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ALSO IN THIS ISSUE:

A Proactive Course to Training and Certification Herbicide Market Report Mowing Equipment Trends Trouble-Shooting for Irrigation Systems

New amine-compatible iron greens up turf in less than 48 hours.

Prosperity resolution for 1989: Use FëRROMEC® AC (amine-compatible) in your lawn-care

6

program. Green up your world and green up your wallet ... get a Roll-X™ Measuring Wheel in the bargain.

Everett Mealman, President PBI/Gordon Corporation

Ferromec liquid sprayable iron can produce a deep, vibrant, emerald-green color in ornamental turfgrass very, very rapidly . . . and very, very economically. In most instances, it can achieve this miracle in less than 48 hours, at a cost of about \$1.70 for a 6,000 sq. ft. lawn.

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Nitrogen will eventually produce a green color, but excess nitrogen plus turfgrass equals hay. Obviously, Ferromec is a better way!



Ferromec AC can be tank mixed with any TRIMEC® Herbicide formulation, so it gets a free ride. And guess what else. The Ferromec actually speeds up the activity of the Trimec!

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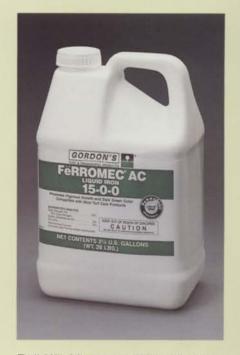
No wonder literally thousands of lawn-care operators, landscape managers and golf-course superintendents are now using Ferromec in their turf-care programs.

The importance of color

Perhaps George Toma best summarized the case for Ferromec when he said, "We spend untold time and effort preparing the playing field of the Super Bowl so the turf will hold up under the battering it takes... But do you know what it is we hear about? We hear about that beautiful green color we get from Ferromec!"

Color is so important! You give a homeowner a brilliant green lawn, and give it to him fast, and you've got a happy customer who will recommend you to his friends.

Surely you'll want to try some Ferromec in 1989. To help you make that decision, we're offering you a chance to order a \$60 value



Roll-X™ Measuring Wheel for only \$20 when you buy five gallons of Ferromec AC. (You'll need an extra wheel to measure all the new lawns you'll be invited to bid on when your customers tell their friends about your work.)

Meantime, you might like to review some of the facts about iron, which will help you understand how Ferromec works, and why no other company can offer you a product like our patented Ferromec sprayable iron.

Facts about iron that turf professionals need to remember.

First: Iron is essential for the synthesis of chlorophyl. No iron . . . no green.

Second: In most instances where ornamental turf is being grown there is not enough naturally occurring iron in a useable ferrous state to produce a vibrant green color. Accordingly, a chelated iron can be added to the soil.



St. Augustine grass lawn in Texas showing the darker color (right) produced by Ferromec Liquid Iron applied in early September at 8 oz./1,000 sq. ft. The green-up became visible within 2 hours and the darker color persisted until dormancy, a couple of months later, according to Wallace Menn of Bryan, Texas, a turfgrass specialist who conducted the test.



Half of this green at Hodge Park Golf Course in Kansas City was sprayed with Ferromec and, within 24 hours, the color change was dramatic. Under normal growing conditions, visual response usually occurs between 8 and 48 hours after application. Ferromec is also effective on trees, shrubs and herbaceous plantings.

Third: Chelated iron is primarily absorbed through the roots rather than by foliar activity. To get enough chelated iron into the grass through the roots to produce the desired color rapidly, it is necessary to speed up the growth by using nitrogen. This will eventually cause the grass to green up. But it will also bring on excessive growth that will cause unwanted mowing and exposure to disease.

FERROMEC is different

Ferromec, on the other hand, is unique; and it works in a totally different way.

Ferromec is a patented process

that involves bonding a ferrous iron molecule to a urea molecule. When sprayed on turf, Ferromec is ingested almost immediately via foliar intake at the point where chlorophyl is formed. Once inside the plant, the iron-urea molecular bond breaks apart because the plant has such a ravenous appetite for nitrogen.

The result is that the iron molecule in Ferromec goes to work almost immediately to create chlorophyl and, depending on the condition of the turf and the weather, green-up occurs any time within 8 to 48 hours without causing excessive growth.



1988 Super Bowl playing field at the Jack Murphy Stadium in San Diego received three applications of FERROMEC Liquid Iron along with Gordon's BOV-A-MURA® Organic Activator. Internationally known NFL turf consultant George Toma (right), pictured with son Chip, says the playing surface was

sparsely covered with dormant Bermuda, including many areas of bare ground, and was seeded with turf-type ryegrass only 25 days prior to the game. "We couldn't have made it," says Toma, "without the root-building strength of BOV-A-MURA and the color enhancement of FERROMEC

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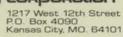
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FERROMEC is available from Green Cross in Canada, Toyo Green in Japan and Farmura Ltd. in the United Kingdom. For other sources abroad, inquire of Gordon International by FAX: 816-474-0462.

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Dan Pellegrino of J&D Landscape Contractors shows how his company became this year's Professional Award winner.



The gathering tide of state and federal regulations has prompted industry operators to seek formal training before it's forced on them.



Cover photo: Fran Hines, Sudbury, Mass.



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The odds aren't good, but the contingent backing a potentially precedent setting notification regulations appeal won't back down despite an early defeat.

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Mid-size walk behind mowers will continue to be strong sellers over the next several years, while the zero turning radius is gaining in popularity.

42 1989 Herbicide Outlook: Industry Growth Spurs Herbicide Development

The green industry's growth over the past 10 years has resulted in new herbicides for turf.

50 Improving Preemergence Herbicide Performance in Turf

If application timing does not coincide with the normal germination period of annual grassy weeds, weed control results may be erratic or poor.

54 Core Cultivation Effects Following Preemergent Applications

Turf specialists stated for years that post-applicator core cultivation could disrupt the preemergent herbicide "blanket" at the turf/soil interface, but that has changed.



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EDITOR'S FOCUS

ONE YEAR AGO, THE NEWS WAS filled with information on the New York Attorney General's claim that ChemLawn Corp. was providing false and misleading information to its clients.

The Columbus, Ohio-based firm staunchly denied the claims and filed suit with the state's Supreme Court to protect its right to provide factual and scientific information to its customers.

Still undecided today, the case remains locked in a legal tug-of-war. However, it represents one of at least a half dozen pesticide-related cases jamming New York's court system.

In addition to a federal appeal objecting to state-legislated notification regulations, five state lawsuits opposing the Department of Environmental Conservation's regulations have been filed by a variety of organizations representing commercial pesticide applicators.

Decisions on the federal appeal and at least one state suit are expected with-



in the next month — in time for this year's lawn and landscape maintenance season.

We're obviously hoping for the best outcome — a decision which would en-

able operators to run their businesses effectively, yet informatively. And for the DEC to end its attack on the state's lawn care industry and pass reasonable regulations based on the most up-to-date scientific information.

Whatever the outcome, the whole industry, individual operators and state and national associations alike, should be commended for joining forces to fight business threatening regulations in New York, and possibly throughout the industry.

The Professional Lawn Care Association of America should also be praised for its decision to support the legal battle with a \$10,000 contribution. The PLCAA's board of directors recently indicated that they intended to make issues management a high priority this year. The contribution and faith in the ability of industry operators to run their businesses effectively goes a long way in promoting the professional status of this dynamic industry. — Cindy Code.

Cindy Code Editor

Charlotte Goerss
Art Director

Helen Duerr Assistant Art Director

Jami Childs Production Manager

Fran Franzak
Office Manager

Rosalie Slusher Circulation Manager

Maureen Mertz
National Sales Manager
42480 Park Ridge Road
Novi, Michigan 48050
313/348-9636

Richard J.W. Foster
President

Maureen Mertz Publisher

Dan Moreland
Vice President/Editorial

Gary Jantonio
Vice President/Finance

Michelle Mindell Research Assistant

Diane Palwicki
Accounting Manager

Hal Stains
West/Central Sales Rep.
4012 Bridge Avenue
Cleveland, Ohio 44113
216/961-4130

EDITORIAL OFFICES

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

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CALENDAR

MARCH 17

The first Colorado Association of Lawn Care Professionals Conference and Trade Show, Viscount Hotel, 200 W. 48th Ave., Denver, Colo. 80216. Proceeds go to Colorado State University turfgrass research. Contact: Julia Marie, 303/688-2268.

APRIL 5-6

1989 Landscape Industry Show, Long Beach, Calif. Contact: California Landscape Contractors Assoc., 2226 K St., Sacramento, Calif. 95816; 916/448-CLCA.

APRIL 21-22

1989 South Florida Landscape Trade Show, sponsored by the Florida Nurserymen and Growers Association, Radisson Centre, 777 N.W. 77th Ave., Miami, Fla. Contact: Charlye Roberts, 14695 S.W. 216 St., Miami, Fla. 33187; 305/235-2035.

APRIL 22

10th Annual Texas Wildflower Day, Denton, Texas. Contact: TWU Wildflower Committee, P.O. Box 22675, Denton, Texas 76204; 817/898-3326.

JULY 31 to AUG. 2

International Lawn, Garden and Power Equipment Expo, Kentucky Fair and Exposition Center, Louisville, Ky. Contact: Expo 89, P.O. Box 70465, Louisville, Ky. 40270; 800/558-8767.

OCT. 8-11

The Associated Landscape Contractors of America Interior Plantscape Division Conference and Trade Show, Boston Park Plaza, Boston, Mass. Contact: ALCA, 405 N. Washington St., Falls Church, Va. 22046; 703/241-4004.

NOV. 6-9

The 10th Annual Professional Lawn Care Association of America Conference and Trade Show, Las Vegas, Nev. Contact: Jim Brooks, executive vice president, 1000 Johnson Ferry Road N.E., Suite C-135, Marietta, Ga. 30068-2112; 404/ 977-5222 or 800/458-3466.

NOV. 7-10

New York State Turfgrass Association Annual Conference and Trade Show, Rochester Riverside Convention Center, Rochester, N.Y. Contact: Beth Seme, executive director, P.O. Box 612, Latham, N.Y. 12110; 518/783-1229.

NOV. 10-13

Green Team Conference and Trade Show, Cervantes Exposition Center, Omni Hotel, St. Louis, Mo. Contact: Associated Landscape Contractors of America, 703/ 241-4004 or Professional Grounds Management Society, 301/667-1833.

NOV. 12-15

Irrigation Association Annual Conference and Show, Anaheim Convention Center/Marriott, Anaheim, Calif. Contact: R.C. Sears, executive vice president, 1911 N. Fort Myer Dr., Suite 1009, Arlington Va. 22209-1630; 703/524-1200.

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NEWS IN BRIEF

5 HYDRO LAWN BRANCHES ACQUIRED BY TRU GREEN

Five more Hydro Lawn branches have been acquired by Tru Green Corp., giving the Waste Management owned company a stronger presence in Pennsylvania and an opportunity to enter the New York arena.

The New York branches are in Rochester and Syracuse, and the Pennsylvania branches are in York, Allentown and Harrisburg. Tru Green of Alpharetta, Ga., previously acquired Hydro Lawn's Phila-

delphia branch.

The sale included the five branches and all that goes with them: facilities, equipment and employees, according to Jerry Faulring, president of Hydro Lawn, Gaithersburg, Md. The sale was designed to refocus the energies and efforts of Hydro Lawn in the Washington/Baltimore area, where the company now has five branches — four of which are in Washington.

"We see Washington/Baltimore as the best market in the nation," Faulring said. "It was a good transaction for both of us. It gave us a significant amount of leverage for expansion."

Combined annual net sales for the five acquired Hydro Lawn branches was \$1.85 million, according to Don Karnes, senior vice president for Tru Green.

Faulring has no plans to increase the fleet or staff at Hydro Lawn's remaining branches, but said increased revenue will be achieved through a modest increase in customer accounts and the offering of upper level service programs. He anticipates 20 percent growth for his company in 1989.

For Tru Green, the acquisition was one of numerous buy outs attained since being acquired by Waste Management, Oak Brook, Ill., in 1987.

As Tru Green prepares for another year of intensive growth through acquisition, a new president will be at the helm. John Slocum, a Waste Management vice president, will fill the shoes of John Hayes, former Tru Green president who recently resigned to pursue other interests. Hayes will serve as a consultant to Tru Green.

Hayes had served as president for about a year — replacing friend Howard Evers. Evers and Hayes were among the founders of Tru Green.

Slocum, who will divide his time between Oak Brook and Alpharetta, said Tru Green will continue to look for acquisitions in most major markets, but predicted buy outs wouldn't be as numerous as in 1988 because of changes in the tax laws. He added that the opportunities for growth still remain good.

Slocum's appointment makes him one of only a few Waste Management officials named to fill positions at Tru Green since the buy out in 1987. Slocum said, however, that Tru Green will continue to work within and refine strategies developed by Tru Green as a basis for future company growth.

(continued on page 12)

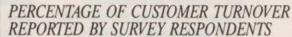
OPERATORS SURVEYED ABOUT SERVICE EXPANSION

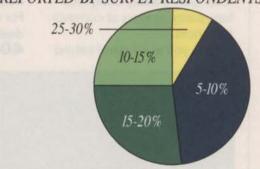
INCREASED CUSTOMER demand and a strong desire for greater profits were the predominant reasons behind decisions to expand their lawn maintenance services last year, according to a recent survey by The Dow Chemical Company. Eight-eight percent reported that they've seen an increase in customer demand for different services in the last year.

A smaller percentage of the respondents cited pressure by their competition as a motivating factor. The maintenance operators were interviewed at the annual meeting of the Professional Lawn Care Association of America.

Ninety percent of the respondees said they now offer services beyond basic lawn care. Sixty-four percent include tree/shrub fertilization and insect spraying, 59 percent provide mowing and lawn renovation, 41 percent landscape pruning, 36 percent landscape installation and tree/shrub pruning, 33 percent irrigation installation, 25 percent building perimeter insect spraying and 13 percent indoor pest control and snow removal.

Firewood, garden center and pool chemical sales; pressure cleaning; and industrial weed control were also listed as expanded service offerings.





The maintenance operators mentioned weed control, fertilization, insect control, aeration and disease control — in that order — as their basic service offerings.

When asked what percentage of their customer base turns over in a given year, 40 percent reported a 5 percent to 10 percent turnover, 28 percent said they lose 15 percent to 20 percent, 25 percent reported a 10 percent to 15 percent rate and 7 percent listed a turnover rate at 25 percent to 30 percent.

The maintenance operators suggested various tactics that could reduce customer attrition. These included: better customer communication and education, better and more service, improved weed control, enhanced employee training and correct use of lawn maintenance prod-

nets

Reed Hull of Vita Lawn Corp., Rancho Cordova, Calif., said that producing an informative customer newsletter, surveying customers periodically and responding to their needs can have "an excellent payoff."

"Doing your job right the first time, will reduce turnover," said Bill Johnston of Pro-Mow Inc., Kennesaw, Ga., who is an advocate of better employee training.

Of the maintenance operators surveyed in New Orleans, 45 percent were from the Midwest, 22 percent represented the East Coast, 20 percent were from Western states and 13 percent were from the South. They averaged 9.2 years of experience in the lawn maintenance business and worked for all sizes of industry firms.



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News (continued from page 10)

CHEMLAWN TO STAY IN COLUMBUS HEADQUARTERS

There's no truth to the rumors that Chem-Lawn Corp., Columbus, Ohio, is moving its corporate headquarters to Etobicoke, Ontario. There was, however, a move made by ChemLawn's Canadian division.

The Canadian corporate headquarters relocated its offices to 41 Horner Ave., Unit 1, Etobicoke, Ontario; 416/251-2444.

The recent announcement by the Canadian office caused confusion among industry representatives who wondered if the Columbus-based ChemLawn was heading North.

MONSANTO GAINS EXPERIMENTAL USE PERMIT FOR DIMENSIONTM

Monsanto Company announced the issuance of an experimental use permit for its new DimensionTM (MON 15151) turf herbicide formulation for use on ornamental turfgrasses.

The permit is valid for use on 1,300 acres in 21 states. The product will be tested with lawn maintenance operators,

golf course managers, landscapers and other professionals involved in fine turf management.

The product is formulated as an emulsifiable concentrate with one pound per gallon active ingredient. The new compound is selective and has both preemergent and postemergent activity on crabgrass as well as controlling many other undesirable broadleaf weeds and grasses.

TORO'S NET EARNINGS ROSE IN SPITE OF INCLEMENT WEATHER

The Toro Company (NYSE:TTC) last year recorded net earnings in a year which included the worst drought of the century and below normal snowfalls in many major urban areas in the country.

"The Toro Company of today is far better positioned to withstand weather variability than we were at the beginning of this decade," said Kendrick B. Melrose, Toro's chairman and chief executive officer.

When he became president in 1981, Melrose recalled, it was a widely held belief that if it didn't rain or snow in the same year, "I should update my resume," he said. Melrose credited a strategy of "balancing" the business with Toro's recording an increase in sales and net earnings for seven straight years — the first time that has been achieved in the 75-year history of the company.

"Today we've added a second branded line (Wheel Horse) that has generated more than \$100 million in annual sales," Melrose said. "No single product category accounts for more than 24 percent of our annual sales, and we've maintained our global leadership in snow removal products while managing sales of snowthrowers at less than 10 percent of our total business."

He added that the company is also better balanced geographically with 15 percent of total sales coming from outside the United States vs. just 10 percent as recently as 1985.

"We are extremely proud," Melrose said, "to have been sought out by the Soviets as consultants on Russia's first ever golf course on the outskirts of Moscow. It's no coincidence that the course will be irrigated and maintained with Toro products."

He said the company hopes to be able to deliver to stockholders a consistent 15 percent increase in earnings.

Toro's board of directors recently de-



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Rt. 1, East Stone Drive Kingsport, Tennessee 37660 clared a regular quarterly dividend of 12 cents per share of common stock payable Jan. 12, to stockholders of record Dec. 27, 1988.

The company currently has 10,009,583 shares of common stock outstanding.

The Toro board also announced that the company intends to repurchase up to 500,000 shares of its common stock. Melrose said the purchases will be made at market price over an unspecified period of time and will be used for general corporate purposes.

CUSHMAN ACQUIRES NOLAND CAR COMPANY

The Cushman Division of Outboard Marine Corp. has acquired the Noland Car Company, Edgewater, Fla.

Noland manufactures gas and electric utility and specialty vehicles. Typical vehicles include a turf vehicle for golf course and sports turf maintenance, courtesy vehicles for hotels and resorts, a food and beverage car and utility

"The acquisition of the Noland Car Company will allow us to extend the Cushman product line to include a basic, low-cost maintenance vehicle, as well as a



Turf utility vehicle recently acquired by Cush-

wide variety of specialty vehicles," said C.P. Bangert, Cushman division manager. "It's a natural extension of our business. One that will help us better meet the needs of the markets we now serve, plus allow us to move into new markets.

Noland vehicles will be marketed under the Cushman name immediately.

NEW LANDSCAPE, MOWING FIRM HITS THE EAST COAST

Supreme Landscapes of Gaithersburg, Md., is "up and running" according to founder Jerry Faulring.

Faulring, president of Hydro Lawn,

developed the mowing and landscape maintenance company as a service to Hydro Lawn's current customer base who had an interest in adding to their basic lawn care program.

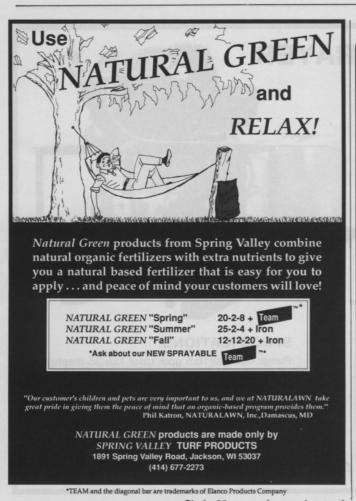
The company will offer three basic programs: the mow and grow, a combined mowing and upper level lawn care package; the lawnscape, a lawn care plus tree/shrub program; and the full service landscape management program which offers services from the other two packages plus edging, pruning, mulching, leaf removal and clean up.

