate on the mower housing, inflatable tires, front castor wheels, separate throttle, cotter pins, additional grease fittings, drive belt tension lever, twin blades and lock nuts

at the top end of blade bolts.

Additional controls include: Ground speed lever, separate throttle, blade lever, wheel drive levers and lock tabs.

Midmowers are equipped with a fuel strainer positioned for easy viewing, which traps foreign particles and prevents them from entering the carburetor. When it becomes clogged, it must be cleaned. The "see through" cover permits viewing without disassembling.

The throttle is on the crossbar in the center of the mower. It has three positions: Off, full on and idle.

PRESTART INSPECTION. Always conduct a prestart inspection on all power equipment before starting the engine. Do this on a hard surface, not on turf or bed areas. A prestart inspection can avoid a serious maintenance problem with the equipment and, more importantly, it can prevent a serious accident or injury.

Before starting this inspection or any other maintenance work on the mower, disconnect the spark plug wire. Also be sure the self-propelled mechanism is disengaged.

During this inspection, you want to check the following:

- Fuel level. Always start with a full tank. A partially full tank will result in a delay while waiting for the engine to cool. Fuel spilled on a hot engine is a fire hazard.
- The cork liner inside the gas cap. This is designed to prevent fuel leakage when the mower is tipped. It's not always fail-safe and leakage can still occur.
- Oil level. The oil level should be full and clearly visible before starting the engine.
- Nuts, bolts and screws. If any are loose, make sure they are "wrench tight" before start-up. A loose bolt at a critical location

It's important to demonstrate your interest in safety by initiating a firm and positive policy.

protective equipment to employees and safety devices on equipment.

Safety is an ongoing concern and should be addressed through regular meetings, giving supervisors and management opportunities discuss problems and accidents which have occurred, and to prevent recurrences.

Not only does proper safety protect your employees, it can lower costly insurance premiums.

Since safety and equipment maintenance go hand-in-hand,

adaptable to yards, tight spaces, curves, steeply landscaped areas, rugged areas and places not easily accessible to the larger, heavier mowers.

Some of the basic parts of the trim mower are:

The air cleaner (filter), the jackshafts, the idler arm, the idler pulley hub, oil fill plug, fuel tank, muffler, carburetor, spark plug, fins (cooling vents), starter recoil handle, oil drain plug (on the bottom of the mower), pulley belts, deflector or grasscatcher and

PROTECTIVE CLOTHING/PERSONAL GROOMING

- ✓ Keep hair relatively short and finger nails trimmed so they will not get caught while performing certain tasks.
- ✓ Wear clothing that is not loose; make sure buttons are fastened and shoe laces are tied. Wear steel-toed shoes where required.
- ✓ Do not wear rings or dangling necklaces that may get caught in machinery or equipment.
- ✓ Wear gloves when it is cold out, or when working with materials that have abrasive surfaces.
- ✓ Use hard hats and protective eyewear when working around machinery or equipment that might throw objects at you, or on a job site where materials may fall.



Make sure to keep deck covers and all safety guards in place. If a deflection shield is not being used, then a grass-catcher should be in place before starting the mower.

can set up an engine vibration and cause extensive damage to the mower.

- All safety guards and shields are in place. If a deflection shield is not used, then a grasscatcher must be in place before start-up.

- Pulley belts. Check for looseness or fraying of the belt. If necessary or indicated, change the pulley belt before start-up.

- Grasscatcher. Check this for holes or tears. Also, be sure that the latch on the metal end of the grasscatcher is securely latched.

- Blades. Blades must be checked for tightness, bends, cracks and their general condition. A bent blade must be replaced before starting the engine.

Take the time to read all warning and caution decals on the mower and familiarize yourself with all the controls.

The final step in the prestart inspection is reconnecting the spark plug wire.

KNOW THE CUTTING AREA. After the equipment is checked out, the operator must familiarize himself with the job site before starting the mower.

Walk the area to be worked. This is particularly important if you have never worked the site before. This quick inspection will make you aware of the specific needs of the site.

Be sure to check for hidden hazards such as rocks or stones, broken bottles and wires. Pick up

debris. Rocks and bottles become flying projectiles when struck by the mower blade.

Look for holes in the ground or uneven terrain which often account for sprained or twisted ankles, or can create a dangerous situation in case you slip and fall with the mower running.

If the area is irrigated, make sure you know where the sprinkler heads or copper rises are located. This presents a safety hazard if you trip on one. It also presents the problem of property damage, should the mower blade impact a sprinkler head. Your company is responsible for any damage to a customer's property. Be sure your mower blades will clear all sprinkler heads.

Be alert for insects such as bee nests, fire ants or dangerous plants such as poison ivy or oak.

Finally, be sure no person or pet is in the area prior to start-up.

COLD ENGINE START-UP. Starting mowers on a hard surface is always easiest. Position feet well away from the blade area before placing the speed control lever in the "start or fast" position.

Grasp the starter recoil handle and pull the cord out rapidly to overcome compression and prevent kickback. Then return the starter recoil handle slowly.

Remember that short, fast pulls are most effective. Pulling the starter rope out its full length will cause rope breakage. Letting the

rope snap back to place will cause internal damage to the spring in the starting unit.

Should the engine fail to start as a result of flooding, Move the control lever to the "stop" position, pull the starter rope six times. Move the control lever back to "run" and pull the starter rope.

OIL FILL. Always shut down the engine before checking the oil. The system is under pressure and will spew oil if the engine is running. Check the oil level before starting the engine for the first time and re-check it each time gasoline is added.

When changing oil:

- Place the mower on concrete or a hard surface.

- Wipe around the oil fill plug before removing the plug to prevent dirt and grass particles from entering the crankcase.

- Use a funnel. Remove the funnel often and make visual checks to prevent overfilling.

- Pour slowly.

- Immediately wipe up any accidental oil spill to minimize damage. Concrete is porous and will absorb the stain.

- Fill the crankcase full.

- Replace the oil fill plug immediately.

Never check the oil level with the engine running and don't set oil cans on turf or bed areas. Oil will kill the grass and contaminate the soil.

LUBRICATION. One of the most damaging things to equipment is friction damage from lack of grease and oil. This will greatly shorten the life of the equipment causing unnecessary damage and wear to component parts. A grease gun should be carried as part of the truck's equipment.

The trim mower and the mid-mower must be greased routinely once a week. It may require more frequent greasing if the wheels aren't rolling freely or if they're squeaking.

Grease fittings are found on the outside of each wheel. Attach the grease gun to the grease fitting then pump the grease gun until the bearings are adequately lubricated. Usually two pumps of the gun is adequate.

In addition, an oil can should also be a mandatory part of the truck's equipment. Use SAE 30WT oil (or equivalent).

Trim mowers should be oiled under the same conditions for greasing.

The areas needing oiled are between the wheel hub and thrust washings on both sides of each wheel, the jackshaft bearings, the idler pulley hub and the idler pivot arm.

BLADE CHANGE. Extra blades should be carried on the truck in case a blade is damaged on the job. Inspect the blade carefully

for cracks, bends and tightness.

If you accidentally strike a rock or hard object, always shut down the mower and carefully inspect the blade area. Excessive vibration may result from a bent blade.

When working on blades always wear heavy gloves and use an extension on your wrench.

When tipping the mower on its side, make sure there isn't any oil leaking that can get into the carburetor and foul the engine, and that there is no gas leaking which can get on the hot engine.

The blade must be installed with the wing "tips" pointing toward the bottom of the mower. Blades should be sharpened on a daily basis.

