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OUR CHANGING INDUSTRY

The tools of the trade are changing as more lawn care operators seek to diversify.



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ALA

DECEMBER 1986
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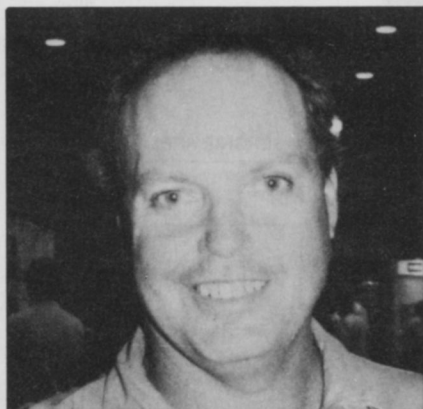
COVER

The industry is changing and more lawn service professionals are diversifying their businesses.

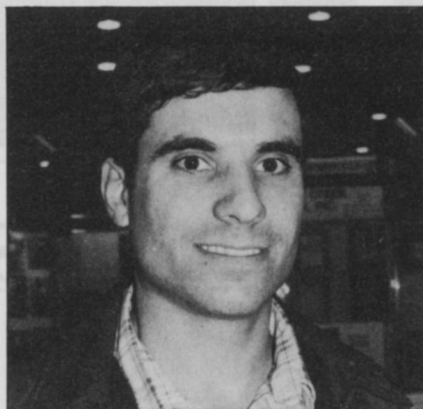
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VIEWS ACROSS THE TURF INDUSTRY

HAVE YOU ADDED ANY AUXILIARY SERVICES TO YOUR BUSINESS?



“Yes, we have. We just added another condominium complex to our lawn care services as part of our expansion program. It was done to increase the size of our business. But, I think that since our company went to the Florida Turfgrass Conference and Trade Show, we’ve already increased business. This is probably because of everyone’s increased awareness of what’s out there in the field to use these days.” — *Ben Marshall, Turf Care Inc., New Port Richey, Florida*



“We haven’t added any services lately because there’s not much expansion now. What we have added most recently is lawn renovating. We’re a lawn care service and so we do mostly aerification and spraying. We started doing the core aerification about three years ago. But it’s hard to get into mowing around here. We’re right outside of the Quad cities and there’s lots of kids mowing lawns.” — *David DeReu, DeReu Skelgas Co. Lawn Care, Geneseo, Illinois*



“Yes, we’ve recently added tree feeding to expand our business. Our company got into tree feeding because we felt that there was a market out there. Since we’re already on our customer’s yard, we figured that we had a captive audience in them. We felt that this is a service they could use which would be a benefit to their landscape. Unfortunately, it’s starting out slow.” — *Doug Halterman, Leisure Lawn, Inc., West Carrollton, Ohio.* ■

CALENDAR

Dec. 8-11

Ohio Turfgrass Conference and Show, Ohio Center, Columbus, Ohio. Contact: Dr. John Street, Ohio State University, Agronomy Extension, 2021 Coffey Road, Columbus, Ohio 43210-1086; 614/422-2047.

Dec. 12-13

Southern Nevada Desert Turfgrass Conference. Contact: Bob Morris, Clark County Extension Office, 953 East Sahara Avenue, S.T. and P. Building, Suite 207, Las Vegas, Nevada 89104; 702/731-3130.

Dec. 12-15

National Fertilizer Solutions Association Convention and Exhibition, New Orleans Convention Center, New Orleans, Louisiana. Contact: Bob Wanzel, NFSA, 10777 Sunset Office Drive, Suite 10, St. Louis, Missouri 63127; 314/821-0340.

Dec. 15-16

17th Annual Georgia Turfgrass Conference, Georgia Center for Continuing Education, Athens, Georgia. Contact: Gilbert Landry, Jr., University of Georgia, College of Agriculture, Athens, Georgia 30602.

Jan. 7-8

Tidewater Professional Horticulture Conference and Trade Show, Pavillion Conference Center, Virginia Beach, Virginia. Contact: Beth Wright, P.O. Box 6291, Virginia Beach, Virginia 23456.

Jan. 7-9

25th Annual North Carolina Turfgrass Conference and Exhibit, Winston-Salem, North Carolina. Contact: A.H. Bruneau, Box 7620, North Carolina State University, Raleigh, North Carolina. 27695-7620; 919/737-2326.

Jan. 21-23

Virginia Turfgrass Conference and Trade Show, Marriott, Richmond, Virginia. Contact: J.R. Hall, III, Virginia Polytechnic Institute, Virginia Cooperative Extension Service, Blacksburg, Virginia 24061; 703/961-5797.

Jan. 26—Feb. 2

50th International Turfgrass Conference and Show, Phoenix Civic Plaza, Phoenix, Arizona. Contact: Golf Course Superintendents Association of America, 1/800/GSA-SUPT.