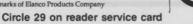
Although operating from the same building, the two companies are completely independent of one another, he said. Supreme Landscapes' will initially draw from Hydro Lawn's customer base. Once a Hydro Lawn customer chooses a service offered by Supreme Landscapes, he will become a customer of Supreme Landscapes only.

"There's been a lot of interest from the Hydro Lawn customer base. So far, they're the only people we've contacted," Faulring said.

Faulring hopes the new company will develop a customer base of 100 to 180 this year.

The development of Supreme Landscapes stems from market research con-







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ducted to determine the need and customer willingness to pay for additional services.

BLACKBURN OPENS SECOND MANUFACTURING PLANT

Blackburn Manufacturing Company, a leading manufacturer of marking flags, recently opened a new facility in Cambria, Calif. The new plant will serve the region west of the Rocky Mountains, while the original Nebraska location will serve customers east of the Rockies.

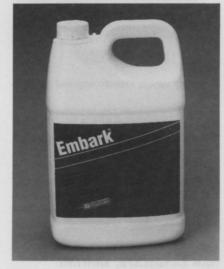
According to President Jim Blackburn, the company has been manufacturing marking flags since 1953. The flags are used in several industries including lawn maintenance, utilities, irrigation, landscaping, construction, surveying and agriculture.

PBI/GORDON MAKING STRIDES WITH BREAKTHRUTM, EMBARK PGR

PBI/Gordon Corp., Kansas City, Mo., has become the exclusive marketer of Break-ThruTM herbicide, a non-phenoxy (chlorfluernol) broadleaf weed killer developed by The Andersons, Maumee, Ohio. The news stems from a recent

agreement announced between the two firms.

Forming a pearlescent, micro-emulsion, which results in a tank-mix suspension of fine particles, Break-Thru results in more uniform distribution of the active ingre-



dients on leaf surface, and improves the penetration and translocation within the target weed.

PBI/Gordon is adding the new herbicide to its Professional Turf and Ornamental Product line. As an introductory

promotion, a 32-ounce container of Break-Thru is being "piggybacked" to a 12ounce sample of Banvel 4S for tank-mix targeted to the control of broadleaf weeds in 2,4-D-sensitive southern grasses.

PBI/Gordon also announced the recent acquisition of Embark PGR and certain other agricultural products from the 3M Company, St. Paul, Minn.

For the past two years, PBI/Gordon has been the worldwide marketer of Embark, a plant growth regulator for reducing the mowing of low maintenance turf, such as roadsides, golf course roughs, stream banks, etc, as well as for edging around walls, fences, trees, grave stones, etc. PBI/Gordon has enlarged the Embark market with the development of a special PGR/iron/herbicide program for irrigated, low-traffic ornamental turf.

Embark has been tested extensively in grass pastures for beef cattle, where eliminating seedheads and suppressing the grass growth keeps the treated pastures green and lush for several weeks longer during the summer.

Along with the ownership of Embark, the acquisition included other herbicides and plant growth regulators under development, along with numerous patents relating their chemistry.

(continued on page 16)

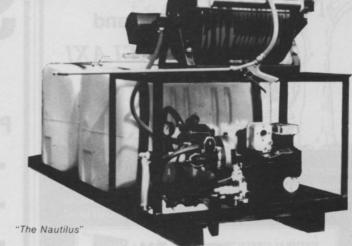
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Hose: 300' X 1/2" 600 p.s.i.

Hose Reel: Electric rewind Hannay or Nordic

Gun: Choice of lawn or ornamental

Tank Sizes: 2 X 100 gal.

2 X 150 gal.

2 X 200 gal.

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News

(continued from page 14)

GREYLOCK INDUSTRIES PROJECTS \$15 MILLION IN ANNUAL SALES

The merger of Consolidated Chemex Corp., Cinnaminson, N.J., and L&A Products Inc., St. Paul., Minn., leading manufacturers of pressure washing systems and equipment, was recently announced.

The two companies will operate as independent divisions under the new corporate name of Greylock Industries Inc., with headquarters in Cinnaminson.

Annual sales of the new company are projected to be \$15 million, making Greylock one of the largest producers of hot and cold water pressure washers in the nation. Both divisions, with a combined experience of 46 years in the industry, will retain their distributors numbering more than 600 in the United States and Canada

INDUSTRY INTERNSHIPS PAVE CAREER PATHS FOR STUDENTS

Four university students recently completed summer internships with Fermenta Plant Protection Company, Mentor, Ohio. They are: Steven Kammerer, Xenia, Ohio; Christopher Davis, Attica, Ind.; John Nygaard, Scandinavia, Wis.; and Taron Thorpe, Newville, Ala.

The students spent three to four months learning about diseases that can damage food crops and the protective benefits of fungicides.

Taron Thorpe, a senior studying agricultural economics at Auburn University, noted that his internship had a positive influence on his career goals. "The entire program has been informative and challenging because I was given the responsibilities of a full-time sales representative. I improved my communication skills and learned to manage my territories efficiently and to be a self-starter and a self-motivator," he said.

U.S. PATENT GRANTED FOR CoRON FERTILIZER

A U.S. patent was recently issued to Co-RoN Corp.'s amine-modified Polymethylene urea nitrogen fertilizer solution, a rare accomplishment in the fertilizer industry, according to company officials.

In the fertilizer industry it's uncommon to see basic research into the chemistry of plant nutrient materials, and even more rare to see wholly fertilizer compounds developed, according to company officials.

With the issuance of a patent for CoRoN's amine-modified Polymethylene urea fertilizer solution, CoRoN Corp. joins the ranks of research-oriented, progressive, fertilizer manufacturers that may very well alter the fertilizer industry as it is known today.

CoRoN is a clear liquid, storage stable, 28-0-0 solution with a near neutral pH and no free ammonia. The nitrogen content comprises 29.7 percent urea with the remaining 70.3 percent controlled release portion composed of Polymethylene urea (64.2 percent), Methylene diurea (4.9 percent), and Methylolurea (1.3 percent).

EXPANSION LEADS TO NAME CHANGE FOR HUSQVARNA

Husqvarna Power Products, Itasca, Ill., has changed its name to Husqvarna Forest & Garden Co. in a move designed to convey the company's continued expansion in lawn and garden power equipment.

The new name more accurately reflects the company's product offering and adds North American continuity to the Husqvarna Forest & Garden name known around the world.



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WEED



CHIPCO 26019 fungicide stops more lawn diseases... for more days...for more satisfied customers.

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CHIPCO 26019 fungicide controls most major lawn diseases, including Helminthosporium Leaf Spot and Melting Out, Fusarium Blight, Brown Patch, Dollar Spot and Red Thread. And unlike some other fungicides, CHIPCO 26019 fungicide stops these deadly diseases before they get started.

Better yet, CHIPCO 26019 fungicide provides the month-long protection it takes to get you from one scheduled round to the next. That cuts down on customer complaints and costly call-backs.

You'll also like the fact that CHIPCO 26019 fungicide now comes in a convenient flowable formulation as well as wettable powder. Plus, CHIPCO 26019 fungicide is low in toxicity, for added protection to applicators and homeowners.

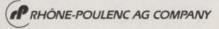
So don't stop with just feeding and weeding your customers' lawns. Discover how better disease control can add up to bigger profits with CHIPCO 26019 fungicide.

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FUNGICIDE



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ASSOCIATION NEWS

THE CALIFORNIA LANDSCAPE Contractors Association will hold its 10th Annual Landscape Industry Show April 5-6, at the Long Beach Convention

Center.

Touted for many years as the largest and most complete exhibition of its kind in the West, this 10th edition of the show features several improvements which promise to make it bigger and better than ever before.

CLCA has added 22,000 square feet of exhibit space to the 42,000 that were available in 1988. This means that the trade show will spill out of the convention center's exhibit hall, where it was confined for the past several years, into the adjacent arena.

In addition, an expected 325 suppliers will be presenting their goods and services to landscape professionals, as opposed to the 217 that exhibited at last year's sellout.

The association has also changed the show's hours in an effort to make it more convenient for most visitors. Doors will open earlier, 9 a.m., and close later, 7 p.m., than they did on most of last year's show dates. And while the show has been reduced from a three- to a two-day affair, it will run for almost as many total hours as it did a year ago.

Also new this year is a computerized locator system for attendees seeking specific products. Upon request at the show, attendees will be given a free list of all exhibitors displaying the specified products, as well as a map with booth locations.

Finally, CLCA has computerized its registration system for 1989, making preregistration unnecessary except for the seminar program.

Advance registration is \$35 for each seminar and \$90 for any three. For registration after March 24 or at the door, the cost is \$40 per seminar.

More than 1,600 professionals from the turfgrass industry attended the North Carolina Turfgrass Association conference held in January at the Raleigh Civic and Convention Center. The attendance surpasses previous records by 68 percent.

The trade show consisted of 240 booths and 125 exhibitors.

The opening session included the presentation of a new synchronized slide set highlighting the size and importance of turf to the citizens of North Carolina. According to a 1986 statewide survey, there are more than two million acres of turf in North Carolina with annual maintenance costs exceeding \$734 million.

Donations totaling \$24,600 were given to the North Carolina State University Turfgrass Research and Extension Fund from the Turfgrass Council of North Carolina, Carolinas Golf Course Superintendents Association, Eastern Turfgrass Association, North/South Turfgrass Association, Piedmont Turfgrass Association, Triangle Turfgrass Association and the Western Turfgrass Association.

New officers and directors were elected to the **Nebraska Turfgrass Foundation** at its recent conference and show in Omaha. More than 800 attendees and 130 exhibitors filled the exhibition area.

Officers re-elected for a second term are President Larry Hergott, golf course superintendent at the Elks Country Club, Columbus; Vice-President Hans Bross of Westlawn-Hillcrest Cemeteries, Omaha; and Secretary-Treasurer Twyla Hansen, grounds manager at Nebraska Wesleyan University, Lincoln.

Newly elected board member for a three-year term is Steve Paustian, director of recreation for the City of Grand Island. Re-elected for a second term on the board are Hans Bross of Westlawn-Hillcrest Cemeteries, Omaha, and Carlos Stimson, senior technical representative for O.M. Scott & Sons Pro-Turf Division, Omaha.

1988 Green Survival Awards Program winners were announced at Congress 89, Canada's largest horticultural trade show. Winners were announced in six categories:

PRIVATE RESIDENTIAL — DESIGN BUILD: \$25,000 and under, Garden Creations of Ottawa Ltd, Ottawa; \$25,000 to \$100,000, Parkland Nurseries Ltd., Gormley; \$100,000 and over, Acme Environmental, Toronto; Entrance, Oshawa Garden Service Limited, Brooklin; Recreational, Parklane Nurseries Ltd., Gormley. PRIVATE RESIDENTIAL — CONSTRUCTION: Entrance, Mother Nature Landscape Design Ltd., Nepean. COMMERCIAL/INDUSTRIAL: Three acres and under, Ottawa Valley Landscaping Ltd., Nepean.

COMMERCIAL/PUBLIC: More than 10 acres, Hank Deenen Landscaping Company, Scarborough.

MAINTENANCE/RESIDENTIAL: Under two acres: Garden Creations of Ottawa Ltd., Ottawa; two to 10 acres, Hank Deenen Landscaping Company, Scarborough.

COMMERCIAL: Under two acres, Wright Landscape Maintenance Ltd., Bloomingdale; Oskawa Garden Service Limited, Brooklin; two to 10 acres, Wright Landscape Maintenance Ltd., Bloomingdale; more than 10 acres, All Seasons Garden & Maintenance Ltd., Oshawa.

The Mid-Am Horticultural Trade Show achieved record-breaking attendance when 8,303 growers, landscape professionals and suppliers attended Mid-Am '89 at the Hyatt Regency Chicago.

Attendance surpassed last year's record of 7,345, and included: 6,312 buyers, 1,498 exhibitors; 398 students; and 95

others.

Registration by state showed the greatest representation from: Illinois with 5,323; Wisconsin, 1,260; Michigan, 564; Indiana, 537; Minnesota, 155; Iowa, 144; and Ohio, 138. Attendance also included horticultural professionals from 44 states, Canada and three other countries.

FOR MORE INFORMATION CONTACT.

CLCA 2226 K Street Sacramento, Calif. 95816 916/448-2522

TCNC P.O. Box 5395 Cary, N.C. 27511 919/467-1162 NTF 2727 W. 2nd St., P.O. Box 2118 Hastings, Neb. 68902-2118 402/463-5418

CONGRESS 89 1293 Matheson Blvd. E. Mississauga, Ontario L4W 1R1 416/629-1184

Mid-Am Trade Show Suite 214 1000 N. Rand Rd. Wauconda, Ill. 60084 312/526-2010

FOCUS ON:

IRRIGATION

ELECTRICAL TROUBLE-SHOOTING FOR IRRIGATION SYSTEMS

ELECTRICAL TROUBLE-SHOOTING tends to bring fear into the heart of most irrigation contractors. However, there are certain steps the non-electrically oriented individual can easily accomplish to determine and correct a problem in the electrical portion of an irrigation system.

No irrigation manufacturer expects the average contractor or end user to be able to trouble-shoot and repair a complex controller. What a contractor should be able to do is define where the problem actually exists and make the correction either by repairing or replacing the defective item.

A major source of problems that most users are unaware of is the power supply — the source from which the electricity to operate the irrigation controller is derived. The ultimate power source is, of course, the power company. However, the power source that we are concerned with is the panel box (circuit breaker box) from which the power is distributed for the site.

In most cases the power company brings 220 VAC into this box and splits it into two legs of 120 VAC each, creating two power supplies. These two power supplies are out of phase with each other. (If waveforms of these two were overlaid, one on top of the other, they would can-



Photo: Weather-matic Corp.

cel each other.) This is important if more than one controller and a common valve neutral are going to be used. If a common valve neutral is going to be used, all controllers using this neutral must be on the same power supply.

To determine which circuit breakers are on the same supply leg, take a voltage reading between the output connectors of the circuit breakers. If you read 220 VAC between the breakers, they are out of phase. If you read zero VAC, they are in phase and can be used. In most panel boxes, every other breaker on a side are in phase.

Most irrigation manufacturers don't

recommend using a common valve neutral. Always check with the control manufacturer.

When hooking up the II5 VAC to the controller, the wiring should be phased properly. By using a volt meter, this is easily accomplished. If the wiring is properly installed, a reading between L2 and G will be evident. Always earth ground your controllers. This will keep anyone from being injured in case L1 shorts of the housing.

It is required by law that all controllers be earth grounded. Check with the control manufacturer for recommendations for earth grounding. In most installations, earth grounding can be accomplished by grounding back through the power supply. However, when controls are mounted a considerable distance from the power supply, especially when they are pedestal mounted, they should be earth grounded at the controller location.

A broken valve common neutral is another common wiring problem that is time consuming and difficult to fix. Again, this problem is readily identifiable. If the controller is calling for a particular valve to

operate, only that station should have a voltage reading between it and neutral.

If the valve does not operate and other stations in the controller also show voltage while a particular station is trying to operate, this indicates a broken valve common neutral. This can be cured by the use of ground rods. Earth ground the valve common neutral at the controller by using a ground rod. In addition, earth ground the valve common neutral at the valve that will not operate. The system should now operate normally. — Don Cooper

The author is product manager for Weather-matic Corp., Dallas, Texas. Cooper presented this talk at the Landscape Irrigation Contractors Short-Course in Las Vegas, Nev.

SOLENOID FAILURE: AN IRRIGATION PROBLEM

ONE OF THE MOST COMmon failures in an irrigation system is a solenoid failure. There are two types of solenoid failures, shorted windings or open windings. Both are easily detected with a VOM (volt/ohm meter). By using the ohm meter we can determine if the windings of a solenoid are good. At the controller, disconnect the valve lead wires. Hook the ohm meter leads to the valve common neutral lead and one of the valve leads. You should obtain a reading greater than

Manufacturers use different methods in making the solenoids for their valves. As a result, no two solenoid manufacturers may have the same resistance for their solenoids. To avoid having to learn the resistance rating of each manufacturer's solenoids, look for deviations from the norm by measuring resistance readings. The defective solenoid is easily spotted through a reading vastly different from the other solenoids.

Solenoids have three electrical ratings to be aware of in trouble-shooting.

- Surge or inrush this is the amount of voltage and current necessary to get the solenoid actuator (plunger) raised.
- Dynamic or operating this is the amount of voltage and current used when the actuator

is seated

3. Dropout — this is the point at which the voltage has to drop to allow the actuator to release.

Dropout should occur some here between 7 to 11 volts and about 50 ma of current. This is significant when damaged wiring or bad connections are in the system, which can result in "leaking current." This can cause a valve to remain on after the controller has moved to another station. This occurs only on controllers that use a "make before break" type of switching arrangement for the valve output. This means that the controller turns on the next valve in line before it turns off the current operating valve.

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Ryan equipment is a great addition to your business. Because with the Ryan line, you can do more jobs faster at less cost. There's less downtime and more worktime. And the more work you can do, the more business you'll take on.

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The Lawnaire IV is the highest-quality, roll-type aerator on the market today. It combines speed and precision for fast and effective core aeration.

Self-propelled by a rugged 3-hp. industrial engine, the Lawnaire IV features a 38 lb. removable weight bar and a 55 lb. water drum, made of durable, corrosion-resistant polyethylene for tine penetration up to 2¾ inches. The 30 coring

tines penetrate the soil evenly every 3¾ inches across a 19-inch path. A convenient lift handle raises and lowers the machine for easy maneuverability in tight spots. A single clutch-throttle lever on the handlebar makes operation a snap.

Add Ryan's durable, lowmaintenance, chain-drive design, and you've got an aerator that will keep you on the job and out of the repair shop for years to come.



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Nothing is as versatile and effective for turf renovation as Ryan's new Mataway Overseeder. A powerful 10-hp. engine and extra wide 19-inch swath lets you dethatch or deep slice up to 10,000 square feet per hour. Snap out reels make it easy to change the type of blade and spacing you want. An Overseeder accessory can also be added, giving you the flexibility to power rake, overseed, or to do both at the

same time with a single piece of equipment.

It's a cost-effective way to stay one step ahead of your competition.

A full line of Ryan reliability.

The proven Ryan Ren-O-Thin® power rakes with interchangeable reels; the industry standard Jr. Sod Cutter with Tote Trailer; and the Tow Lawnaire for really large turf areas put you in a position for additional business. Because they're what you need to provide

professional quality turf care.

Prove it to yourself.

The best test of Ryan's reliability is in your own back yard. So ask the dealer nearest you for a free demonstration today. Or call toll-free: 1-800-228-4444.

BUILT TO LAST

Creative Marketing Targets Customers' Specialized Needs

N FIVE YEARS UNDER INNOVATIVE PRESIDENT DANiel Joseph Pellegrino, sales for J & D Landscape Contractors, Newton, Mass., have climbed 300 percent.

In each of his first three years, J & D Landscape doubled its gross sales. Growth leveled off the following two years, but J & D still managed *moderate* increases, from 20 percent to 30 percent, enabling the company to surpass \$1 million in gross sales.

J & D Landscape is a third generation full-service landscape firm performing both general maintenance and installation as well as construction work.

It's commitment to its customers, the industry and its employees has earned J & D Landscape ALA/Maintenance magazine's third annual Award for Professionalism. Atwood LawnCare, Sterling Heights, Mich., and Greenlon Lawn Care Services, Cincinnati, Ohio, were selected our winners in 1986 and 1987 respectively.

With his success unprecedented in the long history of the Newton firm, Pellegrino, 35, has learned early that achievement often pre-

sents difficult choices.