Midmowers are equipped with twin blades. Two wrenches are needed to change the blades. The two nuts visible through the access holes on the topside of the mower plate connect to the end of the blade shaft. These nuts are accessible without removing the top plate.

With the mid mower, it's best to change blades on a hard surface. After turning the mower on



Keeping your equipment clean is vital. Daily cleanings should be routine. Excessive grass accumulation puts an overload on the engine.

its side, place one wrench over the nut on the topside of the mower. Then place the second wrench (using an extension) on the blade shaft bolt on the bottom side and loosen the shaft.

When the nut is free from the top side, remove the blade and shaft from the bottom side. Remove the spacers and the old blade from the shaft. Place a new blade on the shaft first, then add the spacer. Insert the blade shaft and secure the nut on top. Always be

sure the blades are tight.

DECLOGGING AND CLEANING. All power equipment needs to be washed and declogged daily and steam washed weekly.

After disconnecting the spark plug wire, thoroughly hose down the top side of the mower paying particular attention to the fins. Dust, dirt and grass particles clog the vents and restrict the cooling of the engine, resulting in extensive damage to the equipment.

Scrape off the grass accumulation of the underneath blade area before washing it.

Remember that damp grass will accumulate on the underneath side of the mower at a much faster rate than dry grass. It may be necessary to scrape off the excess grass accumulation at a job site. Excessive grass accumulation puts an overload on the engine and reduces its efficiency. ■

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Diagnosing Woody Plant Foliage Injury by Chewing Insects

PROPERLY DIAGNOSING damage caused by insects and diseases is important in developing a program for their proper management. However, this step is often difficult, particularly if the causal pest is not present on the plant.

Many insects and mites make characteristic types of injuries.

Others produce characteristic by-products or structures, such as silk webbing, which can aid in diagnosis. By recognizing these common injury patterns, it's often possible to guess the cause of the injury with a high degree of confidence.

Several groups of insects feed by chewing on the foliage of

plants. This includes members of the insect orders Coleoptera (beetles); Lepidoptera (butterflies, moths); Hymenoptera (sawflies, bees, wasps, ants); and Orthoptera (grasshoppers, crickets). Plant feeding members of these insect groups will remove leaf parts, often in a distinctive manner.

A KEY TO COMMON INSECT GROUPS CAUSING FOLIAGE INJURIES TO WOODY PLANTS

NOTE: This key is organized by couplets. Start from the beginning (1 a and b) and read the description. At the end of the line will be either the correct answer or the number of the next couplet you should move to. For example, if the damage that you are seeing involves some removal of the surface leaf tissues, you are directed to move to couplet 2.

- | | | | |
|--|--|---|--|
| 1a. Damage involves removal of surface leaf tissues | 2 | 9a. Injury is generally confined to the interior of the leaf, consisting of roughly circular holes | Leaf beetle adults |
| 1b. Damage limited to tissues between leaf surfaces or involves swelling of leaves | 15 | 9b. Injury originates along leaf margin (notching) | 10 |
| 2a. Most leaf tissues are consumed, including many of the smaller veins | 6 | 10a. Injury may penetrate more than 1/2 inch into the leaf. Wounds may be large and irregular; or very smooth and semicircular | 12 |
| 2b. Feeding is selective and avoids leaf veins, leaving veins intact (skeletonizing) | 3 | 10b. Injury confined to leaf margin, occurring as a series of small irregular wounds (notching) that penetrate less than 1/2 inch | 11 |
| 3a. Skeletonizing occurs on upper leaf surfaces | 4 | 11a. Notching wounds in shallow, moderately regular patterns and are limited to only a few species of plants | Root weevils (such as black vine weevil) |
| 3b. Skeletonizing occurs on lower leaf surfaces | 5 | 11b. Wounds occur in an irregular manner and are scattered among a large range of plant species | Grasshoppers |
| 4a. Skeletonizing scattered over the plant, often many species of plants affected | Scarab beetle adults | 12a. On coniferous trees | 14 |
| 4b. Skeletonizing in patches, limited to a few related species | Slug sawfly larvae | 12b. On deciduous trees | 13 |
| 5a. Skeletonizing in patches, with some feeding on upper leaf surfaces, old dark larval skins may be present | Leaf beetle larvae | 13a. Wounds very regular, occurring as a semicircular cut | Leafcutter bees |
| 5b. Skeletonizing associated with small caterpillars or small white cocoons present | Skeletonizers | 13b. Wounds irregular. Smaller veins as well as other leaf tissues are consumed | Caterpillars, Sawflies |
| 6a. Webbing conspicuously associated with leaf injury | 6 | 14a. Damage primarily confined to older needles | Pine sawflies, Pine butterfly |
| 6b. Webbing not produced, or not conspicuous | 9 | 14b. Damage primarily confined to current season growth | Budworms, Douglas-fir tussock moth |
| 7a. Webbing ties together only a few (less 1/2 than five) leaves and a single larva present within the webbed area | Leafrollers | 15a. Injury involves a hollowing out of the leaf or needle | Leafminers, Needleminers |
| 7b. Webbing very prominent and covers branch terminal growth or concentrated along branch crotch | 8 | 15b. Injury involves a swelling or growth on the foliage | Gall making insects and mites |
| 8a. Webbing dense, concentrated at crotch of branches | Tent caterpillars | | |
| 8b. Webbing covers foliage on which caterpillars are feeding | Fall webworm, Ugly nest caterpillar, Mimosa webworm, Tiger moth caterpillars | | |



BEETLE INJURIES. Leaf beetles (Chrysomelidae) are among the most common foliage feeding insects. They include the elm leaf beetle, cottonwood leaf beetle and imported willow leaf beetle. Most injury is caused by the larvae, which often feed in groups on the underside of the leaf.

The larvae confine their feeding to tender tissues between the veins. This results in a characteristic skeletonizing injury since the "skeleton" of the leaf — the veins — remain intact. Older leaf beetle larvae may move to the upper leaf surface, continuing to skeletonize.

Adult beetles chew oval holes through the leaf. The size of the hole varies with the size of the insect. One leaf beetle subgroup — flea beetles — make small, pinhead-sized holes scattered across the leaf. This is sometimes known as shothole feeding. It's often easy to find both beetle larvae and adults on the plants, confirming diagnosis.

A few other beetle groups also skeletonize foliage. Most notably adult stages of **scarab beetles**, such as the Japanese beetle and rose chafer, feed in this manner. These beetles primarily damage the upper leaf surface.

Black vine weevil adults confine their feeding to the leaf margin. Leaves are irregularly notched at several points on a leaf. Adult leaf feeding tends to be

concentrated to a few preferred plants such as euonymus and yew, although they will also feed on many other plants. Since black vine weevils feed at night and hide during the day, they are rarely observed during foliage feeding.

CATERPILLAR INJURIES. Insects in the order Lepidoptera make up the largest group of foliage chewing insects on woody plants. Damage is done by the immature (larval) stage, often known as caterpillars. Among the most damaging species are gypsy moth, Douglas-fir tussock moth, various tent caterpillars and cankerworms.

Caterpillars feed rather indiscriminately upon foliage. Typically, they start to feed along the leaf margin, moving inward. This results in large, ragged leaf wounds. Entire leaves, except for the main veins, may be consumed as the insects grow.

Most caterpillars feed at night, but usually rest near the feeding site during the day. During outbreaks, or in the late stages of development, additional feeding may occur during the day. Most lepidopterans damaging trees and shrubs have only one generation per year.