"I don't anticipate continuing to grow at this rate. We're certainly not going to double sales like we did for three consecutive years because it was just too much of a burden," Pellegrino admitted. "Idon't like to lose control of the company like you do if you continually grow. A lot of companies push to grow and grow. I would rather sit back and catch my breath, reevaluate and then decide if I want to grow a little more."

J & D Landscape was incorporated in 1962, but its rich legacy started before the Depression. Pellegrino's grandfather, Cesidio "Joe" Pellegrino, came to the United States from Italy and began working as a small landscape contractor in Newton. He raised his family in the landscaping profes-

sion, and invited his grandchildren into the business as they grew old enough to accept responsibilities.

When Joe Pellegrino retired, his son Daniel James Pellegrino took a partner, Joe Farina, to help him run the business. At first glance, that represented the end of the "family" business, but it wasn't. Farina married Dan Pellegrino's sister, who was also working at the company.

The young Dan Pellegrino, his brother and a cousin all followed in the family landscaping tradition. After completing a two-year intensive program at the University of Massachusetts, Stockbridge, the three worked together for J & D Landscape. But after five years, his brother joined the state police and his cousin went into the printing business.

Pellegrino stuck with it and eventually bought out Farina's share of the business. He and his dad ran the business together for about 10 years. Pellegrino later bought the business from his father and has been running it on his own for a little more than five years.

Pellegrino's father still takes an active interest in the success of the business, but leaves the decision making to his son. In addition to



An aerial view of J & D Landscape as seen through the eyes of photographer Fran Hines, Sudbury, Mass.



The crew of J & D Landscape:
In front from left to right, Fernando Rego and John DoRego.
In rear from left to right, Richard Proia, Reno Spallieri, Daniel
James Pellegrino, Daniel
Joseph Pellegrino, Andrea
DiFoggio, Dianne Barberio and

Jim Blake, Photo: Fran Hines.

the inroads his company made in the landscape industry, the elder Pellegrino founded the Associated Landscape Contractors of Massachusetts and served twice as president. His son served several years on the association's board of directors.

And like his father and aunt before him, Pellegrino and his sister, Andrea DiFoggio, work alongside one another. DiFoggio handles the bookkeeping and a variety of other responsibilities.

Like any young adult considering venturing into the family business, Pellegrino had his doubts. He'd heard in school how tough it was to go into a family business, and openly admits considering other career choices. But something always pulled him back to landscaping.

"Specialized construction projects are what I really wanted to do,' he said. "I didn't want the job to end after the grass was cut."

The business started out strictly a mowing maintenance service and gradually evolved into tree work and landscape construction. The Pellegrinos have a sincere interest in caring for their customers' property on a full-time basis. Not only are they concerned about the landscape today, but how it will look in 10 years.

"Our maintenance accounts are people who don't just require the service, they want the service and they're willing to pay for it. They want to deal only with us," Pellegrino said. "They don't want to deal with a lot of different subcontractors — one for tree spraying and one for mowing."

In the five years of dramatic company growth, J & D had to take on some more office staff. After trying a variety of temporary help, they added Dianne Barberio to their office support staff. The unprecedented growth also awakened Pellegrino to the importance of hiring and training.

"It's not always easy, because you first have to find the employees that you can train and then hang onto them," he said. "You try to offer them benefits and things to make them stay — you can't always be competitive."

Professionalism isn't something taken lightly at J & D. From the time a potential employee shows up at the company, to the time he shows up at the customer's front door, the significance of customer satisfaction is stressed over and over.

"I have to see people before I hire them, before I'll put them in front of a client's house. I'll turn work down before I'll put somebody I don't approve of in front of my client's houses," he said. "I ask them who they worked for, why they left their last job and then I'll call and check on their references so I'm comfortable with them. We kind of keep a close eye on all our employees."

The effort puts a lot of pressure on the young company president, but the results reverberate throughout the company.

"You want to make sure you're keeping up with the industry and that as the industry gets more professional, so do you," Pellegrino said. "There's a lot of young companies starting out that are really on the ball. You can't afford to fall behind.

"Ninety percent of our business is repeat business. The job has to speak for itself. If there's any problem, I want to know about it personally. We have some customers we've been taking care of for more than 50 years. I guess it says something about the way you treat them, they have no need to go elsewhere."

Each day, about six company crews prepare for that day's tasks. Generally, two maintenance crews of three men each are sent out for a variety of maintenance activities such as mowing, mulching, ornamental installation and weeding. Specialty crews are dictated by scheduling and weather parameters. These crews include fertilization, spraying, pruning, irrigation and a variety of construction jobs including patios, tennis courts and driveways.

The first maintenance crew takes one route while the second takes the other. Occasionally the two will switch to learn the other route in case someone's sick.

The company often works with local landscape architects before starting design work.

Each crew is run by a foreman who is personally introduced to the customers on his route before the season begins. Throughout the year, a computerized routing system enables each foreman to receive knowledge of a customer concern or compliment almost as soon as it's received.

"Any correspondence that comes into the office automatically goes into our computer, gets printed out and is included on the job sheet for the day they're going to see the client," Pellegrino said. "The crew foremen sees it whether it's good or bad."

He particularly likes to make sure the compliments are passed along to the foremen and their crews. "I thought that was something I should play up with the foremen. Their attitudes are better as a result."

Because of the limited labor supply in New England, Pellegrino is forced to hire employees from as far away as Cape Cod, making reliable transportation difficult. Distance didn't stand in his way, however, as Pellegrino

(continued on page 26)

OUR RUNNER-UP PROFESSIONAL AWARD GOES TO ...

IF WE COULD HAVE GIVEN MORE THAN ONE PROfessionalism Award this year while maintaining the significance of each of them, we would have given an award to Lawn Specialties of Hazleton, Penn.

It's not surprising to see how the number of quality candidates for our award, which is presented annually to a deserving company, has grown. The level of professionalism exhibited in the lawn and landscape maintenance industry has grown dramatically, making our selection pleasantly more difficult.

Without further ado, our second place winner, Lawn Specialties, is a 10-year-old company offering a full-service schedule, a complete employee safety and training program and a tremendous level of industry support.

Its variety of programs include liquid and dry fertilization, fungi-care, liming, aeration, aero-seeding and tree and shrub care. In the Greater Hazelton area, the company also offers mowing, shrub trimming, edging and mulching and seasonal cleanups. Lawn Specialties also handles some roadside spraying.

But like many companies, particularly on the East Coast, Lawn Specialties finds itself in a full-service quandry: the willingness to provide full service, but a limited labor supply. As President Neal DeAngelo discovered, the two don't bode well.

"We have a hard enough time as it is getting lawn technicians," he said. "Our labor force situation is really impossible and it's only getting worse."

Lawn Specialties initiated its mowing services by acquiring a company with an established full maintenance crew. With the crew came an exclusive customer base. The crew works out of the company's main Hazleton branch, basically serving its original customer base.

The fact that the company came equipped with its own customer base and crew is what DeAngelo found most appealing. It enabled Lawn Specialties to get its name into the mowing trade, even if it currently represents only a portion of its business.

In 1988, 30 percent to 40 percent of Lawn Specialties

clientele were commercial customers, while 60 percent to 70 percent were residential. Those figures will soon change, as DeAngelo predicts that the percentages will run closer to 50/50 this year.

Lawn Specialties' show of support both within the company and industry spells a trail to success. All technicians are required to obtain a Pennsylvania commercial applicator's license, of which the company pays for all the training and licensing fees. The company also conducts cholinesterase blood testing for all employees that are exposed to cholinesterase inhibitors

Licensing fees financially threatened Lawn Specialties a year ago when various state municipalities began requiring individual licenses to operate within city boundaries. With price tags ranging between \$25 and \$100 a piece, DeAngelo investigated the situation and learned that the city ordinances were pre-empted by the state's pesticide regulations.

DeAngelo took the battle to court, resulting in a favorable ruling for Lawn Specialties. The decision was later appealed and eventually upheld, establishing a legal precedence in Pennsylvania.

A four-day spring training program is held annually for both new and existing employees. They are also exposed to a twoday summer update in addition to regular attendance at local and regional conference and trade shows.

The in-house training program includes an understanding of the current status of the lawn maintenance industry and its future, the importance of safety to employees, customers and the environment, an in-depth discussion of lawn agronomics and the principles of customer relations.

Application techniques/equipment operation, proper calibration and hands-on experience are all emphasized.

Lawn Specialties currently belongs to the Professional Lawn Care Association of America, Pennsylvania Turfgrass Council, Industrial Vegetation Management Association, Mountain Lake Vegetation Management Association and the National Roadside Vegetation Management Association.

DeAngelo is a PLCAA board of director.

You are in the fight of your life, and you need all the help you can get.

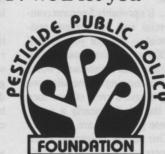
A powerful coalition of selfappointed "public interest" groups are using fear and misinformation to bring about the virtual elimination of pesticides.

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QUARTERLY

(continued from page 24)

supplies a company van for employees making the long commute.

The company pays for all the expenses on the van, but employees will often split gas costs. One foreman is generally in charge of the van and is responsible for driving the others home.

Finding the solution to such problems adds to Pellegrino's success. "Nothing comes easy. You pay a price for everything," he said.

"My grandfather used to have a little saying. He'd tell me don't be too sweet because they'll eat you up, but don't be too bitter because they'll spit you out," he said. "You have to be right in the middle of the road. If you're too easy, people are going to take advantage of you. If you're not, they'll get rid of you."

Q. Describe your customer base?

A. It's probably 5 percent commercial and 95 percent residential — but not your typical 10,000-square-foot houses. When doing regular maintenance work, such as mowing and weeding, we might have a crew of four men on the job for nearly a week. These properties are big.

Our weekly maintenance customers number about 100; that's a tight schedule for us. I know there's others that have 300 and 400 clients and they go in and mow every week. We don't work like they do. Ninety-nine percent of our clients are charged by the hour. We want to be paid for the time we're spending and that time only. If we're not there and it's bad weather, then they don't have to pay. If they feel the property is not being kept up at a high enough quality, then we tell them it requires more time. If we give them an honest days work, we feel we should get an honest days pay. You never get rich that way, but you're not going to go broke either.

Q. What service plans are available to your customers?

A. Most of our customers let us do what we think is best for the landscape. They leave me in charge of everything. Most clients are irrigated and I monitor most of the irrigation myself. Most are educated on the need for maintenance services and respect your

judgment. They treat you like you're doing a valuable service for them.

Q. So what's your typical program?

A. A good residential account consists of going in in the spring and giving them a thorough spring cleaning. We'll go through the whole property and see if there's any damaged plants or lawn areas in need of renovation work. We'll start with chemical applications on the lawn areas that need it and a tree and shrub insecticide program if they want it.

We only offer the insecticide program to our clients that we do all the maintenance work for. We just started offering a monitoring program in which we try to monitor the level of insects and determine the best control method using a combination of insecticides and biological controls.

We use mostly 99 percent granular material - granular blended fertilizer and slow-release nitrogens.

We recommend spring aeration, but we only guarantee irrigation systems that were installed by us. Otherwise we can't guarantee we can aerate without doing damage to their system because there's a lot of stony soils, established trees and a lot of roots.

If we can't handle all of our aeration jobs in the spring, or if a second aeration job is needed, we try to do it right around Labor Day weekend. That's approximately the time that the Japanese Beetle grub and larvae are starting again and we try to get it aerated before doing an insecticide application.

We also encourage our customers to do a late summer and early fall feeding. Most people have had it with their yard at that point. They like to see their lawn green.

I like to green it up slowly in the spring using at least a 50 percent organic nitrogen and then a heavier feeding in the early fall enabling it to grow later into the year.

Q. What about seeding recommendations?

A. When it's time to do it and I see it has to be done, I do it. Once you get the lawns in a reasonable state, unless they happen to get infested with an insect or a disease, they're pretty healthy in the fall. Most of our clients are all artificially irrigated so their yards don't burn out during the

Q. How many crews do you have?

A. Probably six to seven crews a day. Two crews consisting of three men serve as maintenance crews, like mowing and irrigation. One is a specialty crew handling fertilization, spraying, pruning, etc. We have construction, irrigation and masonry crews depending on what jobs we have scheduled. If we have a really big construction job, including excavation, we often double up crews to create six- and seven-man crews. Specialty crews run form one to two men.

Certain men are better at doing certain things than others. So if there's one particular crew that's better at heavy construction work, they'll do that. Masonry, on the other hand is very specialized.

Q. What kind of equipment do your crews typically use?

A. If we're doing a construction job with excavating, a crew would include a couple of truck drivers and several machine operators. A maintenance crew includes a dump truck with a tagalong trailer; three large mowers, 52- or 48-inch rotary mowers we use Bunton and Bobcats: a string trimmer; a leaf blower and any specialized equipment they may need. We always have three trailers fully set up.

Q. How long does your season run?

A. Our season starts around the middle of March and runs until New Year's. In November, we finish up our maintenance work followed by our construction work. The construction boom in the past five years has made it difficult to get good employees to finish the work.

O. How many employees do you have?

A. In season we have about 24 employees. It drops to 18 in the fall. We have a core of 10 employees year-round.

One foreman, Reno Spallieri, has been with the company for almost 20 years. He runs the shop, disciplines men and follows up with things. He's like a cushion between me and the employees. If he knows that I'm upset about a certain situation, he goes back to them before I have to say I'm upset to the employee.

I tell all my full-time employees not to wait for me to give them a job and more responsibility. I'll never take it away, they just have to take the initiative to do it. I'd rather have my employees designate responsibilities...I'll give them as much as they want.

How many foremen do you have?

A. Six foremen now. We occasionally lose some, but we try to give them the sense that they are an important part of the company, not just an employee. The foremen that I have now seem to want to do what has to be done for the company. It's not as if they have a job where they come in, put their time in and then go home. That's not the way it should be. They should take pride in what they're doing. If they don't take pride in what they're doing, then I don't want them working for me.

Q. What's the starting pay at J & D Landscape? A. With no experience and training it starts at \$7 per hour,

plus time and a half after 40 hours. If they're laid off in the fall and winter they can collect

unemployment.

Sometimes my employees hear that other companies are paying \$8. I stop and figure here's what I'm paying you and here's what you're getting for time and a half. Then when it rained the other day, I let you work in the garage, paid you for holidays and gave you a week's vacation. We also have a uniform service. The other guy (employer) doesn't always do all that. You come to work for me because you want to work for me and you know the company and the way we operate.

Foremen get medical and life insurance and the hourly receive a pension fund. If they stay here for one year we sit down and reevaluate the situation and decide what we're willing to offer. I would say most are pretty happy with what they're making.

O. How do you schedule your routes?

A. Our customers cover Newton, Brookline, Chestnut Hill, Westin, Wellsley, Needham and Dover. All of our accounts are probably within a maximum 35 to 40 minute drive from our garage.

We try to schedule the work in a ladder fashion where you

(continued on page 75)



Maintenance Professionals On a Proactive Course to Training

HETHER LAWN and landscape maintenance operators are interested in the issue of training and certification doesn't matter half as much as the fact that, in time, they will have to become interested. The gathering tide of state and federal regulations has put the industry in this position, according to most spokesmen familiar with the growing need for training and certification.

Aside from the need for pragmatism foisted upon maintenance operators regarding training and certification, there is a growing understanding now within the industry of the public relations benefits from having in one's possession a certificate of training.

Though most maintenance operators nationwide don't have much in the way of systemized training, Dave Murphy, president of the Professional Lawn Care Association of Mid-America, feels that any person who supervises the maintenance of lawn and turf areas can only benefit from the ever-growing array of training and certification programs now offered. He, like many in the industry, cite both statutory clamps and professionalism, in addition to a need to change a sometimes negative attitude the public has toward maintenance operators.

"What we look for is a minimum standard of professionalism for all companies and employees," he said. "You can imagine the snake oil salesman of the old days. Well, today he is a pharmacist. And if someone thinks all it takes (to take care of lawns) is a hose, sprayer and a pickup truck, that's not training.

"A real professional has to

know safety, has to know what the lawn needs and how to take care of it. He has to know the chemicals, the laws. Most of the problems in the industry come from mistakes made by untrained personnel. If they were all professionally trained, mistakes would be eliminated and so would the justification for legislation that could damage our industry."

With this in mind, the PLCAMA has been offering a number of training and certification programs in the Kansas and Missouri territory.

Various statutes now affecting pest control operators, such as a 1987 Kansas Termite and Pest Control Association and Missouri Pest Control Association joint introduction of a law requiring the regulation of technicians in the industry, have worked well. Now the Depart-

ment of Agriculture has decided on these as models for lawn and tree maintenance operators in other states.

INDUSTRY COMRADERIE.

More than a dozen states currently enforce pre-notification and/or posting regulations of the maintenance industry.

Murphy and others in the training and certification field see much more to this than mere statutory coersion. The benefits of getting involved in a training and certification program included people all involved in the same business coming together in search of further knowledge, which promotes comraderie, pride and trust in the industry through unity.

Also, lawn maintenance professionals deal with chemicals that often make members of an unknowing public border on hysteria. If an image of professionalism, through training and certification can be used to backup the work of a maintenance operator, people can often change their perception.

As Murphy said, "you wouldn't expect to see a pharmacist in a T-shirt." Likewise, a training and certification program could inspire a grass cutter in jeans and a Gusto T-shirt to invest in a uniform. And if that uniformed professional can produce a certificate of, say, involvement in a three-week intensive training course in some specialized area, the whole relationship with the public shifts.

Murphy started his training and certification program a year and a half ago. This year alone his organization will certify about 50 people and re-certify about 100.

"We saw an educational need in our industry that was not be-



In this certification exam for landscape technicians, the applicants must show their skills in sod installation. Photo: CLCA.

LAWN DOCTOR MAY TAKE TRAINING PROGRAM TO THE PUBLIC

IN A FAST-GROWING, \$30 BILLION LAWN CARE Industry, Lawn Doctor — one of the largest franchises of its kind in the nation — sees both a need and a great potential market in training and certification programs.

Currently, Lawn Doctor has 270 franchises in 25 states and is constantly up-dating its program in accordance with the ever-changing regulations facing the industry.

"This is a very dynamic business," said David Jones, director of training for the Matawan, N.J.-based company. "It is constantly changing and needs updating. This is not your machine that punches out 15 widgets. There are too many variables."

Considering the variables, Lawn Doctor is now thinking about opening up its training program to the general public — non-Lawn Doctor operators. A slightly modified version of their current program, this proposed course offers generic agronomy and pesticide safety information about grasses, fertilizer, pest control and equipment safety, among other things. But not to give away any company secrets, the course will not share any marketing strategies proprietary to Lawn Doctor.

Jones said there is a need for much more training in the lawn care industry, and there is currently a paucity of trainers available. Also, because regulations vary widely around the country, the courses will touch on the indigenous regulatory controls. Across the board, though, this new course will deal with the posting and notification laws.

Lawn Doctor currently offers the training course for recertification credit to its franchisees in 15 states.

Though the proposed course offers more general information than the course Lawn Doctor employees take, it is still designed for operators with some experience. Jones said he would prefer a more experienced group, though anyone can learn from the course.

Jones said he would like to see some hands-on training in this new course, but most of the information will be in the classroom. The off-season schedule — December through March — will prohibit much hands on activities. Still, the course will have "the Lawn Doctor flavor," and will be taught by Lawn Doctor personnel.

"I am curious what kind of initial interest there is for it,"

Jones said. "We have to show that there is a need in the industry."

The course will also enable many lawn care technicians to become re-certified in some parts of the country, offering some credits for the classes taken.

While Lawn Doctor prepares its new course, Jones will be asking people in the industry about the feasibility of the program. Jones said he is now working up a price structure. The course could start as early as next year.

ing fulfilled. We saw laws and regulations coming our way that, as individuals, we could not fight, such as the posting and notification."

Thus, these training and certification programs also serve as lobbying tools for the industry to fight what many perceive as unfair state regulations. "We have been to Jefferson City to testify. We have had influence on different levels of government. We've sat in on councils," he said.