Many young caterpillars, including **bagworms**, may feed away from the leaf margin, creating small holes in the leaf simi-



lar to leaf beetle adults. As the caterpillars get older, however, damage becomes more extensive and typical. The presence of the "bag" in which bagworms develop is diagnostic and remains on the plant.

Injury by caterpillars on conifers is concentrated on the needles produced during the current year. **Budworms** and most **tussock moth** caterpillars can be serious pests of conifers, particularly in forest situations. Older foliage will be eaten after the new growth is depleted. (A few caterpillars, such as the **pine butterfly**, favors feeding on older needles.)

Leaf clipping may also be associated with some caterpillars. This is well illustrated with **dagger moth** larvae who clip the petiole of the leaf on which they



Production of webbing is characteristic of caterpillars. Tent caterpillars usually make dense tents in the crotches of trees and shrubs (above left). The larvae of many leaf beetles, such as the elm leaf beetle, remove the tissue between the veins of the lower leaf surface. (above right). Leaf-miners are insects which develop by feeding between the upper and lower leaf surface. The pattern of mining can be characteristic, such as this digitate mine on black locust (left). Photos: Whitney Cranshaw.

were feeding at the end of their meal.

Webbing is associated with many caterpillars which is useful for diagnosing many pest problems. The presence of conspicuous webbing almost invariably indicates that caterpillars are present.

(Exceptions to this are an uncommon group of sawflies known as the web-spinning sawflies. Spider mites also produce webbing that may be noticeable during extremely heavy outbreaks. Of course, the true spiders also produce webbing, but spiders do not damage trees and are beneficial in their habits by feeding on pest species.)

Most **tent caterpillars** produce a dense mat of webbing usually concentrated in the crotches of branches. This webbing is used as a resting place for the caterpillars during the day. At night, tent caterpillars disperse throughout the tree to feed in typical caterpillar fashion.

Tent caterpillar injury is also distinctive in time of occurrence; generally an early season injury

most noticeable in May and June. (The forest tent caterpillar, a serious pest in the upper Midwest and Rocky Mountain region, does not produce a tent, although larvae rest on an inconspicuous silken mat during the day.)

The **fall webworm** is the most widespread species of "tent-making" caterpillar. These insects produce a loose tent in mid to late summer. The webbing encloses the foliage on which the

pillars (primarily on rose family plants and cherry).

Similar types of tent making occur with **tiger moth** caterpillars found in parts of the Western United States on conifers. Tiger moth caterpillars are also unusual in that they feed on warm days throughout the winter.

Smaller amounts of webbing are produced by various **leaf-roller** caterpillars. Leafrollers do not form colonies such as

ing leafroller injuries, since leaf chewing injuries may involve skeletonizing or more generalized typical caterpillar feeding. Multiple generations of leafrollers may occur during a year, but outbreaks tend to be very short-lived.

Skeletonizing is also characteristic of the caterpillars known as the true skeletonizers, such as the oak skeletonizer and birch skeletonizer. These insects feed on the leaf underside, somewhat similar to leaf beetles. The presence of the larvae or the distinctive ribbed cocoons can separate infestations of skeletonizers from leaf beetle larvae.

SAWFLIES, LEAFCUTTER BEES (Hymenoptera). In the order Hymenoptera, **sawflies** (Tenthredinidae, Diprionidae, other families) are the most damaging to woody plants. Most injurious are various species which confine their feeding to pines and other conifers, such as the redheaded pine sawfly and European sawfly.

These sawflies consume the

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Leafrollers tightly web together a small number of leaves and feed within the protective cover — a sure sign of leafroller injury.

caterpillars feed.

Fall webworm feeding is confined to certain deciduous trees, such as cottonwoods and chokecherry. However, loose tents may also be made by insects such as **mimosa webworm** (primarily on honeylocust and mimosa in the Midwest) and **uglynest cater-**

pillars and fall webworms, although many individuals may occur together during outbreaks.

Leafrollers tightly web together a small number of leaves and feed within the protective cover. This rolling of leaves with webbing is the best characteristic for diagnos-

MITE.



needle from the tip down, in a similar manner as do various caterpillars. However, sawflies often leave a strip of the needle unconsumed. This later turns brown and curls in a characteristic manner. Rarely do sawflies damage the needle base and fascicle, although they may chew tender bark from shoots in a patchy fashion.

Timing of sawfly activity is also earlier than with caterpillars, with most sawfly feeding occurring in midspring before new growth emerges. On evergreens this results in a distinctive pattern of injury, where old growth may be damaged, but current season growth remains unaffected.

Sawflies which feed during the summer also prefer older needles to those produced during the current season.

Sawfly injury to deciduous trees is more difficult to distinguish from caterpillar injuries. As with caterpillars, feeding occurs from the leaf margin inward. Injury is not limited to tender tissues and even larger veins may be consumed. It may be necessary to



The fall webworm's tent covers the leaves the caterpillars feed on.

actually capture the feeding larvae to determine what is causing the damage. Sawfly larvae can be distinguished from caterpillars by having a greater number (six or more pairs) of prolegs on the abdomen than do caterpillars (two to five pairs).

Slug sawflies, such as the pear slug and rose slug, produce characteristic injuries. As with the leaf beetles, their feeding is selective for tender tissues and they skele-

tonize the leaf. However, the skeletonizing is distinctive by occurring on the upper leaf surface, instead of the underside.

Presumably the unappealing appearance of these insects, similar to bird droppings, protects them from predators which otherwise would readily destroy them in their exposed upper-leaf position.

Leafcutter bees are one of the few groups of chewing insects

that primarily damage plants while in their adult stage. The adult leafcutter bees use pieces of leaf to form the walls of the rearing cells where young bees are raised.

The bee cuts made in the leaf are very characteristic. Although a type of "notching" wound confined to the leaf margin, it's regular in shape. The pattern is semi-circular and much larger than cuts made by other insects that make notches, such as black vine weevils and grasshoppers.

While leafcutter bees cut disks from many different plants (rose, ash, lilac, redbud, witch-hazel, hornbeam, linden, etc.) they tend to favor only a certain host species in a given area. The insect is rarely observed doing the foliage cutting since it's done rapidly.

GRASSHOPPERS. Grasshoppers are non-discriminant feeders of plant foliage and typically damage a wide variety of plants during outbreaks. Feeding occurs along the leaf margin and occurs as a notching wound that is more ir-

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regular than that produced by black vine weevils. The irregular injury plus the wide range of plants affected would distinguish grasshopper feeding from other "notchers," such as black vine weevil and leafcutter bees.

LEAFMINING INSECTS. Several insects develop within leaves, tunneling between the upper and lower leaf surface. These **leaf-mining** insects occur among several groups of insects. For example, common leafminers of birch and alder are sawflies (Order: Hymenoptera). Lilac and *Populus* spp. are most often attacked by leafminers that are small caterpillars (Order: Lepidoptera). Some beetles and flies are also leafminers.

Leafmining injuries are often diagnosed by their pattern. Many leafminers excavate irregular mines that are bound only by the larger leaf veins. These are called "blotch leaf mines." Other leafminers produce meandering, often shallow mines, known as "serpentine leaf mines." On black locust, a common leaf-

miner makes a series of finger-like mines radiating off of a central area, described as "digitate leaf mines."

Leaf mining injuries are most easily confused with leaf spotting

and budworm. These "needleminers" chew through the center of the needle, causing it to dieback from the point of injury. Hollowing of the needle and the presence of small dark fecal pellets can dis-

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Leafmining injuries are often diagnosed by their pattern. Many excavate irregular mines bound only by larger leaf veins — known as "blotch leaf mines."

fungal diseases. However, leaf mines of insects are distinguished by leaving the upper and lower leaf surfaces intact and easily separated. Insect excrement is also present in the mined leaves, appearing as small dark pellets. The presence of the insect, or the insect exit hole, is also characteristic.

Some small caterpillars also mine needles, such as the ponderosa pine needleminer and young stages of the western spruce

tinguish this injury from needle dieback caused by fungi, desiccation or salt injury.

GALL-MAKING INSECTS. Some insects and mites develop by causing the plants to produce distinctive growths, or **galls**. The developing insect lives and feeds within the gall, and stimulates the gall growth.

Almost all galls on foliage are produced by insects and mites. They can take many forms. Simple

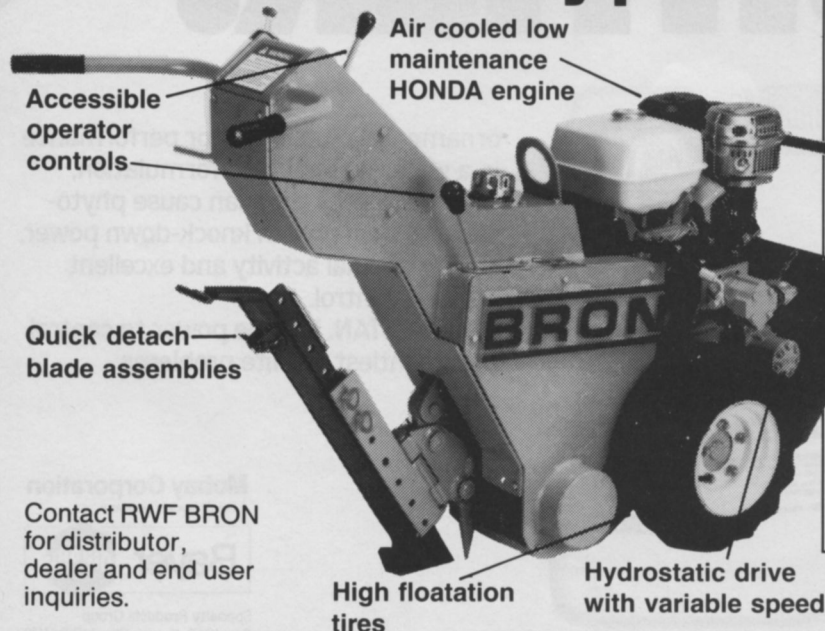
swellings (indeterminate galls) are one form. At the other extreme are distinctive (determinate galls) growths with spines, color changes and gross enlargement.

Several families of insects and mites produce galls. The largest in number of species are the gall wasps (Cynipidae) which produce bizarre growths on oak and rose family plants. Gall midges (Cecidomyiidae), the gall making aphids, the psyllids associated with hackberry, and sawflies associated with willow generally produce galls that involve a simple swelling of the new growth. Eriophyid mites (Eriophyidae) make a variety of galls including "finger galls" that project from the leaf, dense patches of plant hairs (erineum), or raised swellings. — *Whitney Cranshaw and Dave Leatherman* ■

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Sound Cultural Methods Contribute to Healthy Turf

CONTINUED SCRUTINY by government and concerned citizen groups over the use of pesticides in residential situations, compels lawn maintenance operators to justify each pesticide application.

Given current practices and customer expectations, it's nearly impossible to provide a high quality turf without some chemical applications. However, by focusing on cultural practices that promote healthy turf, pesticide applications can be reduced or in

some situations eliminated.

Providing a healthy, aesthetically pleasing turf is much like keeping oneself healthy. A person can reduce the risk of certain diseases by taking precautionary measures such as proper diet and exercise.

Preventive turf management works on the same principle. By practicing good cultural practices you are taking preventive measures to provide a healthy turf. Described below are some cultural practices that can help

minimize the use of pesticides. In some instances, what is described may seem obvious, but the obvious is often overlooked.

GRASS SELECTION. In cases where a new lawn is being established or an old lawn is being renovated, select a turfgrass species with regard to the expected management level. For example, under low maintenance situations, the proper selection can reduce weed infestations.

Where cultural practices have

been minimal (no irrigation, fertilization or herbicide applications), the area without dandelions is tall fescue turfgrass, while the plot area that has a significant number of dandelions is Kentucky bluegrass.

Selection of a grass species begins with knowing what species will perform best under the given conditions.

In addition, growth characteristics can influence management practices. Turfgrasses which have bunch-type growth habits (spread only by tillering) such as tall fescue, perennial ryegrass and most of the fine fescues, often require overseeding to keep a dense turf.

Turfgrasses with bunch-type growth habits lack the ability to spread into areas where turf loss has occurred. An open or thin area will result in increased weed infestation.

The cultivar chosen influences the amount of weed pressure a turf manager can expect. With Kentucky bluegrass at shorter mowing heights, research has shown that common Kentucky bluegrass cultivars have greater weed pressure than the improved Kentucky bluegrass cultivars.

The improved Kentucky bluegrasses are more diminutive with a leaf orientation that is more horizontal than common, resulting in a denser canopy. A dense canopy restricts light to developing weeds resulting in a retardation in their initial development.

MOWING. Mowing is a major factor in setting the cultural intensity level. As a general rule, the shorter the mowing height, the more inputs (water, fertilizer and pesticides) are needed to provide the desired quality.

An example of the effects of the mowing height on weed population was documented in the

COMMON DISEASES OF LAWNS AND POSSIBLE CULTURAL PRACTICES TO REDUCE THE SEVERITY

Disease	Symptoms	Cultural Practices to Minimize Severity
Dollar Spot	Bleached out lesions with brown bands on each end.	Not a frequent disease but will occur on lawns that are maintained at a high cultural intensity. Adequate nitrogen levels will reduce severity.
Red Thread	Red stoma protruding from leaf blade.	Common disease on low maintenance or slow growing Kentucky bluegrass lawns. Applications of nitrogen will reduce the severity of the disease. On perennial ryegrass and fine fescue this disease can be a severe problem and applications of nitrogen may not be effective.
Rust	Reddish brown pustules on the leaf.	Rust is common on slow growing turfs, especially ryegrass in the fall. Promoting growth through nitrogen applications and water will help reduce disease severity.
Powdery Mildew	White leaf blades.	Major disease of Kentucky bluegrass in the shade. In shaded situations provide as much light as possible through brush removal or tree pruning if possible.
Melting-out	Purplish lesion with a white center.	With this disease, practice moderate nitrogen applications in the spring. Some research suggests that this disease can be reduced through frequent irrigation.
Brown Patch	Leaf symptoms appear purplish and gray.	A major disease problem during warm weather on tall fescue and perennial ryegrass. Avoid excessive nitrogen applications during warm weather and do not over irrigate.



Melting out is defined by a purplish lesion with a white center (left). Weeds in tall fescue (above, left) and Kentucky bluegrass.

1930s by Welton and Carroll who reported the occurrence of increased weed infestation when heights were decreased. They also found a decrease in the number of weeds occurring over time at higher mowing heights.

We have observed a relationship between mowing height and crabgrass germination. Depending on environmental conditions, crabgrass can germinate and develop quicker on bare soils than in a dense stand of Kentucky bluegrass.

The difference can be measured in weeks. However, in some instances where the turf is thin and high light intensities and temperatures are present, crabgrass germination on turf areas is often comparable to bare soils.