Why? Because, as any industry expert will tell you, if someone else is allowed to dictate the laws a particular industry lives by, "we can hardly sit and complain. We must have an effect on them before they affect us."

Murphy has become acutely aware of the media ability to create sweeping images. And so he has appeared often on TV and radio, and has met with environmental groups in an effort to make clear the facts of lawn and landscape maintenance.

If customers and environmentalists and the various nay-sayers who have an impacted resentment toward the lawn and landscape maintenance industry would see a typical training and certification syllabus, they might be quite surprised.

In February of this year, for example, the PLCAMA held a Lawn Management Plus Turf and Ornamental Certification Training Program, and it was far from a pep talk on the greening of America.

The first week had a text by an expert. Monday was growth and development of the grass plant from seed to maturity. Tuesday pounded the points home on the advantages and disadvantages of the grasses grown in the Kansas/Missouri area, and also honed in on soil components, types and characteristics. Wednesday was devoted to mowing, fertilization and aeration. Thursday had integrated pest management and the effects of pesticides on the environment, weed identification, diseases and nematodes. Friday offered insight into insect pests on turf and their life cycles. Then came a test to evaluate each attendant.

And that was just the first week.

IRRIGATION REGULATION.
The Irrigation Association has taken on a number of training and certification programs aimed at landscape irrigation installers, according to its President Bob Sears. This facet of the lawn

maintenance industry is growing tremendously. Ten years ago in Washington D.C., two companies installed irrigation systems. Now several pages of the Washington area Yellow Pages are devoted to these specialists. This, Sears said, holds true up and down the East Coast, from Nashville to Long Island.

As with other areas of lawn maintenance, programs for water surveyers and irrigation installers are important, expecially in drought areas. Sears foresees a time in the not too distant future when most states will require licenses for irrigation. Several states, such as Florida and New Jersey, now have pending legislation, and other states are contemplating statutes.

The Irrigation Association is now adding to its irrigation designer training program two new certification programs, one for installers and one for water manager specialists. These cover all states, and certify about 60 people in a given year. The association itself is made up of irrigation manufacturers, distributors, professional consultants and manufacturer representatives as well as universities involved in the lawn maintenance industry.

"Our certification program is not required in any state. It's simply a minimum statement that a person has completed objectives. It's a way for (installers) to market themselves. If they are looking for a job, it's one more accomplishment to point to. Ours is the only certification for irrigation designers that I'm aware of," said Mark Williams, director of communications for the Irrigation Association.

Sears said that the issue of protecting water supplies has prompted his association to launch an educational campaign to explain the benefits of proper irrigation.

"There are many more benefits derived from a green lawn than any perceived waste of water," he said. "This is not to say that some water is not being wasted, but people don't often know how often lawns need water. Ninety-nine percent of the cases there is overuse by 120 percent. They haven't learned how to use the system."

PARTICIPATION LACKING?
While interest in various training and certification programs is certainly growing, Allan Shulder, executive director of the Professional Grounds Management Society, sees a problem in getting people who need to know more about their industry into

an industry program. Ironically, those who need training the least are usually the ones showing up at the various training and certification programs.

"I don't think we've found a way to get people involved who need to be involved," he said. The PGMS has offered training and certification programs in grounds management since 1980, and they are rather novel in that one can do everything at home without traveling to take a test. There are strict qualifications to be met, and extensive testing. The programs are independent and not tied in with the states.

"The purpose is merely to show that a person who completes this is qualified in all aspects of grounds management." Shulder, like many leaders in the industry, believes that public relations is one goal, but looming regulations also inspire programs. "If we don't clean up our own home, the government starts stepping in. We'd like to keep the government out if we can."



Spray colorants aid experienced and new applicators alike in perfecting their spray patterns. Photo: Becker-Underwood.

Public perception of lawn maintenance operators, Shulder said, needs to be straightened out. "We've got so much bad press and negative public opinion." He noted that in Connecticut for example, only 9 percent of the pesticides used are by lawn maintenance people. The vast majority is used by homeowners. "I think most professionals are working to do a good job. Most of us are environmenta-

lists, and aware of how to use chemicals. You can't say the same thing about homeowners."

Shulder believes, through training and certification, the "fly by night" operators (though there will always be some) could begin to disappear.

Barry Troutman, director of education for the Professional Lawn Care Association of America, said there is "a strong need for continued education in several areas." Among them is the proper use of pesticides, which he believes makes training and certification within the industry important.

"In the next five or so years," he said, "the guy at the end of a hose will have to register with the government. It's going to get more complex, not easier."

Troutman sees a continual addition of people to the lawn maintenance industry, and with that will come the necessity to "keep the image high in the public eye."

And the public eye, as it becomes more focused by media scrutiny, will want to see the casually dressed lawn cutter in a pickup truck go the way of the snake oil salesman who preceded the profession of pharmacology. In the minds of most in the industry, training and certification is one of the answers.

— Michael Drexler.

Michief Brester.

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

HOW IMPORTANT IS TRAINING?

THE WEATHER HAS WARMED, THE GROUND HAS thawed and a bright green flush apears on the landscape. We dress up our staff and send them out into the world with high expectations, only to find they can't make a proper lawn diagnosis. After all, the last time they saw a live weed was months ago — is it back to square one?

Many companies spend a great deal of time, dollars and energy in training their staff only to discover that their staff has forgotten a great deal of what was learned. They therefore conclude they have wasted their time, dollars and energy in training. They are correct.

POOR TRAINING COST \$\$\$ — Poor training is costly and contributes to staff turnover, customer callbacks, EPA violations, equipment failure and breakdown, lost opportunities, poor customer service, customer turnover and poor to nonexistant profits.

Additionally, management becomes very discouraged regarding poor training if little of the training is retained. It is assumed that individuals and staff should know certain things simply because they were talked about and presented during spring training.

More often than not, management will cut training and become more bottom-line oriented, reverting to a directed and autocratic management style. This only further exacerbates the problems.

PRACTICE & FEEDBACK NEEDED. Occasionally, excellent training is given, but it is not followed up or reinforced by the company. If very few or limited opportunities for the applicator, office manager or staff to practice this new information are given, or feedback received, retention diminishes.

In either case, the training is not retained or remembered be-

cause of the lack of opportunities for practice and follow-up.

Statistics from educational research suggest that if a new idea is not practiced, or in any way reviewed within three weeks, there is up to a 97 percent loss in retention. I suggest that for many weak training programs, 97 percent of it is lost within three weeks.

NOT A ONE-SHOT DEAL. Training should be an ongoing organizational process, not an event. Training should:

- •Be ongoing throughout the year.
- ·Involve many staff members.
- ·Should frequently be reviewed.
- ·Be reinforced.

This is something the company must commit itself to if it is to be effective. This should be the responsibility of the company trainer even if your organization is only a five- or sixemployee company.

By training, you are actually building for the future. Without training, it is difficult to maintain competent employees who understand all they need to understand. Without training, you must hire people who have been trained elsewhere or who are already competent.

Most small lawn care companies are not in a position to be able to afford the higher salaries that go with competence. Your choices are:

- ·Train your people,
- •Hire competent people, or
- •Expect a lot of problems, such as listed before. Lawrence D. Kokkelenberg

The author works for the Center for Business Development. His article was adapted from a story originally appearing in ProSource, the official publication of the PLCAA.

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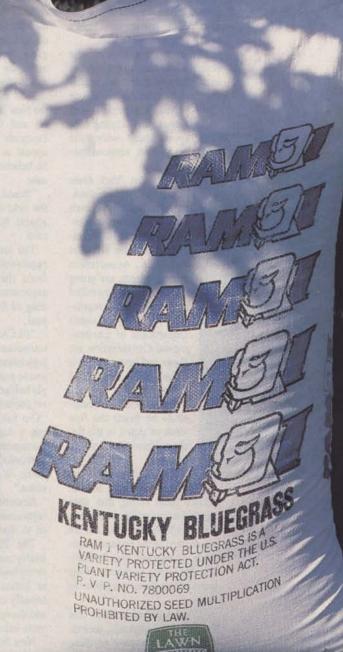
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Pesticide Applicators Continue Notification Battle

ESS THAN 50/50 ODDS in a federal court appeal is generally enough to make anyone cringe, particularly the group filing the appeal. That's not the case in New York.

The contingent backing the potentially precedent setting case in the lawn maintenance industry, and the masses on whose

> behalf the appeal is being waged, are running fullspeed ahead with their respective responsibilities.

> The New York State Turfgrass Association. the Professional Lawn Care Association, the Pesticide Public Policy Foundation and the National Arborist Association among others, are going full tilt to back their belief that notification regulations passed by the state's Department of Environmental Conservation are above and beyond what is called for by the federal government.

The appeal is scheduled to be heard the first week of April in the Second Circuit Court of Appeals.

The original lawsuit was shot down by a federal district court ruling that state regulations covering notification of pesticide applications are not pre-empted by the Federal Insecticide, Fungicide and Rodenticide Act — the backbone of the green industry's case against the

Although the federal court

judge ruled that "It cannot be said that Congress expressly prohibited the states from requiring such notification...or that the state law stands as an obstacle to the objectives of Congress," the FIFRA theory will remain the center of the appeal against the DEC.

Tom West, legal counsel for the New York State Green Council and the New York State Pesticide Coalition, said any appeal is an uphill battle, but he believes in the merits of the case.

"Based on the issues of law, the field is much more open on appeal. It can go either way," he said.

The group's fight against the regulations received a boost from the PLCAA when the association authorized the spending of \$10,000 toward the appeal.

"PLCAA is ready to challenge unreasonable regulation and legislation on a case by case basis and to put both dollars and people behind that fight," said Robert Parmley, PLCAA president. "Our mission is clear, we have put a high priority on issues management. New York could be a precedent setting case. If we fail there, it could move to other states."

Since bringing the case to trial, legal costs have already escalated to more then \$50,000.

The PLCAA has dedicated nearly one-third of its 1989 operating budget, or about \$375,000, to Issues Management which broadly covers legal challenges and the resources needed to promote information sharing.

New York's regulations were to take effect Jan. 1, but a courtordered injunction put them on hold until the matter could be settled in court. Among other things, the DEC regulations call for the:

 Posting of warning signs at 75-, 100- or 150-foot intervals, depending on the sign size.

•Signs must be 5½ by 8½, 8½ by 11 or 12 by 12 inches. The operator has a choice here — the larger the sign, the further apart they can be posted.

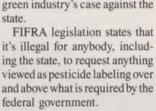
 Keep the signs posted for at least 24 hours.

In the meantime, maintenance operators in the state of New York are trying to curb confusion among applicators with moderate modifications to their business operations. And since the busy spring lawn care season already has operators hopping, each company has had to choose its best form of compliance.

Most of New York's pesticide applicators are complying with the 1987 state law governing application of pesticides. In fact, an overwhelming number are trying their hand at posting, customer contracts and some form of notification — albeit not to the letter of the proposed regulations.

Dave Sek, Monroe Tree and Lawntender, Rochester, N.Y., said his company is sending out prenotification, contracts and posting signs, but not as detailed as the new regulations would require.

For instance, Sek said, the company is still using old posting signs which don't measure up to the regulations in size or wording. Monroe Tree and Lawntender is also sending out customer contracts in the form of a booklet containing information on the types of substances which will be used on a customer's property and the approximate dates of application. The



(continued on page 34)

Illustration:

Nor-Am Chemical Company.

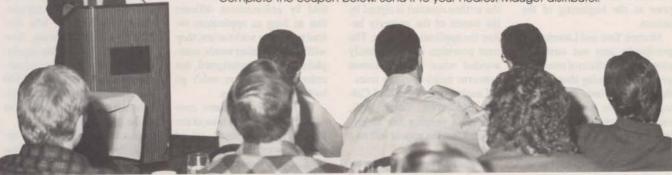
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BRINGING YOUR BUSINESS INTO COMPLIANCE

THE NEW YORK STATE TURFGRASS Association in conjunction with Tom West, Nixon, Hargrave, Devans and Doyle, are sponsoring a "pesticide alert" publication for the state's lawn maintenance operators.

The quarterly publication stems from member requests for an understanding of the complicated regulations and how they can best comply with them. West serves as legal counsel to the New York State Green Council and the New York State Pesticide Coalition.

Beth Seme, executive director of the NYSTA, said the first issue will address complying with the 1987 Lawn Care Bill and pesticide notification programs in the absence of regulations. Other subjects in the issue will include contract language and outlooks.

Subsequent issues will address transportation, disposal, storage and new laws.

If 100 people subscribe to the publication, the project will be initiated immediately. The cost is \$100 for NYSTA members and \$150 to nonmembers. The cost of a 1989 NYSTA membership is \$40.

Notification

(continued from page 32)

booklet is sent to each customer prior to the beginning of the season.

Monroe Tree and Lawntender previously sent out customer contracts in the form of renewals, generally receiving about a one-third response rate. The remaining customers were contacted via telemarketing. While the initial format hasn't changed, it's become more time consuming because the company has to continually remind customers to sign their contract and return it, according to Sek.

"The regulations are so complicated. If I had one customer I could comply with them, but with 5,000 (customers), there's no way in the world to comply," he said.

One area of conflict is notifying the customer of the date of an application. Although maintenance operators have no objections to notifying their customers of an approximate date — with a broad definition of approximate — the DEC is interpreting the regulations to call for the exact date of application, according to Sek

The regulations are also costly. Sek said he anticipates spending \$12,000 to \$18,000 on posting signs should the regulations go into effect. As a result, customers will have to pay a higher price for lawn care.

Don Burton of Lawn Medic in Bergen, N.Y., said his company is complying with the state's law and incorporating some of the regulations more easily adhered to into their business plan. Burton is most upset by regulations covering the period before a pesticide application can be made following an estimate.

The regulations state that a

business can enter into a contract with a customer to apply pesticides less than 48 hours prior to the application, only if the written contract is signed by the owner of the property before the application occurs. The time provision is not as easily avoided when the application concerns multi-dwelling units.

Laurie Broccolo of Ted Collins Associates, Victor, N.Y., said she's keeping her fingers crossed that the appeal will be a success.

"Idon't see how we can do any more than we're already doing," she said. "We have a hard enough time keeping up with our load now. There aren't enough comtotal 32,000 — 17,000 commercial applicators and 15,000 private applicators.

Broccolo said she has been told by enforcement officers that as long as applicators intend to comply with the law, they will be OK. In other words, complaints will be investigated, but enforcement officers won't go looking for violations.

Ted Collins Associates conducted a study at the time of the DEC's first proposed set of regulations and found that the cost of doing business would rise substantially — as much as 69 percent. Broccolo said customers will definitely see a significant increase if the regulations

tley recommends ordering only enough for first and second round applications.

"Unless you're really on top of it, the whole issue is very confusing," said Ottley, who also runs One Step Lawncare, New Chili, N.Y. Should the regulations go through, Ottley is looking at an increase of \$24 to \$30 per customer, per year. The increase represents the actual cost to the company.

In addition to the federal appeal, four state lawsuits opposing the notification regulations currently jam the docket of the New York Supreme Court, with a fifth to follow. The lawsuits have been filed by various groups including lawn maintenance, pest control, hotel/motel and the farm bureau.

While serving the same cause, the merits of the federal and state cases are completely different. The federal suit deals with strict interpretation of statutes passed on the federal level, namely the statute enabling the DEC to pass such regulations.

Jim Wilkinson, executive director for the 3PF, said it's important for the group to go ahead with its appeal because it's the only lawsuit challenging the 1987 statute which requires sign posting and customer contracts.

The state lawsuits challenge the procedural aspects of the regulations, including claims that the DEC exceeded its boundaries in passing the rules, the length of time it took the board to pass the regulations and the fact that the board didn't consider integrated pest management principles when forming the regulations. — Cindy Code

The author is Editor of ALA/ Maintenance magazine.

NOTICE

Persons are cautioned not to enter this property.

Pesticides have been applied

ON

AT

(Date)

(Time)

SIGN NOT TO BE REMOVED FOR 24 HOURS

(Pursuant to Environmental Conservation, Section 33-1003)

(Business, Name, Address, Logo)

plaints from customers to substantiate this."

Some local enforcement officers have suggested that the proposed DEC regulations cannot be uniformly enforced in a fair manner because of the small size of their staffs. They have also said the number of complaints registered don't justify the harsh regulations.

The DEC's pesticide bureau employs 57 people in nine regional offices across the state. Certified applicators in New York are set in place.

Many companies have already increased the cost of service from 5 percent to 15 percent.

The New York State Lawn Care Association is recommending that applicators require written contracts, supply customers with pesticide labels and post signs after applications, according to Bob Ottley, president. A 5½ by 8½ inch posting sign can be purchased through the association, but Ot-



Home lawn two months after overseeding with Turf-Seed ryegrass and bluegrass products.







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Perennial Ryegrasses Citation II • Birdie II • Omega II • Manhattan II • CBS II Blend • 246 • 2DD • 2HH 'Charger'

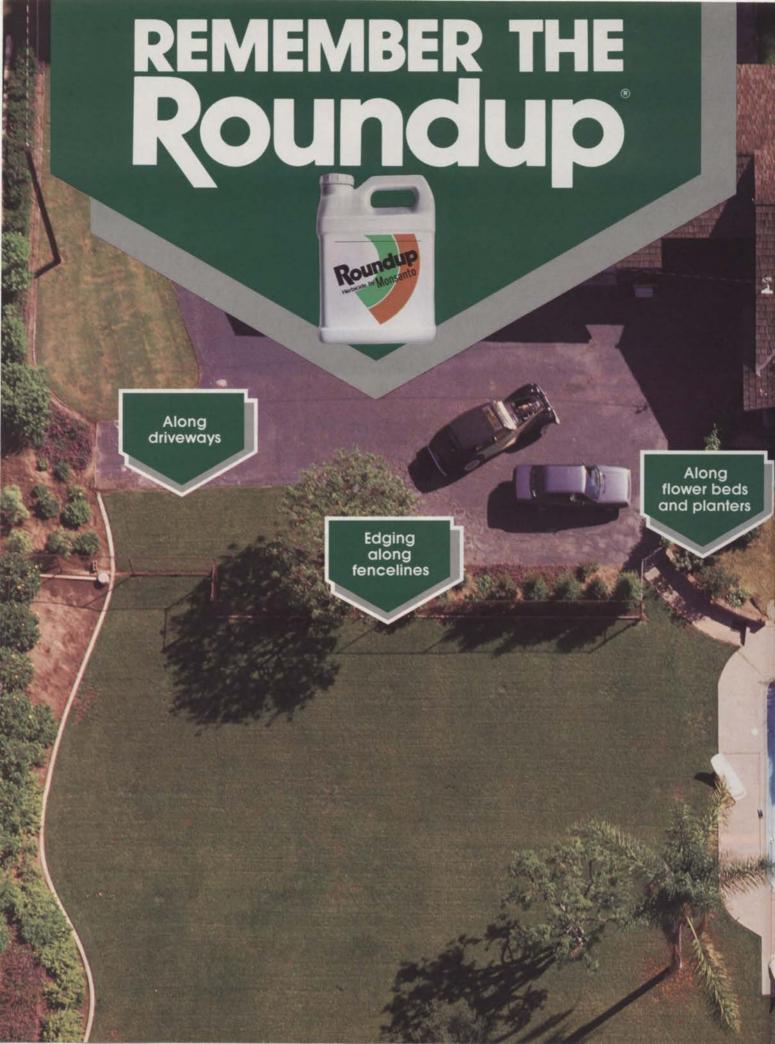


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What Path is the Mower Taking? Is Yours Keeping Pace?

PERFORMANCE SERviceability, maneuverability and quality will continue to lead the list of demands for mowing equipment in the future, but some new concerns have surfaced as well.