Mowing height will influence the rate of development of crabgrass. Unpublished tests by Schneider, Hurto and Danneberger showed that crabgrass in the bare ground tillered nearly a month sooner than the crabgrass at a 2- to 3-inch mowing height.

Between the two mowing heights, the crabgrass in the 2-inch plot was about one week ahead in maturity. Toward the end of the experiment, the weed population was especially dense in the bare soil, probably resulting in a delayed maturity allowing the crabgrass plants in the 2- and 3-inch mowed plots to catch up.

In addition to reducing weed pressure through a dense healthy turf, delayed crabgrass maturation can influence your herbicide program. By delaying germination, the window for pre-

emergent herbicide applications is extended.

Likewise, some of the new pre-emergent herbicides that have postemergent activity can extend the window for treatment because of retardation in crabgrass maturation.

Improper mowing such as scalping can result in an increased weed population. We have found that if turf is severely scalped during the early stages of crabgrass development (3- to 4-leaf stage), a flush of crabgrass germination occurs. This results from the removal of the turf canopy which weakens the turf and allows the crabgrass to more effectively compete.

Mowing properly, which means removing no more than 1/3 of the tissue, will require frequent mowing during periods of rapid growth to prevent scalping. This may also include initiating a mowing program sooner on certain turfs, such as tall fescue compared to Kentucky bluegrass, which starts growing earlier in the year.

The maintenance of a dense turf can result in the delay of crabgrass germination, while reduced lighting through the turf's canopy can result in a delay in the development of the crabgrass plant.

DISEASE CONTROL. Disease management begins with the selection of turfgrass cultivars that are resistant to the major diseases indigenous to the area.

Helminthosporium melting-out (pathogen: *Drechslera poae*) which is a major disease of Kentucky bluegrass, is effectively

controlled through the use of resistant cultivars.

Many of the improved Kentucky bluegrasses have melting-out resistance. However, the level of resistance may vary depending on the geographical area tested. For example, some Kentucky bluegrass cultivars tested under Northern conditions may show good resistance, but lack resistance in transition zone areas.

You should check with your local extension agent to find the best cultivars for your area.

As a rule, blend at least two or more cultivars together. This helps reduce the risk of turf loss caused by an unsuspecting disease wiping out your stand.

Merion Kentucky bluegrass, for example, was the first bluegrass cultivar to show melting-out resistance, ushering in the improved bluegrass era. It's now rarely used, however, because of its susceptibility to stripe smut.

By blending, you are attempting to reduce or spread your disease risks over a greater genetic range. Always remember, your blend is only as good as your weakest link. So choose your cultivars carefully.

Shaded conditions require careful turfgrass considerations. If Kentucky bluegrass will be used in shade, make sure it has good shade tolerance meaning it should have powdery mildew resistance. Powdery mildew is a major reason for Kentucky bluegrass failure in shade.

Knowing the type of shade tree present can also be important in establishing turfgrasses in the

shade. Kentucky bluegrasses, for example, won't perform well under mature silver maples. Research suggests that there might be an allopathic affect on Kentucky bluegrass from silver maples. In this situation, fine fescue would be the logical choice.

In Table 1, some of the major lawn diseases and corresponding cultural programs are described which may minimize damage.

Turfgrass situations are complex and often require multiple or integrated practices to combat pests. Each cultural practice used to address a specific problem often influences other factors in turf health. Look at using cultural practices not just to address a specific problem, but as an overall effort for turfgrass health.

Biological control agents are showing some promise in reducing turfgrass disease severity (E.B. Nelson. 1990. The advent of Biological Controls for Turfgrass Disease Management. Cornell Univ. Turfgrass Times 1:1).

Composted materials appear to reduce the level of some lawn diseases, but further work is being conducted to investigate factors influencing biological control.

INSECT CONTROL. Promoting a healthy turf will allow for quicker recovery from insect damage, and at the same time, sustain greater insect threshold levels. Reducing insect damage through cultural programs is often dependent on the insect.

Irrigation is a means of decreasing the severity of chinchbug (continued on page 69)

PEOPLE



Gustafson



Boilek

NORMAN GUSTAFSON HAS JOINED HMC/The Green Machine as director of sales for the company.

He is responsible for domestic sales and all the company's product groups. Four regional managers report to him.

At O.M. Scott & Sons, a new national accounts manager and three technical representatives have been hired.

As accounts manager, **Dale Lybarger** is involved with creating and strengthening the company's business relationship with large national lawn service com-

panies. His office is in Scott's Marysville, Ohio, headquarters.

The three tech reps are **Dave Kuhlman**, **Dave Winter** and **Chris Skibba**.

Kuhlman's territory includes Colorado, Iowa, Kansas, Minnesota, Missouri, Montana, Nebraska, North Dakota, South Dakota, Utah, Wisconsin and Wyoming.

Winter is working in Delaware, Maryland, New Jersey, Pennsylvania, Virginia, Washington, D.C., and parts of Ohio.

Skibba's clients include those in Alabama, Arizona, Arkansas, California, Florida, Georgia, Idaho, Indiana, Louisiana, Mississippi, Nevada, New Mexico, North Carolina, Oklahoma, Oregon, South Carolina, Tennessee, Texas, Washington and part of Indiana.

Wally Boilek is now national sales manager for Industrial Services International Inc.'s Terra-Sorb line of superabsorbents.

He has four years' experience selling

the line in the Midwest, where he successfully developed the region into one of the highest volume territories in the company.

Several personnel changes have taken place at Rain Bird:

Ron Wolfarth is now industrial marketing manager for the company's turf division.

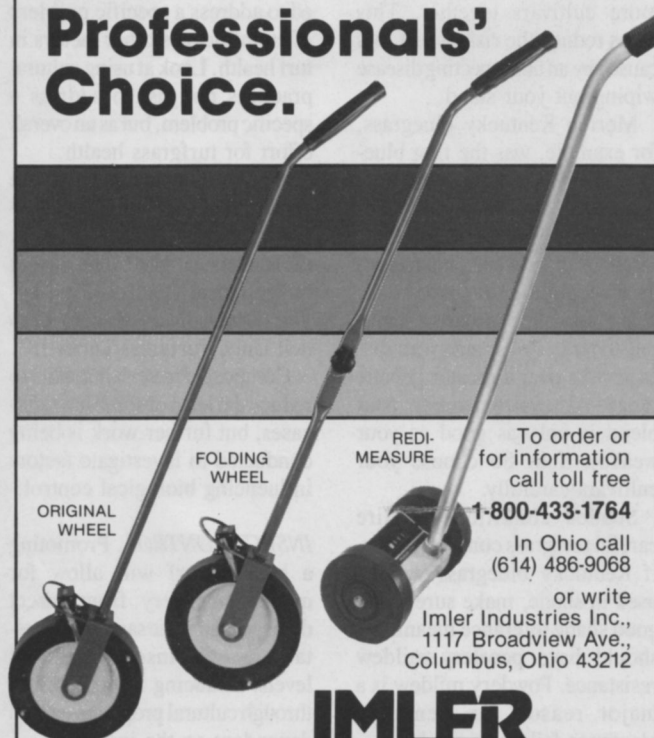
With the company since 1985, he is managing the marketing and product development of industrial irrigation products. He is a licensed landscape architect and irrigation consultant.

Randy Malkin is the turf division's area specifications manager for California.

Malkin is sharing Rain Bird product knowledge with specifiers, contractors, landscape architects, irrigation consultants, engineers, developers and city and state officials. He has 20 years of industry experience starting out in his family's landscaping business. ■

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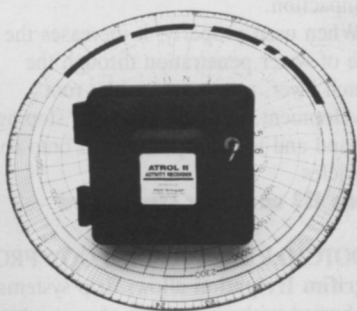
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It records all activity on a paper chart to help managers and supervisors check on drivers, evaluate routes, pinpoint downtime, improve productivity and control costs.

Circle 126 on reader service card

AQUA-SENSOR INTRODUCES A computerized irrigation lawn sprinkler control that makes every drop count.

The Aqua-Sensor moisture analyzing probe measures and regulates moisture levels plus or minus 2 percent at root

level. It saves up to 60 percent in water usage. The control is designed for conventional above- or belowground emitters, drip or porous irrigation systems, automatic fertilizer controllers and remote controls.

Circle 127 on reader service card

THREE COMMERCIAL LAWN mowers have been introduced by **Bunton's Goodall division**. The 36-, 48- and 52-inch models provide features needed for heavy-duty commercial mowing.

Features include a choice of high performance 12.5-h.p. OHV Onan or 14-h.p. Briggs Vanguard engines for excellent power under heavy mowing conditions, a



4.2-gallon high impact plastic gas tank and low pressure pneumatic tires.

The drive system is a 4-speed Foote gear box with large output shaft pulleys to eliminate belt slippage. Ground speed is independent of engine speed.

Circle 128 on reader service card

SOME OF CIBA-GEIGY'S MOST popular products are now available in quart containers. Previously, Triumph® insecticide was only available in 1- and 2



1/2-gallon containers while Banner® fungicide and Pennant® herbicide were sold in 1-gallon containers.

The new size is an advantage to first-time and small-quantity users. It also includes an accurate measuring device the larger sizes don't have.

Circle 129 on reader service card

THE TUFF CAT HIGH PRESSURE cleaning system from **Cat Pumps Corp.** is a complete system providing cleaning versatility.

Two models are available including the 2X1500, rated at 2 gpm up to 1,500 psi, and the 3X1000, rated at 3 gpm up to 1,000 psi designed for 20 amp service.

The system is powered by a custom designed industrial electric motor featuring a thermal overload protection with reset button and low amp draw performance.

The system offers a 35-foot electrical cord with ground fault current interrupter protection for maximum safety during operation. The cleaning versatility is enhanced with standard features such as the VariNozzle, permitting pressure adjustment from high to low as well as a 0-

PRODUCT PROFILE

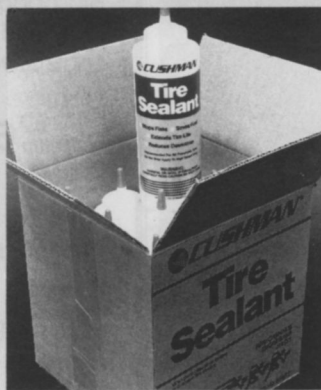
CUSHMAN NOW OFFERS A TIRE SEAL-ant compound that helps eliminate flat tires on utility vehicles, mowers and other lawn and landscape maintenance equipment.

The product seals tread punctures up to 1/4-inch thick, as well as bead leaks, rim leaks and tube-related leaks.

It's formulated with a latex-glycol base and is water soluble so it can be washed out with water when a tire is removed from the rim. The sealant remains fluid and effective down to 30 degrees below zero. As long as the container is kept closed, shelf life is practically indefinite.

The sealant is easily injected into tires through the valve stem. As the vehicle is driven, the fluid action of the solution coats the interior surface of the tires. When a leak or puncture occurs, escaping air draws the solution to the hole where the particulates are forced into the leak to seal it.

Circle 125 on reader service card



to 60-degree spray angle.
Circle 130 on reader service card

FINN HAS INTRODUCED THE B260 straw and hay mulch spreader. The new design places all controls within reach of the operator's seat.

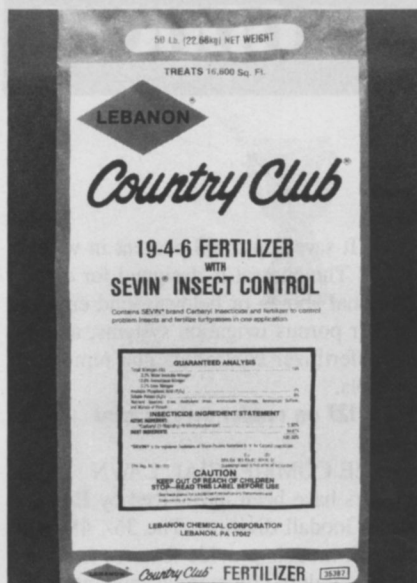
Other advancements include an improv-



ed tube design, an all-hydraulic speed control on the power feed system and a lower profile and center of gravity for added stability.

The mulch spreader is capable of handling a variety of materials at rates reaching 20 tons per hour, making it ideal for highway, reclamation and large commercial use.

Circle 131 on reader service card



LEBANON CHEMICAL HAS INTRODUCED Country Club 19-4-6 with Sevin for use on residential lawns, parks and other professionally maintained turf.

It provides premium feeding together with safe, dependable control of common white grubs and a broad range of surface feeding insects.

Proper use will prevent damaged turf

and ensure fast green-up and sustained feeding.

This is a granular product with 26 percent organic homogeneous fertilizer base and 5.3 percent active Sevin insecticide. It's available in 50-pound bags providing up to 16,600 square feet of treatment. A 3-pound per 1,000-square-foot application is recommended for 7.77 pounds active Sevin per acre.

Circle 132 on reader service card

TURFEX IS THE LATEST SOIL WETTING agent being offered by PBI-Gordon. It was formulated especially for the turf-grass industry and helps water move through turf affected by dry spots or soil compaction.

When used properly, it increases the rate of water penetration through the thatch layer, promotes healthy root development, reduces runoff on sloping ground and is readily absorbed onto soil particles.

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Circle 52 on reader service card

bicide Treflan, which is continually diffused out in minute quantities to protect the drip emitter from root intrusion using the Rootguard patented slow release process.

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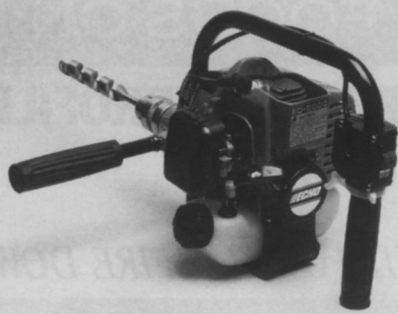
Circle 134 on reader service card

POWER SWEEP IS A SELF-PROPELLED lawn sweeper from Parker Sweeper Co. for the removal of clippings, leaves and other lawn debris.

Features include a 6.5-cubic foot reinforced vinyl basket supported by swivel casters for heavy loads, cast iron wheels and gears with deep tread tires, a 3-h.p. Briggs & Stratton I/C engine with recoil start and eight polypropylene brushes on a ball bearing mounted reel shaft.

The large capacity basket provides for longer use between dumpings. It cuts a 30-inch wide swath to sweep debris away quickly and efficiently.

Circle 135 on reader service card



THE GAS-POWERED ECHO ENGINE drill is a compact, lightweight powerful drill that doesn't require cumbersome battery packs or electrical cords.