The effects of bagged grass clippings on the environment has led at least one company to develop machinery practically eliminating the need to pick up clippings. Alternative uses of clippings, such as for composting purposes, are also in the limited use stages. Growing concerns in the areas of noise and air pollution are also having an

effect on mower designs.

The mid-size walk-behind mowers, 36- and 48- inch, will continue to be strong sellers over the next several years. However, the industry will see the zero turning radius mowers emerge as a dominant mower for cutting, as will the compact highly maneuverable riders.

These are just some of the concerns and predictions mower manufacturers offered for the rapidly growing mowing maintenance industry.

As the industry trend toward full-service evolves, more and more lawn care operators will tackle the job of adding mowing to their service schedule because of homeowner desire to have one company service their landscape.

In a recent ALA/Maintenance survey, mowing was ranked among the top five expansion paths commercial applicators would take to increase their businesses.

As competition increases, reduced downtime will be even more important for profit maximization. As a result, many equipment manufacturers are building mowers with easy avenues to service points to ensure quick access to belt and lubrication areas. Manufacturers' parts and service support systems are also considered key in the mower buying decision.

While the industry is still considered to be "price conscious," many operators are beginning to realize the value of reducing downtime and buying the equipment which best fits their needs regardless of price, according to a variety of manufacturers.

The bottom line to any business stategy is profits. To achieve this goal, mowing equipment peformance is vital to productivity and customer satisfaction, ultimately leading to company profitability.

In addition, the rapid growth and acceptance of commercial walk-behind mowers is evidence of the demand for mid-size, 36-to 48-inch cutting widths, mowing equipment to cut and trim smaller areas.

Today's mowing industry features a variety of highly maneuverable outfront rotary riding mowers which increase performance and productivity.

"Maneuverability in today's operations is very important, as it allows operators to handle more acreage with less fatigue," said Ruthanne Stucky, marketing director for The Grasshopper Company.

The zero turning radius mowers, while increasing in popularity, are not yet widely accepted by the commercial cutter. But industry manufacturers hope to change that, according to Jeff Mack, manager of LESCO's equipment product line.

"Everybody's getting into the zero turning radius market," he said. "People (labor) are always the number one problem. As a result, the zero turning radius will come more in handy."

An already strong selling machine, the zero turning radius mower will demand even more attention in the future. This type of mower on high-performing machines offers versatility and speed on the open straight-away, Stucky said.

"A true zero turning radius unit will turn within its own length to greatly maximize maneuverability in tight spots and have counter-rotating drive wheels to prevent turf scuffing and damage common with un-

(continued on page 40)



Excel Hustler 400 equipped with Range Wing.



LESCO 52 Commercial mower.

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its that must lock one wheel to make sharp turns."

Outfront decks, combined with the zero turning radius feature, deliver even greater maneuverability with better visibility. Outfront decks float front-to-rear, independently of the tractor, to accommodate changes in terrain for a professional cut. Getting around and between obstacles, mowing under low hanging shrubs, mowing square corners and close trimming with precision, without significantly reducing operating/ mowing speed, are all important benefits in the best 1989 mowers, according to Stucky.

Building trends, including construction costs, land availability and home and office affordability also enters into the mowing picture.

"We see newly designed condominum apartments and office complexes as a primary example of the trend toward smaller areas and, subsequently, equipment to efficiently mow small areas," said Bob Walker, president of Walker Manufacturing. "The high initial cost of developed land and cost of maintaining green areas around new projects is creating a trend away from large turf areas and favors use of a larger number of small landscaped areas."

More homeowners, typically with yards covering one to three acres, are contracting with lawn maintenance companies as evidenced by the growth of commercial companies specializing in residential accounts.

"We believe compact highly maneuverable rider mowers will become more popular in these situations because a rider is about twice as fast as a walkbehind in job time," Walker said. "This is because of extreme quickness of maneuvering and by not being limited to the speed a man can walk for eight hours. The current popularity of walk-behinds can be viewed as an interim trend with the new mid-size rider capturing a good portion of the market once the productivity of this type machine has been introduced and demonstrated."

Walk-behinds will continue to hold a place in the industry regardless of the success of rid-



Walker GHS - built-in grass handling system.



Micro Mower MP135T

ing mowers.

"Every product has certain features which make them appealing to a certain market segment," Mack said. "Walk-behinds will continue to have their place because of their ability to get in business at a low cost."

Other products designed for specific uses include the Micro-Mower from the Micro-Mower Company. The arm mower is designed for a compact tractor—with a 15- to 25-h.p. range to a 19-to 30-h.p. range. Applications include mowing both sides of guardrails at one time and maintaining areas larger units can't get into.

Two slope mowers from N-R Industries are designed for highway and interstate mowing. The machines, the Runner and the Scamper, are full tilt tractors to tilt both engine and operator cap to 30 to 35 degrees respectively.

Because the tractor leans into the hillside, total tractor weight is redistributed toward the uphill wheels. The weight distribution allows the mower to hug the slopes, reducing slipping and sliding which naturally occur with conventional tractors with towed mowing decks.

Catching and disposing of grass clippings is a growing requirement for maintenance of small turf areas because it eliminates clippings on sidewalks and driveways, particularly in high visibility areas.

Excel Industries has developed a revolutionary new rotary deck that shreds grass clippings to the point of eliminating pickup. In turn, it reduces the amount of bagged clippings destined for the county landfill.

"And as more municipal landfills restrict the dumping of grass clippings and leaves, we will see more mulching mowers and more composting businesses," said Jeffrey Howard, product analyst for Ford New Holland Inc.

Bunton Co. is among manufacturers offering mulching mowers as well as a variety of mid-sized turf mowers. The mulching mower has a three blade mower which clips the grass blade cleanly and then mulches the clippings before dropping them at the rear of the mower.

This article has served as a general overview to the dynamic mowing maintenance industry, mentioning a wide range of mowers and mower uses, However, there's still a much larger story to tell.

Look for more information on product offerings, parts availability and innovative developments on these pages in future issues of ALA/Maintenance magazine. — Cindy Code

The author is Editor of ALA/ Maintenance magazine.

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Green Industry Outlook Spurs Herbicide Development

HE TREMENDOUS growth in the green industry over the past 10 years along with the relative stagnation in traditional row crop agriculture has caused the agricultural chemical industry to focus on the turf industry as an area for new

The result of this focus is the development and testing of many potential herbicides for the turf industry. This article will bring you up-to-date with herbicide products that have recently been released or are in the final stages of testing for the turf market.

CLASSIFICATIONS. Herbicides can be grouped by several different categories including chemical family, mode of action, selectivity, etc. For this discussion, herbicides can be conveniently grouped by selectivity (Table 1).

Non-selective herbicides, e.g.

glyphosate, kill all vegetation and therefore have limited uses in turf weed control. Uses of non-selective herbicides include spottreating weeds that can't be controlled with selective herbicides and edging around sidewalks and trees. The most commonly used herbicides are selective herbicides which eradicate weeds without injuring the turf.

Selective herbicides can be further divided into those that control either broadleaf weeds or grassy weeds. Within each weed type, the type of herbicidal action further divides the commonly used herbicides. Thus, preemergence herbicides work by killing the germinating weed seed, whereas postemergence herbicides work by killing the established weed. As can be seen in Table 1, most of our herbicide choices fall into two categories, postemergence broadleaf and preemergence grass herbicides.

The most expensive portion of a turf weed control program is the use of a preemergence herbicide. Most lawn maintenance operators are concerned about the price and performance of the available preemergence herbicides and spend considerable time and effort to choose the correct preemergence for their ope-

For many years there were only a handful of preemergence herbicides to choose from and in the cool season grasses benefin, bensulide and DCPA were the primary choices. Oxadiazon generally gives the best control of goosegrass (Eleusine indica) and is used extensively on warmseason grasses and in the transition zone where goosegrass is a problem.

While not known for seasonlong crabgrass control, siduron is the only preemergence herbicide that will not kill germinating turfgrass seeds. Thus, siduron is often used for spring turf seedings to eliminate annual grass competition or on turfs that are overseeded regularly such as athletic fields or golf course tees.

Because of the growth of the lawn maintenance industry, several new preemergence herbicides have been introduced in the last several years. The two newest products are pendimethalin and a combination of benefin plus trifluralin (2/1 ratio, respectively). Both of these products are dinitroaniline herbicides which give economical crabgrass

Pendimethalin seems to have done particularly well, capturing a large share of the marketplace in just the last four years.

Pendimethalin provides a fairly long period of control with use rates between 1.5 and 3.0 pounds AI/A. Caution should be used at

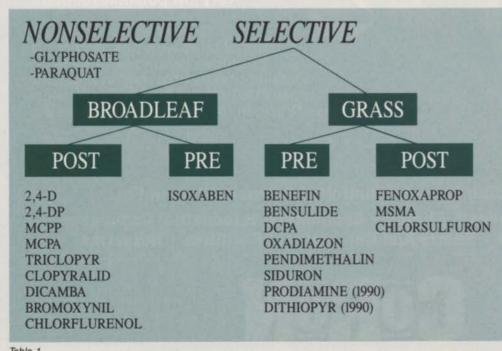




Illustration: Ciba-Geigy Turf and Ornamental Products.

the higher rates because Street and Koski (3) at Ohio State University have observed that some Kentucky bluegrass varieties can be injured at the 3.0 pound AI/A of pendimethalin.

The combination product of benefin plus trifluralin was developed to provide superior residual control as compared to benefin alone. Benefin, when used alone, always requires two applications spaced 45 to 60 days apart to provide seasonlong grass control. Trifluralin has a longer soil residual, but is too phytotoxic to be used by itself on turf. By combining the two products the effective period of control is lengthened providing a better grass herbicide.

By 1990, two new preemergence herbicides should be in the marketplace, giving maintenance operators an opportunity to re-evaluate and rethink their preemergence program. Prodiamine, a new dinitroaniline herbicide, has shown excellent preemergence properties in university testing. Use rates of between 0.5 to 0.75 pounds AI/A should give season-long grass control. In fact, this herbicide has been effectively used in fall applications which give crabgrass control the next spring and summer. A potential drawback of this herbicide is that it may not control some of the summer annual broadleaf weeds such as oxalis and spurge, as does pendimethalin, DCPA and benefin plus trifluralin.

Another new preemergence herbicide which should be labeled for use in 1990 is dithiopyr. This herbicide is a preemergence product providing season-long crabgrass control with rates of 3/8 to ½ pound AI/A. This compound also has significant postemergence grass activity. Data shows that on young, single tiller crabgrass, dithiopyr provides very good postemergence control.

Of the other preemergence herbicides tested, only pendimethalin shows any postemergence activity, although the postemergence activity of pendimethalin is rather weak. Dithiopyr has another advantage in that its margin of safety to turfgrasses is fairly high. Thus, a two- to three-time application rate will not cause injury to Kentucky bluegrass, perennial ryegrass, tall fescue or creeping bentgrass.

Particularly interesting is the creeping bentgrass which is normally sensitive to many types of herbicides. In many older, metropolitan areas, bentgrass often can be found in large amounts in home lawns. Selecting a preemergence herbicide which does not injure the bentgrass has often limited the available choices to one or two herbicides. Dithiopyr appears to have much better safety on bentgrass than many preemergence herbicides. Results on fine fescues have shown some injury on certain cultivars.

ROOT INJURY. The biggest con-

cern in using preemergence herbicides is whether they reduce rooting of turf. From row crop research, the dinitroaniline (DNA) herbicides have been classified as "root pruning" herbicides. The potential for the DNA herbicides and other preemergence herbicides to reduce rooting has been a concern for many lawn maintenance operators.

Turf researchers have studied this area extensively, but have been unable to draw definite conclusions. Studies in greenhouses and laboratories have often yielded data depicting serious root reduction by preemergence herbicides. Studies in field situations have been less clear cut. Reicher and Christians (2) at Iowa State University studied the effects of the commonly used preemergence herbicides on rooting of Kentucky bluegrass at two locations for three years.

The locations consisted of a high maintenance bluegrass turf, i.e. irrigated with good fertility, vs. a low maintenance turf, i.e. no irrigation and low fertility. The herbicides included in the study were pendimethalin, DCPA,

benefin, oxadiazon and benesulide. The only decrease in rooting observed throughout the entire study was in the low maintenance turf from a pendimethalin application in one of the three years tested. No other treatment gave any root damage. In contrast to this study Dernoeden et al. (1) reported that pendimethalin at 3.0 pound AI/A and prodiamine at 0.5, 1.0 and 2.0 pounds AI/A all reduced the root weight of a perennial ryegrass turf in Maryland.

The root weights were determined in May of 1987 after three

successive herbicide treatments in April and September of 1986 and April of 1987. Thus, the question of root injury from preemergence herbicides is still unclear. The potential for root injury has been determined. however, the environmental and soil conditions likely to lead to root injury have not been adequately determined. Maintenance professionals should be particularly observant of the turf under their care and watch for evidence of root injury from preemergence herbicides. This is best accomplished by using some lawns as test areas where different herbicides can be used and the quality of these lawns vs. other lawns can be compared.

BROADLEAF HERBICIDES.

Registration of the preemergence broadleaf herbicide isoxaben for use on turf is expected soon from the Environmental Protection Agency. This is really a whole new class of herbicides for use on turf. In the past, some herbicides such as pendimethalin and DCPA have shown some preemergence activity on a narrow range of broadleaf weeds, such as oxalis and spurge, but isoxaben is the first broad spectrum preemergence broadleaf herbicide on the market.

Isoxaben has no postemergence broadleaf activity, but controls a broad spectrum of germinating broadleaf weeds. Data on broadleaf weed control shows excellent activity on most broadleaf weeds with the preferred application timing in the fall to control fall germinating weeds such as common chickweed or henbit, and carryover of the herbicide to provide control of the spring germinating weeds. Unfortunately, one weed that tends to escape, or at least needs higher rates for control, is dandelion. The labeled rate range will be in the 0.5 to 0.75 pounds AI/A whereas dandelion suppression will not occur without application rates of 1.0 to 1.5 pounds AI/A.

Postemergence broadleaf herbicide combination products are extremely inexpensive and very effective. The main market for isoxaben may be in the nursery and container-grown ornamentals industry where isoxaben can be combined with an effective preemergence grass herbicide to pro-

(continued on page 46)

INJURY RATINGS/KENTUCKY BLUEGRASS CULTIVARS

| CULTIVAR | RATE | 1986 RATINGS* | 1987 RATINGS |
|--------------------------|----------|---------------|--------------|
| | (lbs./A) | 2WAT* | 2WAT |
| Enmundi | 0.12 | 9.0 | 9.0 |
| | 0.25 | 9.0 | 9.0 |
| | 0.00 | 9.0 | 9.0 |
| Cello | 0.12 | 9.0 | 9.0 |
| | 0.25 | 8.7 | 8.7 |
| | 0.00 | 9.0 | 9.0 |
| Sydsport | 0.12 | 9.0 | 9.0 |
| | 0.25 | 8.3 | 8.7 |
| | 0.00 | 9.0 | 9.0 |
| Cheri | 0.12 | 9.0 | 8.7 |
| | 0.25 | 7.7 | 8.7 |
| | 0.00 | 9.0 | 9.0 |
| Fylking | 0.12 | 9.0 | 8.7 |
| | 0.25 | 8.3 | 8.7 |
| | 0.00 | 8.7 | 9.0 |
| Kenblue | 0.12 | 7.7 | 8.3 |
| | 0.25 | 6.3 | 8.0 |
| | 0.00 | 8.7 | 9.0 |
| Ram-1 | 0.12 | 7.3 | 8.7 |
| | 0.25 | 6.7 | 7.3 |
| | 0.00 | 9.0 | 9.0 |
| Barblue | 0.12 | 7.3 | 8.0 |
| | 0.25 | 6.3 | 7.0 |
| | 0.00 | 8.7 | 9.0 |
| Touchdown | 0.12 | 7.7 | 7.7 |
| | 0.25 | 6.3 | 6.7 |
| | 0.00 | 9.0 | 9.0 |
| America | 0.12 | 7.3 | 7.7 |
| | 0.25 | 5.3 | 6.0 |
| | 0.00 | 9.0 | 9.0 |
| ^y LSD (0.05)= | | 0.8 | 0.6 |
| ^z LSD (0.05)= | | 0.7 | 0.6 |

V Herbicide treatments applied on 11 June 1986 and 1 July 1987.

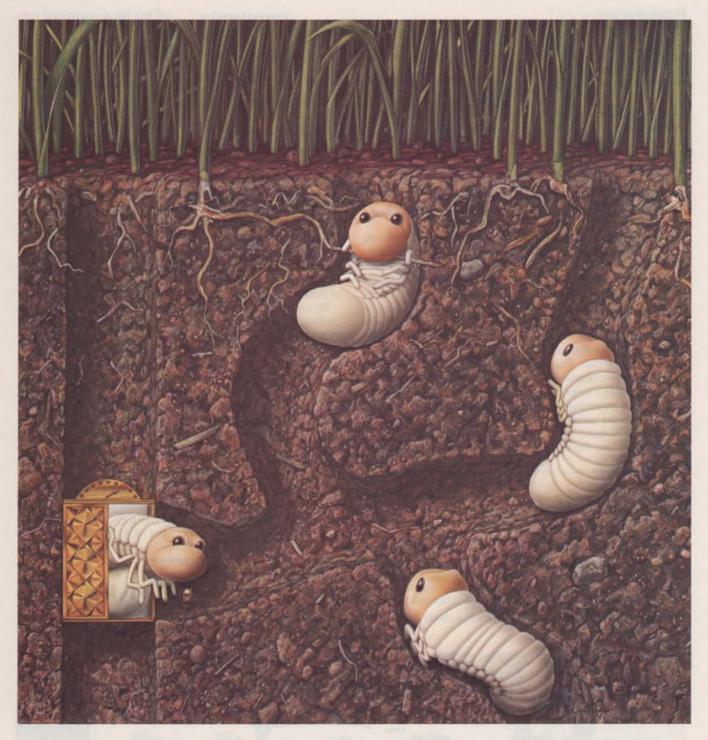
Table 2. Injury ratings for Kentucky Bluegrass Cultivar study treated with Fenoxaprop-ethyl during 1986 and 1987. Hancock Turgrass Research Center, E. Lansing, Mich.

w Rated visually on a scale of 9 to 1: 9 = No Injury, 1 = Dead. Above 6.0 = Acceptable.

^{*} WAT = Weeks after fenoxaprop-ethyl treatment.

y LSD comparing two Kentucky bluegrass cultivars at one fenoxaprop-ethyl rate.

² LSD comparing two fenoxaprop-ethyl rates within one Kentucky bluegrass cultivar.



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Preemergence (continued from page 44)

vide total weed control. One niche for isoxaben might be in environmentally sensitive areas because most all of the commonly used postemergence herbicides are organic acids which tend to be prone to leaching. Preemerence herbicides generally have a minimal tendency to leach.

POSTEMERGENCE GRASS HERBICIDES. The use of postemergence grass herbicides in lawn maintenance was fairly negligible until 1987. Prior to that time the only registered postemergence grass herbicide was MSMA and variants of the active ingredient such as DSMA, CMA or AMA.

These herbicides generally required at least two applications spaced 10 to 14 days apart to provide effective crabgrass control. Thus, MSMA never really fit into a lawn maintenance program because the timing of applications didn't match the normal round structure. The MSMA

The use of postemergence grass herbicides in lawn maintenance was fairly negligible until 1987.

Before then there was MSMA and variants of the active ingredient.

type herbicides also were touchy to use as phytotoxicity could occur if the application rate was exceeded or if environmental conditions favored injury.

In 1987 a new herbicide, fenoxaprop, was introduced to the industry. Fenoxaprop is an effective postemergence grass herbicide generally giving excellent control of crabgrass up to four tillers in size with one application. Fenoxaprop has some disadvantages, but is an excellent herbicide for controlling crabgrass. The primary drawback associated with fenoxaprop is its tendency to injure bluegrasses with late spring applications (i.e. June applications in Michigan).