Powered by a rugged 21.2 cc Echo two-cycle engine and featuring Pro-Fire electronic ignition for easy starts, it has heavy duty gear reduction ratio to convert engine power into tough drilling torque. The chuck is capable of handling a 1/2-inch drill shank.

Weighing just 8.8 pounds, the drill can easily be used by right- or left-handed operators. The reversible handle also allows drilling close to walls or other obstructions.

For added safety, the throttle lockout keeps the engine on idle until the operator has firmly grasped the handle. A

spark-arresting muffler reduces exhaust noise.

Circle 136 on reader service card

SPOT WEEDER FROM LESCO IS A mixture of 2,4-D and Dicamba for broad spectrum weed control. Packaged in a 1.5 pound aerosol spray can, it saves the time of tank-mixing herbicides.

It can easily be applied directly from the can at waist height. For added convenience, a foam marker shows where the product has been sprayed.

Containing more than 2 percent active ingredient, Spot Weeder is designed for professional use. Dicamba ensures quick, thorough control and the aerosol container offers the convenience of a "shoot and move" application.

Circle 137 on reader service card

WHAT WAS FORMERLY TWO PRODUCTS has been combined by **Ringer** to create Flower/Foliage 8-6-5. The granular product is designed for use on trees, shrubs and flower beds.

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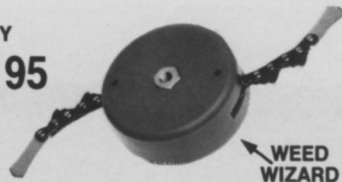
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WATCH OUT FOR THE FIRE DOWN BELOW

THE BIBLE SAID, "BEHOLD HOW great a matter a little fire kindleth." If the writer, James, had foreseen "how great a matter" today's fire ants have kindled, he'd be considered quite a prophet of a different sort.

Several species of fire ants live in the United States, but the red imported fire ant is the primary problem. The American Academy of Allergy and Immunology estimates that 21,000 people are stung each year by the pests. Fire ants actually caused 32 deaths in 1988.

Each year, because of fire ants, about \$2.4 million is spent on medical costs, and no one can estimate the dollars lost in damaged crops and equipment as well as control measures.

"Fire ants are a major problem across the South — from North Carolina to Texas," said Beverly Sparks, extension entomologist at the University of Georgia. "There have even been reports of isolated infestations in fringe areas like Oklahoma, Tennessee and Maryland."

A LITTLE HISTORY. Experts suspect that fire ants entered this country through the port in Mobile, Ala., around 1930 on board a banana boat from South America. From there, fire ants spread in two ways. First, they spread slowly, through natural mating flights. This accounts for a few miles of spread per year.

They can also spread rapidly by infesting nursery stock or turfgrass sod that is transported across state lines. If they find their new habitat suitable, fire ants adapt



and make themselves at home.

Today, inexplicable multiqueen colonies have developed ensuring the continued spread of these pests; probably at a greater rate than ever before.

WHAT'S THE PROBLEM? With the rapid spread of fire ants, and with their preference for high quality turf surfaces, confrontations with man are inevitable. Sports fields, home lawns and golf courses — make ideal habitats for the insects.

In urban areas, fire ants are a threat for two primary reasons: their aggressiveness and propensity for attacking in large numbers.

"These ants don't want anything or anybody on their 'turf,' and they'll do whatever it takes to protect it," said Homer Collins, entomologist for the U.S. Department of Agriculture, Gulfport, Miss. "They attack enemies *en masse*, stinging them into submission."

In addition, some people are highly al-

lergic to fire ant stings. They can die from a single sting.

Finally, Collins said fire ants are attracted to electrical current. This propensity leads them to infest buildings and even stoplights.

CONTROL TECHNIQUES.

"When fire ants first became major pests, we thought we might be able to eradicate the entire population," Collins said. "Now, we're willing to

settle for control."

For home lawns, Sparks recommended treating individual mounds as they appear. The key is to apply enough insecticide to reach the queen and her eggs. With liquid products, one to three gallons of diluted solution should be applied.

One product that's growing in importance for fire ant control is Triumph[®], manufactured by Ciba-Geigy. "Fire ants have been on Triumph 24(c) labels since 1988," said Doug Houseworth, manager, technical support for the company's turf and ornamental products group. "Our current results are very encouraging."

Fire ant baits are also used. They are particularly effective on large areas, but it can take weeks, even months for results to be complete.

Baits, such as Amdro[®], Logic[®] or Affirm[®], are first broadcast and then taken by worker ants into the mound. When baits are used, Sparks suggests applying a contact insecticide like Triumph about two weeks later to decrease the number of worker ants. She said this should control 90 percent or more of the pests.

THE FUTURE OF FIRE ANTS.

According to Sparks, fire ants "provide job security for entomologists" because they aren't likely to decrease in importance in the foreseeable future.

Current research focuses on the biology of the pests, single vs. multiqueen colonies, and the insects' South American habitat. Biological controls are a long way off, but the search continues for naturally occurring fire ant killers. ■

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A queen and some worker ants (top). A Texas sod farm with fire ant mounds.

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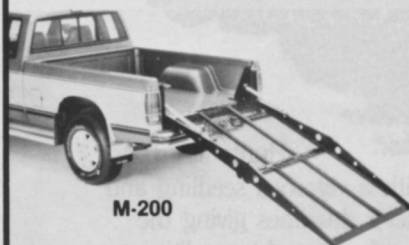
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CALENDAR

JUNE 20

Fifth Annual Midwest Sports Turf Institute, College of DuPage, Glen Ellyn, Ill. Contact: The Sports Turf Manager's Association, 400 N. Mountain Ave., Suite 301, Upland, Calif. 91786; 714/981-9199.

JUNE 22-24

A workshop for urban forest personnel sponsored by the American Society of Consulting Arborists, Sheraton Imperial Hotel and Towers, Research Triangle, N.C. Contact: ASCA, 700 Canterbury Rd., Clearwater, Fla. 34624; 813/446-3356.

JUNE 26

The Lawn Institute's Annual Meeting, Hyatt Regency Grand Cypress, Orlando, Fla. Contact: Eliot Roberts, executive director, P.O. Box 108, Pleasant Hill, Tenn. 38578-0108; 615/277-3722.

JULY 18

Maryland Turfgrass Field Day and Equipment Exhibit, Cherry Hill Turfgrass Research Facility, Silver Spring, Md. Contact: Peter Dernoeden, Agronomy Department, University of Maryland, College Park, Md. 20742; 301/454-3717.

JULY 18

Annual Nursery Field Day of the Hampton Roads Agricultural Experiment Station, Virginia Beach, Va., from 12:30 to 7 p.m. Contact: Hampton Roads Station, 1444 Diamond Springs Rd., Virginia Beach, Va. 23455; 804/363-3900.

JULY 25-27

The American Sod Producers Association Summer Convention and Field Days, The Westin Hotel, Ottawa, Canada. Contact: ASPA, 1855-A Hicks Rd., Rolling Meadows, Ill. 60008; 708/705-9898.

JULY 29-31

International, Lawn, Garden and Power Equipment Expo, Kentucky Fair and Exposition Center, Louisville, Ky. Contact: Andry Montgomery and Assoc., 6100 Dutchmans Lane, 6th Floor, Louisville, Ky. 40205; 800/558-8767 or 502/473-1992 in Kentucky or outside the U.S.