However, experiments per-

formed in Michigan in 1986 and 1987 showed that the sensitivity of bluegrass cultivars varied. Certain cultivars of bluegrass such as America, Touchdown, Glade and Ram-l are fairly susceptible to injury from fenoxaprop while varieties such as Enmundi, Sydsport, Cheri and A-34 are tolerant of fenoxaprop applications.

We don't understand the basis for these differences in tolerance which could be related to many actors such as differential uptake (leaf absorption) of fenoxaprop, differential metabolism of fenoxaprop, different leaf morphology which could affect spray droplet retention, etc. But the injury will occur to varying degrees depending upon rate of fenoxaprop us-

ed and the environmental con-

Injury can often be seen as a distinct growth regulation with a dullish tan color to the turf. Genrally, the maximum turf injury will be seen at two weeks after application and will disappear between three and four weeks after application.

Studies have also shown that fenoxaprop's action is antagonized by several common broadleaf herbicides, with 2,4-D being the most strongly antagonistic. Our research has indicated that the broadleaf herbicides MCPP and chlorfluenol cause no antagonism under any conditions while dicamba, triclopyr and clopyralid caused slight antagonism which was only evident when trying to control large tillered crabgrass. These herbicides can be safely used when broadleaf and grass control mixes are desired. Do not use 2,4-D in combination with fenaprop.

Another new herbicide that could be in the market by 1991 is called quinchlorac. This is a

(continued on page 48)

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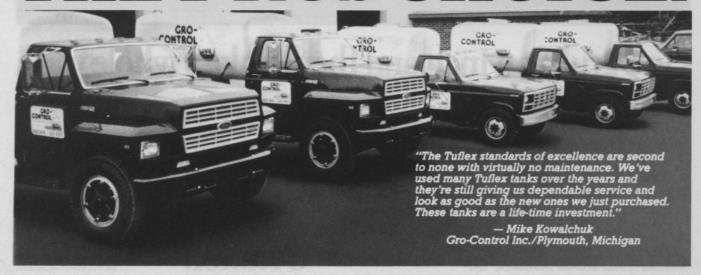
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Preemergence (continued from page 46)

very interesting herbicide because it really fits into several classifications. This herbicide can control annual grasses both pre and postemergently and has a good spectrum of broadleaf weeds controlled. Since this herbicide is farther away from the marketplace, I won't spend any more space on it, because a good proportion of herbicides under development never make it to market.

Another new speciality use herbicide is called chlorsulfuron. This product has a narrow. but important niche in the turf weed control market. It selectively controls tall fescue in Kentucky bluegrass and fine fescue lawns. Tall fescue and also perennial ryegrass will be injured or eradicated by this herbicide. Tall fescue is often a serious weed problem in home lawns because its bunch type growth habit and coarse leaf blades make it very objectionable in high quality turf.

POSTEMERGENCE BROAD-LEAF HERBICIDES. Postemergence broadleaf herbicides are widely used in the industry to control weeds such as dandelion, white clover, plantains, etc. The dominant chemical has always been 2,4-D. It has an excellent spectrum of control, is cheap to manufacture and mixes well with other herbicides increasing the spectrum of control and efficacy.

A study out of Kansas which was published in 1986, linked the use of 2.4-D with an increase in the rate of non-Hodgkin's lymphoma. The study was widely criticized for its technique of data collection and the accuracy of its results. Because of the study, the EPA initiated a review of all the toxicological data and basically gave 2,4-D a clean bill of health. However, several other states have begun similar studies of 2,4-D use and cancer. Also, the National Cancer Institute is currently conducting a study of ChemLawn employees to determine cancer risk to these employees.

The detailed company records on herbicides used and amount

of use will make this a very valuable study. The results of these studies will likely determine the regulatory fate of 2,4-D. If 2,4-D is found not to be a cancer risk, it is difficult to imagine other herbicides replacing 2,4-D simply because of its low cost and good efficacy. However, should 2,4-D be removed from the marketplace, then the broadleaf weed control market will change dramatically.

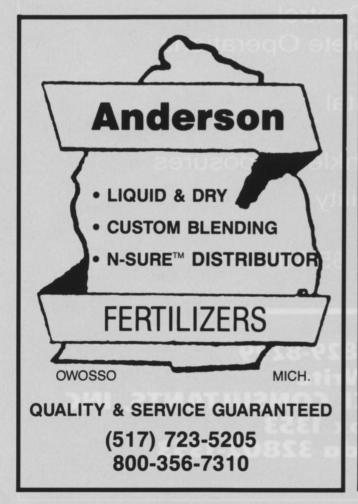
One new herbicide product which appears to be on the way to the market is a combination of triclopyr and a new herbicide called clopyralid. Label use rates will be in the range of 3/8 pound AI/A or triclopyr plus 1/8 pound AI/A of clopyralid. This is a non-phenoxy herbicide product which has shown good control of a wide range of broadleaf weeds. The only question with this product will be can it compete in price with the 2,4-D based products.

In summary, there are a lot of new herbicides that are or will shortly be available for use in turf. Lawn maintenance professionals will need to evaluate these products to see if they fit into their particular programs and operations. University trials should be important in assessing the usefulness of these new products. — Bruce Branham

The author is assistant professor of Crop and Soil Sciences, Michigan State University, East Lansing, Mich.

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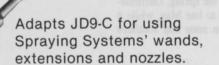
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Maintenance practices such as mowing too low, overirrigation, overfertilization, using unnecessary heavy machinery and miss-timed aeration can result in stress conditions that encourage weed infestations. A good management program with both cultural and chemical control will help reduce these stress factors.

A successful management program for turfgrass results from an integration of a recommended cultural practice and a complete weed control program. An effective weed control program uses

judicious use of herbicides when necessary.

Producing a dense, healthy stand of turfgrass is one way to control annual grassy weeds and other broadleaf weeds. The proper mowing height and frequency, fertilization and irrigation are part of the management program and should be practiced throughout the growing season.

The most common annual grassy weeds include large crabgrass, small crabgrass, yellow foxtail, green foxtail, fall panicum, barnyardgrass, goosegrass and annual bluegrass. Crabgrass and goosegrass are the most troublesome weeds in turf.

Turfgrass managers should be familiar with the following steps for a successful weed control program: (a) Knowing the specific weed problems, grassy weeds vs. broadleaf weeds, and the life cycle of the weeds, annual vs. perennial; (b) Selection of the right herbicide: in relation to effective weed control and turfgrass tolerance.

HOW DOES IT WORK? The preemergence herbicides are directly applied to the turfgrass. These herbicides act by creating a chemical barrier at the soil surface prior to seed germination. The herbicides should be watered-in so that the chemical can reach the soil surface forming a barrier. This barrier prevents crabgrass seedlings from emerging and developing normally.

Annual grassy weed germination is related to soil temperature. When the soil temperature reaches 65 degrees Fahrenheit for a week, grasses begin to germinate. The peak germination period varies with the local conditions of soil type, rainfall and weather in the spring. Germination in northern regions generally begins mid to late May, while it can occur as early as March in the transition zone and southern regions.

APPLICATION TIMING. Timing is very important for herbicide application. The key point is that preemergence herbicides need to be applied before grasses germinate in the spring. Treatments made too late (i.e. after germination) will not control emerged grassy weeds. If application timing does not coincide with the normal germination period of annual grassy weeds, weed control results may be erratic or poor.

In general, preemergence herbicides should be applied one to two weeks prior to the expected weed seed germination period. Therefore, the application dates of preemergence herbicides will vary from one part of the country to another. Remember the following steps:

The key point is that preemergence herbicides need to be applied before grasses germinate in the spring.



•Apply at the recommended rate.

- •The best time to apply is one to two weeks prior to crabgrass seed germination.
- •Repeat applications may be necessary to control crabgrass in the transition zone or in southern regions.

RESIDUAL WEED CONTROL. A complete weed control program aims for controlling weeds for the entire growing season. Season-long control of weed species is dependent upon the activity and longevity of the herbicide in use. Longevity again is based upon the chemical group. Some herbicides may last only four to six weeks, while others may provide 12 to 16 weeks from the time of application (Figure 1). Oxadiazon, pendimethalin, bensulide and a combination of benefin and trifluralin provide long residual weed control, while benefin is of short residual type. On the other hand, DCPA is an intermediate type.

Turfgrass managers should keep in mind that soil residual ac-

An example of a preemergent herbicide controlling germinating weeds and grasses through the shoot. Illustration: Ciba-Geigy Turf and Ornamental Products.

tivity is also dependent upon the rate of herbicide being used. The higher the rate of application, the longer the residual control is over the growing season.

Initial application rates determine the concentration in the soil for preemergence activity. It must maintain a critical soil residue level during the growing season for season-long weed control. Turfgrass managers should keep in mind that applications made early in the season may break down in the soil to areas below the threshold level.

When this occurs, one can expect less than desirable control following late germinating weeds. Repeat applications of certain herbicides (short-residual type) may be made 10 to 12 weeks after the initial application for continued control of late germinating weeds over the entire season.

TURFGRASS TOLERANCE. Turfgrass species vary in their tolerance to preemergence herbicides. Siduron is the only preemergence herbicide that is recommended for newly seeded turfgrass. All other preemergence herbicides are recommended for use on established fine fescues. Kentucky bluegrasses, perennial ryegrasses and tall fescues.

However, bensulide and DCPA can be applied in the spring following a fall seeding of cool season turfgrasses. Warm season grasses include bermudagrass, centipedegrass. St. Augustinegrass, zoysiagrass and bahiagrass.

RESEEDING TIME. The time for reseeding is very important in relation to the application date of preemergence herbicides. In general, preemergence herbicides persist in the soil for a length of time, allowing seasonlong weed control. Reseeding intervals are dependent upon the herbicide and dosage used. For example, reseeding should

be delayed at least six weeks after an application of pendimethalin at the lower end of the recommended rate (1.5 pound/A). However, when using the highest recommended rate (3.0 pound/A), reseeding should be delayed 12 to 16 weeks after the application. Remember to follow proper cultural practices such as soil cultivation, irrigation and fertilization when reseeding.

PREEMERGENT ACTION. The preemergence weed control program has been a popular and very convenient program for golf course managers and maintenance professionals. The primary preemergence herbicides for grassy weed control in cool season grasses are bensulide, benefin, DCPA, oxadiazon, pendimethalin and siduron. In addition to these herbicides, napropamide and oryzaline are recommended for use in warm season grasses.

For the last five years, the marketplace has been extremely competitive for several preemergence herbicides. Based on the performance and other features such as broad-spectrum weed

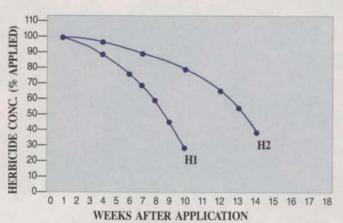


Figure 1. Soil degradation curves for two preemergence herbicides: H1 = short-lived and H2 = long-lived herbicides, respectively.





control, some of the newer compounds have also gained a strong position in the market.

For example bensulide, a good preemergence herbicide used frequently by maintenance professionals, has developed some performance difficulties in the New England area. Consequently, many Northeastern maintenance professionals switched to pendimethalin for preemergence weed control.

At present, dinitroaniline herbicides, characterized by strong yellow color, are the major preemergence herbicides. This class includes benefin, trifluralin, pendimethalin, oryzalin and prodiamine (expected soon in the market).

Benefin, a premix combination of benefin and trifluralin (Team), DCPA, bensulide, pendimethalin and oxadiazon, control green foxtail, yellow foxtail, smooth crabgrass, large crabgrass and other germinating grassy weeds. DCPA is also effective in controlling common chickweed, carpetweed and common purslane.



Photo 1. Season-long preemergence control of large crabgrass with pendimethalin (left) at 1.5 pound/A rate compared to the untreated check (right) at the University of Massachusetts Turfgrass Research Center, South Deerfield. Photo taken 12 weeks after application.

In addition, pendimethalin controls goosegrass, barnyardgrass, fall panicum and some annual broadleaf weeds such as hop clover, yellow wood sorrel and prostrate spurge. Pendimethalin applied during the late summer to early fall can control common chickweed, mouseear chickweed and henbit. Repeat applications at the recommended rate eight weeks after the initial application may prevent goosegrass and heavy infestations of spurge.

Oryzalin controls crabgrasses, foxtail, goosegrass, chickweed, henbit and other species. It is primarily used for weed control in warm season grasses.

Oxadiazon controls hop clover, prostrate spurge and speedwell. Oxadiazon is more effective in goosegrass control than DCPA. Pendimethalin and DCPA control prostrate spurge, while benefin and bensulide are ineffective in controlling this weed. Prodiamine, a promising new preemergence herbicide, is expected to be in the market in the near future. It is very effective in controlling most annual grassy weeds such as crabgrass, goosegrass, bluegrass and several broadleaf weeds. It provides long residual control of weeds.

In summary, a successful preemergence weed control program results from selecting the right herbicide and applying it uniformly at the proper time and appropriate dosage. The herbicide selection is dependent upon the weeds to be controlled and the turfgrass to be treated. Choose the most effective herbicide with maximum safety to the turfgrass. For crabgrass and other grassy weed control, maintenance professionals should emphasize a preemergence herbicide program along with a good cultural program. — Prasanta C. Bhowmik

The author is an associate professor of weed science at the University of Massachusetts, Amherst, Mass.

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Originally the indus-

that core cultivation

try was concerned

would make holes

in the herbicide

blanket.

Core Cultivation Effects After Preemergent Applications

NE OF THE MOST important tools in the weed control programs of the majority of lawn maintenance operators is the use of preemergence herbicides.

These herbicides, including pendimethalin, DCPA, benefin, benefin/trifluralin mixes, oxa-

diazon, bensulide and siduron, provide control of seedling annual grassy weeds, as well as some broadleaf weeds. Failure of spring applications to provide adequate weed control can result in timeconsuming and costly callbacks, or even customer loss.

To reduce the chances of poor performance, maintenance operators generally strive to apply these products uniformly at recommended rates, and comfortably before weed seed germination is expected. One safeguard against reduced efficacy, suggested by manufacturers' label directions, is to avoid core cultivation, vertical mowing or other disturbances of the turf *following* application of preemergence herbicides.

These operations, used for thatch management and compaction reduction, are becoming an increasingly important component of most maintenance operators' turf management programs.

It is recommended that these procedures be performed during spring and/or fall (cooler, moister periods) because they can result in unacceptable levels of heat-and drought-related turf damage when performed during the summer months. The time-consuming aspect of these cultivation procedures makes it difficult for most maintenance operators to perform them during the early spring, before preemer-

gence herbicides are applied.

Although both chemical manufacturers and university turf specialists have stated for years that post-applicator core cultivation could disrupt the preemergent herbicide "blanket" at the turf/soil interface, no research had been done to confirm this opinion. Recent studies by Bruce Branham and Paul Rieke (Michigan State University), B. J. Johnson (University of Georgia) and the authors of this article (The Ohio State University) have addressed this concern.

WHY THE CONCERN? In order to understand why there has been concern about post-application cultivation procedures, the concept of how a preemergence herbicide works must be reviewed. Acceptable performance of preemergence herbicides, besides optimal application timing and efficacious use rates, is dependent on uniform coverage. A herbicide blanket will result from proper application (Photo 1).

Weed seedlings that are growing beneath, within or above this blanket will absorb the chemical through their roots and/or shoots and be killed. The concern with core cultivation was that "holes" made in this herbicide blanket would provide an avenue for weed seedlings to grow and not be affected by the herbicide. To avoid the possibility of this occurring, it was recommended that any cultivation procedures be carried out before preemergence products were applied. Interestingly, little research had been conducted to test the validity of this assumption.

TESTING THE ASSUMPTION. In early May of 1987, a study (continued on page 56)

RELATIONSHIP OF THE ACTIVE PRE-EMERGENT HERBICIDE ZONE,
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Photo 1. Preemergence herbicides form a "blanket" on the turf surface that kills grass seedlings which grow into contact with it.

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Core Cultivation (continued from page 54)

was started at The Ohio State University to examine the effects of post application core cultivation on the efficacy of five commonly used commercially available preemergence herbicides. Those products, with application rates, included the following:

Dacthal 75WP (10.5 pounds

.............

Turf overseeded with large and small crabgrass and a non-treated control was studied.

a.i./acre), Balan 2.5G (2.0 pounds a.i./acre), Team 2G (2.0 pounds a.i./acre), Scotts Weedgrass Control with pendimethalin 1.7G (1.5 pounds a.i./acre), and

PreM 60 DG (1.5 pounds a.i./acre).

The study, which had been overseeded with both large and small crabgrass (one pound per 1,000 ft² of each), also contained a non-treated control. Each treatment was replicated three times.

The core cultivation treatments involved coring with a Ryan Greensaire at five days (May 11), 20 days (May 26) and 40 days (June 15) after herbicide application, as well as a noncored treatment. The cultivating machine was passed over the plots three times and the cores were not removed from the turf. The study was irrigated frequently to aid in incorporation of the soil from the cores, as well as to encourage crabgrass seed germination and seedling growth.

RESULTS. All herbicides provided excellent control (94 percent to 99 percent) of crabgrass, and did not differ significantly in that respect. Similarly, core cultivation performed at any of the three dates had no adverse



Photo 2. Photo of study (Aug. 1) which shows crabgrass control by Balan (left, top-to-bottom strip), Team (middle strip) and untreated control (right strip). Coring treatments (left-to-right strips) are: five days after application (bottom strip), no coring (second from bottom), 20 days after application (third from bottom) and 40 days after application (top strip).

effect on the efficacy of the preemergence herbicides used in this study (Photo 2). In the nontreated control, there was no apparent increase in crabgrass infestation resulting from any of the core cultivation treatments.

These results agree with those of Branham and Rieke, Michigan State, who concluded that cultivation operations (core cultivation or vertical mowing) could be performed following preemergence herbicide application, without reducing the efficacy of those herbicides. Similarly, Johnson, University of Georgia, found that a single core cultivation following application of oxadiazon did not reduce goosegrass control on putting green turf.

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VAUGHAN'S SEED CO. Bound Brook, NJ 08805 Downers Grove, IL 60515 CONCLUSIONS. It is apparent that, on a healthy turf, post-application core cultivation will not adversely affect the performance of preemergence herbicides. It is likely that any seed brought to the surface in the soil will come into contact with the herbicide if it does germinate. Any seed that germinates within a core hole will likely grow into contact with herbicide at the surface perimeter of that hole. Also, seeds germinat-

In a healthy turf, core cultivation won't adversely affect preemergence performance.

ing in the holes will face stiff competition from new grass roots which flourish in these holes (Photo 3).

In the event that preemergence

failure occurs when post-application core cultivation has been performed, consider some possible causes for such failure. An obvious cause would be misapplication — either the rate was too low, or coverage was incomplete.

Consider that core cultivated turfs require more attention when it comes to irrigation. The "opened-up" turf loses water readily to the atmosphere, thus increasing the potential for drought-related damage. Weed pressure in a damaged turf may become so high as to override the effects of the preemergence herbicide.

Another scenario for preemergent failure could occur as a result of dry weather and/or lack of irrigation. While soil moisture may be adequate to permit crabgrass seed germination, enough rain or irrigation water may not have fallen on the turf to wash the preemergence herbicide off of the foliage it was sprayed on, or off the fertilizer or other granule with which it was applied.

If the herbicide barrier is not in place before the seed germinates, it is likely that the seed-



Photo 3. Prolific root growth in core hole - one week after coring.

lings will not be affected by the herbicide.

In summary, it is apparent that post-application core cultivation will not adversely affect the efficacy of a properly-applied preemergence herbicide to a well-maintained turf. Acceptable preemergence herbicide performance is dependent upon proper timing, efficacious use rate, uniform application and adequate irrigation/precipitation following application.