AUG. 1

University of Georgia, Athens Turfgrass Field Day, Griffin Experiment Station,

Griffin, Ga. Contact: Georgia Turfgrass Association, 4565-A S. Berkley Lake Rd., Norcross, Ga. 30071; 404/447-4985.

AUG. 12-15

CONSERV 90, National Conference and Exposition Offering Water Supply Solutions, Phoenix Civic Plaza, Phoenix, Ariz. Contact: National Water Well Association, 6375 Riverside Dr., Dublin, Ohio 43017; 614/761-1711.

AUG. 21

Facilities Management Workshop, College of the Holy Cross, Worcester, Mass., jointly sponsored by the Professional Grounds Management Society and the Sports Turf Manager's Association. Contact: PGMS, 10402 Ridgland Rd., Suite 4, Cockeysville, Md. 21030; 301/667-1833.

SEPT. 2-4

International Professional Lawn, Garden and Outdoor Power Equipment Exhibition, Kempton Park, England. Contact: The GMA Show, Interbuild Exhibitions Ltd., 11 Manchester Square, London W1M 5AB; 01/486-1961.

SEPT. 7-9

Managing Urban and Suburban Trees Through Ordinances workshop sponsored by the American Society of Consulting Arborists, Radisson Airport Hotel, Columbus, Ohio. Contact: ASCA, 700 Canterbury Rd., Clearwater, Fla. 34624; 813/446-3356.

SEPT. 14-16

The Second Annual Bonsai & Orchid Expo, Expo Center, Orlando, Fla. Contact: BOE, 26 Pine St., Dover, Del. 19901; 302/736-6781.

SEPT. 18-19

Virginia Tech Turfgrass Research Field Days, Virginia Tech Turfgrass Research Center, Blacksburg, Va. Contact: J.R. Hall III, Department of Crop and Soil Environmental Sciences, 424 Smyth Hall, Blacksburg, Va. 24061-0403; 703/231-9736.

SEPT. 27-30

The Central Horticultural Association of Bonn's First International Trade Fair for Horticulture, Frankfurt Fairgrounds. Contact: Messe Frankfurt GmbH, Dept. 1202, P.O. Box 970126, D-6000 Frankfurt 1; 069/7575-6297.

CLASSIFIEDS

RATES

All classified advertising is 75 cents per word. For box numbers, add \$1 plus six words. All classified ads must be received by the publisher before the 10th of the month preceding publication and be accompanied by cash or money order covering full payment. Submit ads to: *Lawn and Landscape Maintenance* magazine, 4012 Bridge Avenue, Cleveland, Ohio 44113. Fax: 216/961-0364.

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Lawn care companies of all sizes in U.S. and Canada being sought by national corporation. Complete buy out or stay and grow with us. If interested please call me directly: Don Karnes, Senior Vice President, TruGreen Corp., 404/442-8700. Strict confidentiality maintained.

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Back to Basics

(continued from page 59)

damage on Northern turfs because under moist conditions a fungus (*Beauveria* spp.) is able to attack the chinchbug. As a result, irrigation of the lawn is an effective means of managing the chinchbug.

Thatch management should be practiced since a thatch layer can attract certain insects such as chinchbugs and spittlebugs. In addition, a reduction in thatch will help increase the mobility of insecticides resulting in more effective control.

Some cultivars of turfgrasses have been

reported to have some resistance to insects such as the bluegrass billbug, chinchbug and sod webworm. Cultivars of fescue and ryegrass that have the endophytic fungus appear to have greater insect resistance.

Current biological control agents for insects are host specific. For example, the fungus *Bacillus popilliae* which causes the milky spore disease is effective (once established) for controlling Japanese beetle grubs, but will not attack other types of grubs (e.g., masked chafer). Research using certain types of nematodes as biological control agents looks promising. In

the future, the potential for biologically controlling common insect pests is bright because of an increase in research interest.

CONCLUSION. Elimination of all pest problems strictly through cultural programs is not yet possible. By practicing sound agronomic principles, however, the level of pest problems can be reduced so that pesticide applications can be applied only as a last option. — Karl Danneberger, Ph.D.

The author is a professor in the department of agronomy, The Ohio State University, Columbus, Ohio.

mean maybe going into some different markets so I can create opportunities for them.

We've never had enough people to go into other markets without hurting the Fort Worth office, but now we've got about six good management people that we might be able to look at opening a facility in Dallas and eventually in the other Texas markets.

Q What was most difficult about managing the rapid growth you had between 1982 and 1986?

A The people thing was the big problem, anybody will tell you that. That's something that's really been tough in our industry because it's a low paying industry, it's extremely hard work and you're not just going to draw that many people that want to do it for any length of time.

We've been lucky in that some of the guys we've got in the field have been able to grow with the company and they're making a pretty good wage because they're so valuable to the company. But we're limited to what we can pay.

The number one frustration in the industry is not being able to compensate the people the way I think they really should be compensated because the market dictates the compensation. I don't dictate the compensation, the market and the industry dictate the compensation. I've told employees from entry level all the way up to management, that I'm going to do the best that I can do.

About four years ago, I started tapping into the Hispanic labor force. Now they represent about 80 percent of our field people. We're currently investigating possibilities of creating English classes for our guys as well as Spanish classes for some of the managers and me.

Q Haven't your incentive programs helped?

A They helped a lot, especially with the economy. Three years ago we bypassed the standard raises for incentive-based compensation for the field people and it worked out really well.

We've done it for three years and basically everybody's base pay has stayed the same, but their compensation has increased as much as 20 percent in many cases. What I'm telling our guys is if they want to make more money, they're going to have to produce and they understand that.

We give the bonus monthly so the feedback is fairly immediate. I don't agree with bonuses that are paid at the end of the year because I think the feedback needs to be immediate.

Q What kind of production do they have to do to receive a bonus?

A In residential we have production criteria where they have to bill out X amount of dollars per hour, and they have to do their work without getting complaints. I think we give them one complaint a month. Complaints are always checked out.

Commercially it's based on production — hitting their budgeted hours for each job. Only the foremen participate in this because I haven't figured out a way to get the laborers involved. The foremen are required to complete their job at a job site in a certain number of hours, must stay under budget, do a quality job without complaints and show up every day. They get one absence every two months. That has eliminated a lot of absenteeism because they know that it's going to affect them financially if they don't show up.

Q Do you have a basic formula for business growth?

A I wish I did. I admire people who are that organized and can make a decision that way. As we add accounts we add people, but we don't do anything until we have the account in the door and the contract signed.

We don't add any crews or equipment until we know we have to. We'll add the job on to other routes and maybe add some people, and then we'll determine if we can break off another route. Then we'll add a truck, trailer, equipment, route manager and so on.

We've gotten a lot better at preparing for new accounts. When we were younger, we didn't have the route manager in training, but we're trying to make a real commitment to training this year. In the past year it's gotten better and better. We've been able to spin off routes more easily because we have people ready to take them over.

Q What advice can you offer inexperienced maintenance operators?

A The best advice I can give is to be conservative. Don't get carried away with growth and debt. I've seen and heard of a lot of people making mistakes like that.

I'm a firm believer in being conservative, keeping your management teams lean and mean. Do as much as you can yourself until you get enough work to hire other people. Others might not take that same approach saying you're never going to be able to grow quickly unless you borrow money and hire people.

I think anybody in this industry ought to be profitable from day one, whether it's a company or branch office. That's why we haven't opened a branch office.

Buy used trucks, do most of the work yourself and down the road it'll pay dividends. — *Cindy Code*

The author is Editor of Lawn and Landscape Maintenance magazine.

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