The ability to perform core cultivation before and after preemergence herbicide application will increase flexibility in scheduling springtime lawn maintenance operations. — Anthony J. Koski and John R. Street

The authors are extension turfgrass specialists at Colorado State University, Fort Collins, Colo., and The Ohio State University, Columbus, Ohio, respectively.

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The team members worked with the museum's landscape architect, Hanna Olin & Principals of Philadelphia, Pa., and Joseph Linesch, the local consulting landscape architect.

The Pavilion for Japanese Art is an international center for the study and exhibition of Japanese art and features the Los Angeles County Museum of Art's extensive Japanese collection, including the renowned Shin'enkan paintings collection and a noteworthy collection of Japanese netsuke sculpture.

Representatives of Britton Landscapes Inc., Pasadena; Cornell & Wiskar Landscaping Inc., Los Angeles; Iwasaki Landscaping Inc., Culver City; Brian Johnson Landscape, Pasadena; and Toddco Landscape Co. Inc., Los Angeles; worked intensely to complete the project in time for the opening of the pavilion last September. This is the first phase of landscaping planned for the pavilion by the museum.

The fifth building in the museum complex, the recently opened Pavilion for Japanese Art is surrounded by both exotic and indigenous plantings reminiscent of a Japanese garden, all specifically designed to flourish in the Southern California climate.

Among the unusual plants and trees found, installed and tended by the five-company team are: rare Timber Bamboo; both dwarf and regular Mondo Grass used as ground cover; unusual varieties of Philodendron i.e., Philodendron evansil (thought to be unavailable) was dug out of existing landscape installations; Canary Island Pine and Jacaranda; Philodendron selloum; and Monstera delicosa. Several existing trees were incorporated into the landscape design.

"Varying texture and form lend interest to the completed garden area surrounding the pavilion," said Philip Giroux, president of Toddco Landscape Co. "Very few flowering plants were used. Instead contrast is derived from the foliage and actual plant forms."

The various types and textures of plants specified for implantation required exhaustive searches since many species are simply not available. For example, the Timber Bamboo, was found and extracted from the backyard of a La Canada/Flintridge home. The Oldhamii Bamboo was found tucked in the back of a nursery in San Diego.

"This was a memorable project," Giroux added. "Five different disciplines had to be coordinated: irrigation, concrete, herbicide, maintenance and landscape installation."

Irrigation was executed by Cornell Wiskar Landscaping, concrete was poured by Britton Landscapes, herbicides were coordinated by Brian Johnson Landscape, the project will be maintained by Iwasaki Landscape and landscape installation was completed by Toddco Landscaping.

Soil conditions complicated the installation since the site encompasses heavily compacted clay soil, blocks of tar and pieces of concrete and liquified asphalt tar just below ground level and in the proposed irrigation trenches.

"The oozing tar rivulets from the subterranean tar reservoir and the half-inchthick steel barriers originally placed below ground to contain the LaBrea Tar Pits were unanticipated," explained Roy Wiskar, of Cornell & Wiskar Landscaping, the firm which installed the irrigation system. "We had to cut through the halfinch, 40-foot-deep steel barriers with an acetylene torch to run irrigation pipes throughout. Old undocumented iron watering systems, which crisscross the site, also posed another problem which we

were able to surmount."

The irrigation system is regulated by a digital dual-program Rain Bird irrigation controller.

More than 300 linear feet of six- and 12-inch-wide serpentine concrete moving strips were carefully installed to reflect the sweeping curves of the building architecture. And the stepping stones were constructed on site to the specifications of Linesch, the project's landscape architect.

Principals of four of the five participating firms, Britton Landscapes, Cornell & Wiskar Landscaping, Iwasaki Landscaping and Toddco Landscape Co., serve on the board of directors of the California Landscape Contractors Association, LA/SGV chapter, the oldest and largest landscape contractors association chapter in the state.

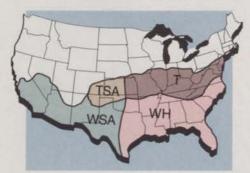


Rare and exotic plantings highlight the new pavilion for Japanese Art in Los Angeles.

FOCUS ON:

SEEDING

ZOYSIAGRASSES ARE WELL-ADAPTED TO VARYING SOIL CONDITIONS



Best adapted to the transition zone (T, TSA), also used to a certain extent in the northern two-thirds of the warm climatic region (WH, WSA.)

ZOYSIAGRASSES ARE GENERALLY considered to be warm season grasses although certain varieties are resilient far into the cool regions of the country. Meyer is one such variety.

Variety distinction and location are among the basic characteristics of zoysiagrasses that will be discussed here in an effort to present tips for its development and maintenance.

The shorter the growing season, the longer the period of unattractive dormant brown foliage. A good estimate of its growing season is the number of frost-free days in a location. In the midlatitudes, zoysiagrass is dormant from October until April (about six months). In the same locations, cool season grasses are usually dormant about two months.

Zoysiagrasses have been widely recommended for use in the transition zone where crabgrass and other summer annual weeds have an advantage over cool season grasses. Unfortunately, brown zoysiagrasses in late fall, winter and early spring are about as unattractive as brown crabgrass. Zoysiagrasses do produce a more dense winter cover than crabgrass and tend to carry a more golden brown and rich color.

Zoysiagrasses generally do not mix well with other grasses. Cool season grasses and zoysiagrasses are not compatible except for the possibility of the turf-type tall fescues. Zoysiagrass/turf-type tall fescue mixtures are now being researched and results appear promising.

During the hot summer, the zoysia is dominant. During fall, winter and spring,

> the tall fescue becomes dominant as temperatures cool down. This comes about as close to an "all year" green lawn as is possible. Seeds of both grasses are generally planted in midspring.

Seed mixtures and rate of seeding are still under investigation. At present, it appears that one pound of zoysiagrass and three pounds of turf-type tall fescue per 1,000 square feet should be adequate.

There are three different zoysiagrasses:

- •wide leaf matrella
- •medium leaf japonica
- •fine leaf tenuifolia

From these three types come:

- •Emerald zoysiagrass is a hybrid from a japonica and tenuifolia cross. Fine-leaved zoysiagrasses tend to produce a puffy growth that scalps when mowed. Emerald zoysiagrass also has this growth characteristic.
- Meyer zoysiagrass is a dense hardy selection of the japonica type.
- •Flawn zoysiagrass is a selection of the *matrella* type that is hardy along the mid-Atlantic states. It is also well adapted to the Southwest.
- Midwestern zoysiagrass is a selection released from Pur-

ZOYSIAGRASS FORECAST: GRASS OF THE FUTURE?

ZOYSIAGRASS MAY BE the grass of the future, especially in the Southern United States.

It's more efficient, requires less water, does extremely well in drought situations and has good shade tolerance. To be more specific, zoysiagrass does well in most turf situations, according to Milton Engelke, Texas A & M turfgrass breeder specializing in zoysiagrass.

"Once you have it properly established, it requires minimum maintenance against insects, diseases and weeds," he said. "It's always been a fairly popular grass, but it's had a mystique about it because it's always been so expensive."

With the new generations of zoysiagrass, prices are expected to fall to reasonable levels. They may even be priced similar to high quality bluegrass sod, he said.

The industry is starting to see some decent production in availability of plant material, particularly in the Midwest and in Texas. Two older varieties, Meyer and Emerald, continue to receive a lot of use — Meyer from Kansas City

and St. Louis to Washington D.C., and the fine-textured Emerald, generally adapted to traditionally southern climates.

New varieties include El Toro from the University of California, Riverside; Bellair from Beltsville, Md.; Evergreen (tentatively named) from Texas A & M; and Cashmere, a proprietary variety from Pursley Turf Farms, Palmetto, Fla., according to Engelke.

El Toro is a fairly aggressive, open-type, broad-textured zoysiagrass with good cold hardiness. It's a fairly good variety for general turf use and on sports turf in combination with tall fescue.

Production is limited to the Southwest U.S., mainly California and Texas.

Bellair is similarly adapted to Meyer, showing excellent winter hardiness and a strong golden color throughout the winter. In addition, it is said to be dense, require low maintenance and low watering, it's aggressive and shows good rust resistance.

Thirty-seven acres of Bellair foundation production are available compared to the limited availability of El Toro, Engelke said.

Evergreen has done extremely well in Florida and Southern California and has maintained its green color year-round in Texas. It's easily repaired and is currently being evaluated for use on golf course greens.

Cashmere from Pursley holds qualities similar to Emerald—it's fine-textured, fine-leaved and has a good green winter color. It's winter hardiness is still being tested, but so far it has shown better results in areas further South. It has good availability.

Zoysiagrass prices this year will run in the neighborhood of 40 cents to 50 cents a square foot — not much different from last year. Some sod producers have estimated that prices could run as high as \$4 per yard, including delivery and other costs, but the average price will remain between \$1.50 and \$3 per yard, according to Engelke.

One fault, depending on variety, is that zoysiagrasses are slow to repair and generally don't do well on heavily compacted areas.

(continued on page 72)



History tells us throwing packages into the water can be a revolutionary idea.

Patriotic colonists really started something when they threw packages of tea into Boston Harbor back in 1773. Today, DURSBAN* 50W in water-soluble packaging is starting a new revolution in simple and convenient insecticide handling.

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FOCUS ON:

TREES & ORNAMENTALS

THE CUSTOMER WHO NEVER CALLS BACK — IS IT YOURS?

I SAW YOUR ADVERTISING IN THE newspaper and received your newsletter and flyer in the mail, so I called you from your ad in the Yellow Pages.

I'm the guy who calls your business to place an order, patiently talks to your answering machine or am put on hold only to be told no one is in the office, and all you can do is take a message.

I'm the guy that finally got an appointment with one of your salesmen and stayed home to meet him only to have him not show up.

I'm the fellow who placed an order to have my tree pruned in "a couple of weeks," and called again to remind you after three weeks only to leave another message with your office.

I'm the guy who wonders why my "dormant" spray is applied in late April.

I'm the fellow who took the day off so that I could show your crew which lower branches on my maple should not be removed. Unfortunately, when they did finally come a week later, the branches were removed.

You might say that I'm a nice guy. But do you know what I am? I'm the guy who never calls back.

I'm the guy you spent advertising dollars on to get back when I was there in the first place. All you needed to do was treat me like a customer.

Why is it that companies work so hard to get new business when they often don't properly service or recognize their existing customers?

Our company is no exception. We had a call this week from one of the members on a homeowners association board who in the past has always supported our proposals. He said he was calling just to say he needed some work done at his own house.

He had called numerous times at one of our branch offices never to get results. Out of frustration, he called other tree companies. When they never showed up, he called our administrative office and said he'd give us another chance. What a testimonial.

We did a random phone survey of our customers about a year ago. How did they rate us? Actually, it was very good. We received an average of 9.1 on a scale of 10. What was their number one beef? Not quality or price (and we are historically one of the more expensive tree services).



It was failure to be able to make and keep commitments. Estimates in two or three weeks, unreturned phone calls, crews that don't show up as promised without a call, etc. I suspect most of us have had similar complaints. The fact that our customers are either so patient or, like the fellow on the homeowners board, come back out of frustration with our competitors, does not speak well of our industry.

We, as an industry, don't seem to be any worse than other service industries. How many of us have had to wait excessively in a doctor's office? Had your car break down just after going into the shop? This week we received a compliment from one of our customers who was building a new home thanking us for being the only trade that did what they had wanted. This is "excellence?" How simple.

What can we do as a company? As an industry? As a trade association?

I've already touched on what we can do as a company. Treat your customers as you would like to be treated. Pretend you are one some day and call your office. Imagine how you would like to sit home, taking time off from work only to have the people you hire not show up. The solutions are simple.

As an industry? Support your fellow contractors and allied fields. At the very least, don't tear them down. Point out to your clients the right way to do things.

Let your clients know if you are unable to meet your commitments. They will appreciate your honesty. Keep your office staff informed as to current backlogs so they won't make promises you can't keep.

Your best clients are repeat clients, those who have used your service before and those they have referred to your company. Concentrate on servicing them satisfactorily and your phone will keep ringing.

Let them draw their own conclusions as to the service others have provided. Good competition broadens the market, it doesn't reduce it. If you bum rap your competitor and he you, the customer is

going to be suspicious and not contract for the work at all. If you see something your competitor's crews are doing grossly wrong on one of their jobs, give the owner or manager a call and give them a chance to correct their own mistakes.

As a trade association? I think NAA does an outstanding job of trying to improve the professionalism in the industry. Many of the services and materials offered are there to help a company better itself. The problem is getting owners and management to participate. The same lack of commitment and follow through evident in dealing with our customers is evident in our use of association materials and brochures.

As an example, over the years we have purchased a small number of client recognition plaques for our company. Whenever I visit a client's office there is the plaque with their name, NAA's name and our company's name. They beam when I give them out, and usually will try to get us to promote the honor in the media. What a great idea. But where do you think the plaque we ordered last fall is? It's been sitting on my desk since then.

When will we get out and pay attention to our customers and stop spending all our time worrying about today's production and tomorrow's job? The company that will succeed in the 1990s will start now. — John Hendricksen.

The author is on the board of directors of the National Arborist Association.



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FINANCIAL CORNER

DISCRIMINATING SHOPPING: POINTERS TO SECURE A LOAN

FREQUENTLY DURING THE YEAR, we see changes in the prime interest rate and the Federal Reserve Bank's rediscount rate. The fluctuations can be likened to a yo-yo, but in reality it is an attempt to control the available money supply in heading off a tight money debacle.

No matter what money does cost, you need credit (the ability to use someone elses' money) in the everyday operation of your business — perhaps to carry accounts receivable, to carry peak-load inventory, to modernize your facilities, for the purchase of new equipment, for expansion, or for everyday business needs.

Money is a commodity and you buy it like everything else. How much you pay is dependent upon how good a shopper you are.

Most states have usury laws of varying rates. As a result, whenever rates are quoted in the following examples, they are not necessarily reflective of actual rates, but are shown for illustrative purposes.

Here are some suggested places to obtain loans and pointers on how to reduce interest costs:

BANK LOANS: A business firm can obtain a bank loan on the basis of its financial statement. Despite all the furor over periodic money crunches, banks are still making loans. But what does it cost?

To illustrate this point, we are using 6 percent as an example only. At the present time you cannot expect to borrow at a 6 percent rate.

Banks will lend money in a variety of ways. The most popular method, from the bank's viewpoint, is the discount loan. For instance: If you borrow \$1,000 at 6 percent for one year, the bank will deduct \$60 and credit your account with \$940. Each month you have to repay \$83.33. Because you never really had the use of \$1,000 for a full one-year period, you are paying an effective rate of approximately 12 percent per year. You may have to pay extra for life insurance, filing fees, etc.

Another method is the add-on where you repay the money borrowed plus agreed upon interest over an extended period of time. Thus, \$1,000 borrowed at 6 percent for one year is repaid at the rate of \$88.33 per month.

The cheapest form of bank loan is the straight business loan where you borrow a



sum of money to be repaid with interest at the end of the term. A \$1,000 loan for one year at 6 percent interest is repaid in full — \$1,060, at the end of the 12-month period.

There is a variation to this type of loan in which the bank deducts the interest in advance, or renews the loan quarterly. Both of these methods represent a slight increase in the straight true interest rate.

You can also borrow on your personally owned or business-owned vehicles. Usually you'll get a lower rate on auto or truck loans, but because they are installment loans and must be repaid monthly, the true interest rate is almost double the discount rate quoted.

FACTORING: The pledging of a firm's accounts receivables is a relatively simple way to get liquidity, but the method is costly and only those firms with a high gross profit margin can ever consider factoring of accounts receivable.

Most factoring is done on the basis of assigning sales invoices to the factor in exchange for an advance against future payments. Let's say your agreed upon rate is 1.5 percent. On \$1,000 of bills assigned, the factor will advance \$788. (\$1,000 less \$200 reserve = \$800 times 1.5 percent). The 1.5 percent charge is good for 30 to 45 days after which the uncollected account is charged back against the reserve account, or there is an additional charge levied of 1.5 percent. On any unpaid balances there is a charge of 0.25 percent to 0.50 percent per month.

Again, as in the illustration of bank loans, the days of 1.5 percent discount are gone. The use of this figure is for illustrative purposes only.

Factoring can be obtained on a notification basis — customers pay directly to the factor, or non-notification basis — where customers remit to you and you in turn give the checks over to the factor who endorses them in code (with prior arrangement with the bank) and deposits them to his account.

INSURANCE LOANS: Lowcost loans can be obtained by borrowing the cash values in your insurance policies. Borrowing this way is easy for there are no credit investigations, non-financial state-

ments to prepare and little paperwork. In addition, you can practically write the terms of repayment. Rates vary, but usually you can borrow at a 4.5 percent to 6 percent true interest rate on older policies.

Insurance companies wanted to discourage the practice of borrowing, and most new policies have higher set rates or a clause setting forth a variable factor to determine interest rate. Veteran administration policy loan rates are usually cheaper than rates of private insurance companies.

If you want to make periodic repayments, the loan will be reduced and the interest charge lowered accordingly. Of course, the proceeds upon death are reduced by the amount of the loan then outstanding, but many companies will allow you to purchase term insurance for the amount of the loan.

PASSBOOK LOANS: It is relatively simple to borrow on a savings passbook, leaving it in the custody of the bank during the term of the loan. Deposits can be made, even withdrawals as long as the balance remaining is in excess of the loan balance. You pay a higher interest rate than the amount received as interest from the savings institution, but the cost is cut because of the tax advantage.

Suppose your savings account is earning 5.25 percent (taxable to you) and you borrow at 6.25 percent (tax-deductible to you), your entire cost is only 1 percent less whatever you save on federal, state and local income taxes.

This type of loan is repayable periodically, or in a lump sum, at your option.

More loan opportunities, including those from home mortgage refinancing, credit unions, employee loans, small business administration and state and municipal loans will be discussed in a future financial corner column. — Arkin Magazine Syndicate.

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PEOPLE

CHEMLAWN SERVICES CORP. REcently named Bruce Woodmansee vice president of human resources. Woodmansee will be responsible for all employee relations, compensation, benefits and training activities at ChemLawn.

Woodmansee was previously senior vice president of human resources and public affairs for a division of Federated Department Stores. He brings more than 20 years of experience to ChemLawn in the human resource area.

Steve Cranston has been appointed district manager for the turf division of Rain Bird sales.

Cranston's responsibilities as district manager include providing sales support to Rain Bird distributors and contractors

and serving as liaison between Rain Bird management and landscape architects, irrigation consultants and city and county officials. His territory includes Utah, Arizona, New Mexico and El Paso,

Cranston brings to his new position more than 14 years of experience in the irrigation industry, most recently serving as a sales representative for Mountain States Supply in Salt Lake City, Utah.

Mark W. Beliczky was named to the newly created

(continued on page 68)

SCHOLARSHIP AWARD WINNERS

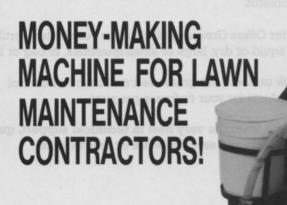
JON LOFT, CHAIRMAN of Lofts Seed Inc., Bound Brook, N.J., presented Peter Selmer Loft Scholarship awards at the 1988 New Jersey Turfgrass Expo in Atlantic City.

The scholarship program was established in 1984 in memory of Peter S. Loft for the purpose of furthering turf education. Recipients are graduate students of Rutgers University who have met stringent re-



Jon Loft (center) with scholarship winners (from left to right) Jane Breen, Paula Newton, Frederick Katz, Suichang Sun, Melodee Kemp, Jennifer Johnson-Cicalese, Kathi Hoffman and Leslie Rickert. quirements based on academic achievements and interest in turfgrass science. Each year the number of awards has increased; this year they were presented to eight students.

The awards are endowed by royalties from sales of Tribute, Lofts' new tall fescue variety named in Peter Loft's memory, and funds provided by Lofts and other corporate and private sources in the turf industry.



Add big profits by adding driveway maintenance to your service package with the NEW MAX4 Multi-Purpose Power Pump Sprayer/Applicator from JEVCO!

MAX4 is also an ideal backup sprayer for lawn chemicals and fertilizers. MAX4 pumps fluids, powers air tools, acts as a blower, sprays paint, fills cracks, spreads coatings and much more!

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"Surflan wasn't so gentle to the weeds. We used to have a real problem with crabgrass. We'd have to go in and pull them all by hand. It was so time-consuming. I figured I was paying close to \$50 for each thousand square feet just for labor.

"But with Surflan, the job took only

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"Surflan also took care of our oxalis and chickweed. And many other problem weeds, too. For almost eight months."

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"Are you kidding? Spray herbicide over the top of my flowers?



People (continued from page 66)

position of director of marketing for LESCO Inc.

Beliczky joins LESCO after an eightyear tenure with ChemLawn where he held various corporate and operations management positions. Prior to Chem-Lawn, Beliczky held faculty positions at The Ohio State University, Columbus, Ohio, The George Washington University, Washington, D.C., and served as a marketing/management consultant to numerous corporations.







NOW!

Robert J. Hill has been promoted to the position of director of marketing for Kubota Tractor Corp. He previously served as Kubota's product manager of trac-

In his new position, Hill will be responsible for the four product sales groups, product planning, market share and marketing support programs including advertising and public relations. Emphasis will be placed on long range growth and expansion of the Kubota product lines as well as coordination of sales efforts for existing product lines.

Hill was previously employed by Deutz-

Riverdale Chemical Company recently appointed Marvin R. Moore as national sales manager. Moore will be responsible for coordinating all sales activities for the company.

Moore was previously associated with Elanco Products Company where he held marketing, sales and sales management positions.

Three marketing department managers were recently promoted at Lebanon Total Turf Care, a division of Lebanon Chemical Corp.

Promoted were Amelia Eisenhauer to manager of advertising and public relations, Edward Price to manager of private label national accounts and Fred Siebecker to pesticides product man-

Eisenhauer will be responsible for the conception and implementation of advertising and public relations programs for Lebanon Total Turf Care. She was promoted after five years as marketing assistant and two years as computer programmer since joining the company in

Price was promoted from division manager of the Middle and South Atlantic region to manager of private label national accounts, where he will be responsible for developing and managing major account private label business. He has been with Lebanon Total Turf Care since 1976, serving as sales coordinator before becoming a division manager in 1981.

Siebecker, in his new position as pesticide product manager, will be responsible for managing and promoting the sales of pesticides to professional lawn care companies. Since joining the company in 1984, Siebecker was sales and service coordinator.

Dave Hildreth was recently named general manager of UAP Specialty Products, Fremont, Neb. Previously, he was a regional manager for ChemLawn.

Weather-matic has appointed Kevin Gordon district specification manager for the central and eastern United States.

Gordon will assist landscape architects, irrigation consultants and other professionals on irrigation equipment selection and design. He will also conduct seminars for professionals and design students.

Most recently, Gordon was regional sales manager for Weather-matic in the south central territory.

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- An OSHA Hazard Compliance Program
- Developing an effective telemarketing program
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Professional Lawn Care Association of America 1000 Johnson Ferry Rd NE Marietta GA 30068-2112

PRODUCTS

GROWTH PRODUCTS IS EXPANDing its professional liquid slow-release fertilizer line for 1989. Four new products will be available in addition to Growth Product's exclusive Nitro-26 CRN methylene diurea product.

The lead product will be a complete liquid blend of slow-release nitrogen, P, K and EDIA micronutrients — packaged in two and 2½ gallon containers for turf, tree and ornamental applications.

Circle 101 on reader service card

INCREASED PRODUCTIVITY AND maneuverability in a large-scale mower are now available from **The Toro Co.'s** Groundsmaster 580-D high-capacity turf mower.

The 580-D's compact 80-h.p turbodiesel engine provides power for cutting up to 14.5 acres per hour while cutting a 16-foot wide swath. Its 76-inch wheelbase, however, allows for an 18-inch uncut circle without braking.

The 580-D combines the productivity of a 16-foot mower with the handling ease of a six-foot machine, according to company officials. The outboard cutting units feature break-away protection, so if the operator misjudges a distance and the unit strikes an object, the wings will pivot away from that object.

In addition, the user can raise one or both outboard cutting units inside the traction unit width. This allows for trimming between objects less than eight feet apart.

Circle 102 on reader service card

MEDI-JECT TREE INJECTION SYStems has developed an effective liquid iron injector for pin oaks, silver maples,



sweetgums, bradford pears, willows, birches and london planetrees.

Only 33 percent of the injection sites, as compared with capsules, are needed with the Medi-Ject injector. Faster uptake to the iron chlorotic leaves is also accomplished, resulting in greenup in seven to 10 days.

Other injection products to be used in conjunction with the above tree injector include Medi-NPK (30-10-10), a balanced high concentration of macro-nutrients essential for plant growth. The Medi-Iron applicator is to be used on tree limbs that fail to greenup after an iron treatment.

Circle 103 on reader service card

DATASPHERE/CONTROL DATA HAS released a new version of their Terra payroll program that meets the Department of Labor's ESA-92 reporting requirements for employers of special (SAW) and replen-

ishment (RAW) agricultural workers.

According to the requirements, orchardists, growers, packers/shippers and nurserymen who hire SAWs and RAWs must file quarterly reports on the number of man-days worked by SAWs beginning Oct. 1, 1988 and RAWs beginning Oct. 1, 1989. In addition, they must provide information concerning man-days worked and other related data directly to RAW workers each pay period. The first SAW quarterly report was due Jan. 16.

The new version of the Terra payroll eliminates the extra work generated by the reporting requirements. The program stores all the information necessary to complete the WH-501R wage statement in a database. Whenever the grower enters a time card for an employee, the system checks the worker's status.

If they qualify as an alien, a special data entry window appears on the screen

and the payroll clerk enters the number of days worked in each of the crops listed in the requirements.

104 on reader service card

REMKE ENTERPRISES

Inc. has introduced a new water soluble fertilizer line for greenhouses, container growers and for horticultural use.

Gromax water soluble fertilizers are available in a 20-20-20 with chelated micronutrients for general purpose use, and a 20-10-20 "high-micro" for soil-less growing applications.

106 on reader service card

PRODUCT SPOTLIGHT

Kubota is now offering a new G-series of tractors. All three models — the Gl800, Gl900 and G2000 — come with standard steering or Kubota's new four-wheel steering (4WS) system.

Both the Gl800 and Gl900 are equipped with Kubota's liquid-cooled diesel engine, providing 16- and 18-h.p., respectively. For those who prefer gasoline power, the G2000 features a 21-h.p. liquid-

cooled gasoline engine that is built from a diesel engine block.

These new models offer improved durability and maneuverability and feature a semi-flat operator's deck for comfortable operation. Hydrostatic transmission is standard. For mowing in open areas or long distances, the G-Series models offer cruise control. The operator presses the HST foot pedal, adjusts the speed with the speed set lever and can then be

steered without using the foot pedal.

Kubota's shaft driven midmount mowers and grass catcher can be easily attached and detached for convenience. Mowers are available in 48-, 54or 60-inch sizes and move easily with the standard mower hydraulic lift. The grass catcher blows clippings into three rear bags with a combined capacity of 9.75 bushels.

105 on reader service card

For the long run.



force in riding rotary mowers.

Now there's more to Cushman® Front Line® Mowers than top cutting performance. More power. More operator comfort. More endurance

Now there's the new dieselpowered model Cushman 807.

Its totally integrated power train and new hydraulicallypowered steering gives you unmatched performance over the long run. The 807 dispatches thick, wet grass on tricky maneuvers around obstacles without losing

ground speed. No other rotary mower gives you a cleaner cut.

At the heart of the new, four-wheel 807 is a powerful 21.5 horsepower, 3-cylinder Kubota 950 diesel engine. We've also included a heavy-duty Donaldson air cleaner and a new, heavy-duty Cushman PTO clutch to keep your new Cushman Front Line running longer. A complete family of Cushman Front Lines and a wide range of accessories are available to meet all your needs all

Choose a 3 or 4 wheel design with 60- or 72-inch side or rear discharge mower deck. Or add the exclusive Cushman Grass Caddy system, which lets you cut, catch, and hydraulically dump 16 bushels of clippings without leaving the seat.

For a convincing demonstration contact your Cushman dealer today. Or call toll-free: 1-800-228-4444.

3431 Cushman, OMC-Lincoln, P.O. Box 82409, Lincoln, NE 68501

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Seeding

(continued from page 59)

due University, Lafayette, Ind.

•El Toro zoysiagrass was developed in southern California. It is particularly tolerant of smog and other types of environmental pollution. It was released in 1984.

 Bellair zoysiagrass was released in 1985 following extensive evaluations at the U.S. Department of Agriculture in Beltsville, Md.

Named varieties of zoysiagrasses are all planted vegetatively. Sprigs or stems about three nodes in length are planted by covering one end with soil. Plugs are then set into the soil. The closer the spacing of sprigs and plugs, the more rapid the establishment. Six-inch spacing is about right within and between rows. Uniform watering is very important.

Zoysiagrass seed is mostly imported from the Far East. It is occasionally harvested on sod farms in the United States. Its seed is typical of other sexual crossed types and is available in limited supply. It is of the medium-textured *japonica* type and is usually planted at about two pounds per 1,000 square feet. It may be seeded with cool season grasses simp-

ly by mixing the zoysiagrass seed with a named brand seed blend or mixture.

Zoysiagrasses are planted in spring and early summer to provide the longest growing season possible for establishment. The coarse-leaved *matrellas* discolor less readily than the finer-textured *japonicas* in the far South.

Zoysiagrasses are very wear-resistant under foot, which is a tremendous advantage in heavy use areas. It also means that heavy-duty mowers are needed to cut and groom it properly.

Zoysiagrasses in time may develop thatch which creates the need for higher intensity maintenance to bring about control. The grasses are very slow to establish vegetatively — much slower than bermudagrasses.

Zoysiagrasses spread by aboveground runners (stolons) as well as underground stems (rhizomes), although the spread is slow. A full year is usually required in the far South and as much as three years in the transition zone. Weed control in lawn establishment is important for periods such as this. Use of other seeded grasses to help provide cover and crowd out weeds is recommended.

Zoysiagrasses have a slow growth rate once established as a lawn. Consequently, mowing need not be as frequent as for bermudagrasses. Height of cut for zoysiagrasses varies from about three quarters of an inch to two inches.

Zoysiagrasses, once injured by wear, disease, insect or maintenance error, are slow to heal. Once again, the slow growth rate is responsible. No grass produces a thicker, more resilient cover.

Zoysiagrasses are well-adapted to widely varying soil conditions; sandy soils as well as heavier soils are suitable. Zoysiagrasses are not well adapted to wet, poorly drained grounds. These grasses perform best on soils limed to a near neutral pH of 7.0.

Zoysiagrasses require only minimum fertilizer applications. One to two pounds of nitrogen per 1,000 square feet per season once established, and perhaps six pounds of nitrogen during sod development is adequate. A complete lawn fertilizer should be used.

Zoysiagrasses have good drought resistance, however, irrigation may be needed during periods of drought. Thatch may prevent water from reaching the root zone and increases runoff. Thus, thatch control is important.

Zoysiagrasses do not produce abundant seedheads; as a result, only a slight loss of turf quality is noted in this regard. Zoysiagrasses are not the garden border pest that bermudagrasses are. It is easier to keep them out.

These grasses have some resistance to injury from salt spray so that they are useful along the coast. — The Lawn Institute

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Pellegrino

(continued from page 26)

start out at one point and work your way back, keeping traveling time to a minimum. We've even outgrown this system. We're going to have to do something eventually with a bigger office, but this is a big improvement over what we had. It just seems like as soon as we make the improvement, it's time to do it again. By the time the ideal situation comes, you've outgrown that. So you just keep trying to better yourself. You keep trying to work toward something.

Q. What's unique about your company?
A. A lot of people pick us because we can handle more than most other companies. There aren't too many companies that will do all phases of work that we do. There's a lot of companies that will go in and complete a specific project, but once they're done with it, they won't maintain it.

Some people feel more comfortable with a company that can actually do the whole project. We complete a project in a way that we can predict what it will look like in 10 years. We include long-range planning with immediate service.

I think some people pick us because they just like us. They like our honesty.

We always try to be upfront with them. If for some reason I have to talk myself out of a job, I will, instead of just doing a job to get the money. They must feel that sense of honesty — that's why they do business with us.

Q. What are some of your goals?
A. To streamline more of the work and try to delegate more responsibility to foremen. I like to have my hands in everything. Finding the right employees is

always a goal.

What are some of your frustrations?

A. My frustrations aren't in the job itself, but in areas outside of my control. Between the cost of operations going up and tax law changes, it gets pretty frustrating. It seems like when I first took the company over, there were a lot of incentives to grow. Since they changed all the tax laws, every time you think you're getting ahead you're not.

The biggest frustration I think is not being able to do the work because of problems I have no control over like the labor force and the weather. You finally get caught up and three or four employees walk off the job and you can't replace them right away.

You promise somebody you're going to be there, and you can't be there.

Q. How do you ensure profits?

A. You don't really ensure you're going to make a profit a lot of times, especially when you're working by the hour. Because we do a lot of construction work that's flat rate price per job, the faster you do it in the most cost-effective way, you'll make money.

However, when you're working by the hour, you're justifying every hour and you're justifying the material. So you can put in more hours, but you're not necessarily going to make a big killing on the job. It's hard to make money by the hour. We're forced to work by the hour on a lot of the jobs because it's often unclear as to what the job will involve until you actually get into it.

Sometimes you have a tendency to make more of a profit on smaller jobs than larger jobs. You can probably make more on a \$3,000 job than you can on a \$50,000 job because you can get in and out in a couple of days. A longer job is dragged out, and it seems like you don't make as much of a profit percentagewise.

I don't sit down and figure out whether we're losing or making money until the job is done, because there's nothing you can do about it. I try to look at the overall year rather than the individual

(continued on page 77).

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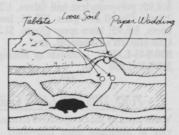


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Lawn care companies of all sizes in U.S. and Canada being sought by national corporation. Complete buy out or stay and grow with us. If interested please call me directly: Don Karnes, Senior Vice President, Tru Green Corp., 404/442-8700. Strict confidentiality maintained.

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Lawn care companies of all sizes anywhere in U.S. wanted to purchase by national corporation. If interested please respond to: *ALA/Maintenance* magazine, Box 329, 4012 Bridge Ave., Cleveland, Ohio 44113. Strict confidentiality maintained.

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Top firm needs foreman. Quality conscious Texas-based landscape management firm has immediate opening for detail-oriented landscape maintenance foreman. If you have outstanding professional and horticultural skills and are not afraid of hard and healthy teamwork, then you could qualify for a top position with the finest landscape firm in the Southwest. Outstanding compensation and opportunity. Reply today to: *ALA/Maintenance*, Box 325, 4012 Bridge Ave., Cleveland, Ohio, 44113.

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large commercial landscape projects.
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Pellegrino

(continued from page 75)

job. If I make money at the end of the year, then fine, I know we did all right. If I analyzed every job, I'd go crazy.

It's not always that easy, but if you do a high volume of work you know you're doing pretty well.

Q. How has the industry benefitted by the increased interest in mowing?

A. There's a lot of mowing companies in this immediate area alone, but that doesn't hurt us. If there's a need for people to be out there mowing, that's great, however, it's not that easy to go into the mowing business and be successful. It doesn't help the industry any when someone starts a business one year and the next year they're out of business.

They want to charge a little bit less than the other guy, and they have no idea what their overhead and operating costs are. The next year they find they don't have the money to buy more mowers.

The industry benefits from those who are willing to put in the time and dedication. You're competing with the elements. It's a tough business to be in.

There's enough business for everybody. I like to see competitive companies that do top-quality work and charge what they should charge for the job.

There's no need to be jealous of another company. Today, a lot of guys in the industry work together. As a matter of fact, we work with landscapers that don't have the heavy equipment we do.

Q. Does your equipment suffer from much downtime?

A. Not really. Most of the equipment is custom-made. We sharpen the blades every morning. All the mowers get reshocked and greased once a week. We have backups when one is getting fixed. We generally repair all of our own equipment, but last year we had so much productive time, we couldn't fix anything. We had one of our largest repair bills because we just couldn't stop to do it ourselves.

Q. Does industry pricing reflect the true cost of doing business?

A. Industry pricing is somewhat below the level it should be. Take mowing for example. A company that goes out and mows the grass is very deceiving. The equipment is costly to buy, it's costly to repair and it's costly to maintain. It's constantly buying and rebuying. I don't think people realize that you buy a mower for maybe \$3,000, but you have three or four of them in a trailer. Then you have a trailer and a truck estimated at \$20,000. By the time you get done, you have \$30,000 or \$40,000 in equipment for one crew

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I'm very cautious about raising my prices. I know what my overhead is and I know what I have to charge to make money and it seems like I try to raise my prices accordingly to cover our costs.

Q. Are you satisfied with the size of your company or do you want to get bigger?

A. I don't know how much bigger we want to get. I don't see how you can grow to \$10 million and still keep the same level of service we have now. Too much depends on me. In the past five years, we've become a lot more selective with the type of work and clients that we'll take. We've been really selective. I remember 10 years ago, we'd more or less take on any job, any client and just add, add, add. It seems in the past five years, we've really targeted a market in which the people appreciate our

service and we go after that type of

Maybe that's why we've grown so successfully. We've stopped targeting areas that weren't as successful for us as the ones that we're doing now. If there's a customer that just needs their last mowing, they can get 10 other companies to do the same job. They're not really made for us and we're not really made for them, so the relationship doesn't work

I always say that professionalism starts with hiring. I have to see people before I hire them, before I'll put them in front of my client's houses. We kind of keep a close eye on all our employees. — Cindy Code

The author is Editor of ALA/Maintenance magazine.

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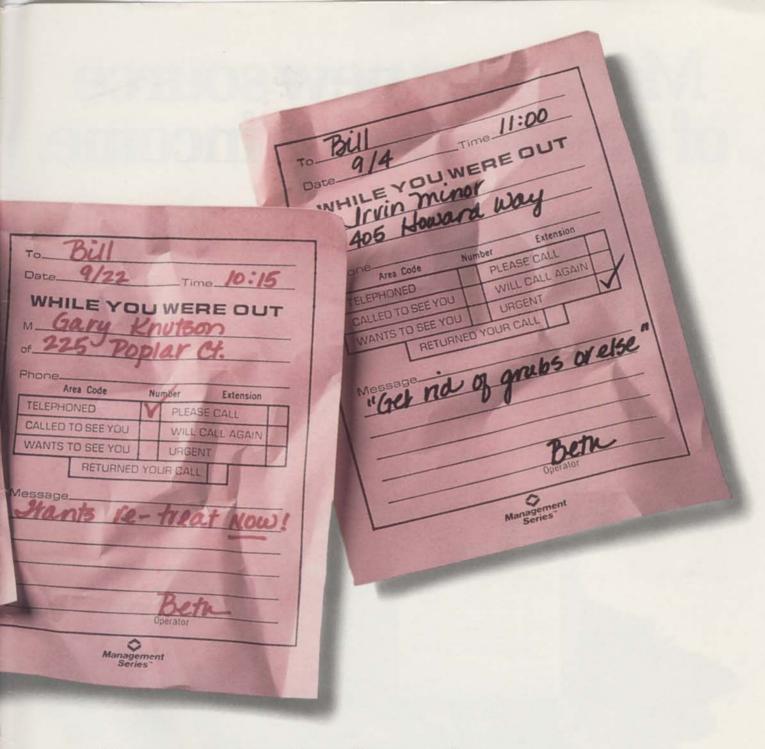
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