Jan. 27

Professional Turf and Landscape Conference, Yonkers Raceway, Yonkers, New York. Contact: John F. Cockerill, Professional Turf and Landscape Conference, 475 Central Avenue, White Plains, New York 10606; 914/693-3792.

Feb. 23,24

Annual Shade Tree Symposium, Americana Host Farm Resort, Lancaster, Pennsylvania. Contact: Sara Attig, International Society of Arboriculture, 1321 Squire Drive, Ambler, Pennsylvania 19002; 215/643-0413.

Feb. 24-26

Western Pennsylvania Turf Conference and Trade Show, Pittsburgh Expo Mart/Marriott Hotel, Monroeville, Pennsylvania. Contact: Henry F. Meinert, Jr., Meinert Brothers Landscaping, 325 Dorseyville Road, Pittsburgh, Pennsylvania 15215; 412/963-8801.

May 20

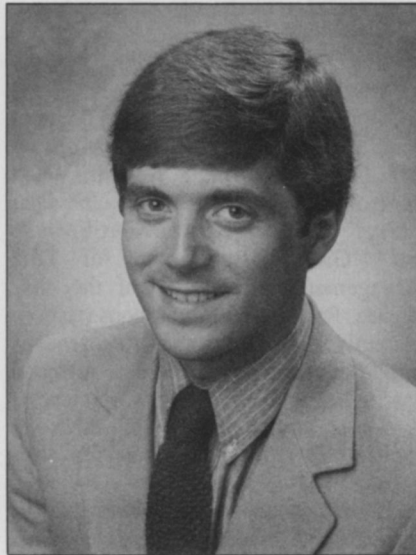
North Carolina Turf and Landscape Field Day, NCSU Turf Field Center, Raleigh, North Carolina. Contact: J.M. DiPaola, North Carolina State University, Box 7620, Raleigh, North Carolina 27695-7620; 919/737-2657. ■

INSIDE STORY

For most lawn care operators, the 1986 turf care season has come to a close. Many northern businessmen will spend the winter replenishing their supplies and rejuvenating their equipment to tackle the 1987 season. If business was good, hopefully there will be a little time for some rest and relaxation in a warm and sunny place.

But those operators who feel that their 1986 profits were insufficient may be undertaking some off-season activities to extend their cashflow. Some businessmen may be offering winter services for the first time this winter.

Our cover story, "Our Changing Industry," includes some discussion of the growing need for off-season opportunities. We also take a look at the topic of diversification in general. The industry used to be dominated by specialists who offered only lawn spraying or mowing maintenance or some other specific service. Today many lawn care operators are getting into a wide variety of add-on ser-



vices and many landscapers are getting into landscape maintenance services. The characteristics by which we define the individual segments making up the green industry are becoming less distinct. Stay

tuned for further developments.

In conjunction with our cover story on the changing green industry, we also have a feature on asphalt seal coating as an auxiliary service for lawn care operators. A distributor of asphalt maintenance machines in Florida has begun marketing his machines to the lawn service industry.

In a lighter vein, Assistant Editor Vivian F. Rose relates some "Lawn Care Anecdotes" for us. Rose contacted some of this industry's greatest storytellers who told her of some of their more memorable experiences. No doubt everyone will be able to relate to this article.

And of course, we have an interesting selection of technical articles from university researchers from around the country. Read on!

Jim Weidner

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NEWS IN BRIEF

FLORIDA TURF SHOW BREAKS ATTENDANCE RECORD

The Florida Turfgrass Association's Annual Conference and Show in Tampa on October 19 through 22 broke its previous attendance record with over 2,000 registrations. That figure puts the FTGA conference in the number two position behind the Ohio Turfgrass Conference and Show in number of total registrants for a state turfgrass conference. Last year's Ohio show drew 2,620 total registrants. FTGA's trade show boasted 200 companies.

The show's highlights included an inspirational speech by John and Greg Rice. The Rice brothers are twin dwarfs who overcame physical obstacles to pursue three successful careers in cosmetic sales, real estate, and investments. In a speech



Above, Greg (left) and John Rice. Below, FTGA Show, '86, Tampa, Florida.

interspersed with humorous anecdotes, the two related their personal histories and extolled the virtues of "thinking big" as the key to success.

The lawn and commercial turf educational sessions included presentations on turf diseases, "What's New in Weed Control," "How to Handle Chemical Spills," "What's New in Fertilizers," and "Growth Regulators for Turf Management." Each day of the conference, four in-depth workshops ran concurrently for 2-1/2 hours so attendees could get a chance to attend as many as possible. The workshops covered insect, nematode, and disease identification and control, and turfgrass nutrition and fertilization.

The first day of the conference was devoted to FTGA-funded research reports on nematode and mole cricket work. The last day of the conference featured presentations concerning the industry's use and disposal of pesticides. Next year's conference and show will again return to Tampa on October 11 through 14.

CALIFORNIA LANDSCAPERS HAND OUT TROPHIES

Landscape Resources, Inc. of Fallbrook captured the 1986 Sweepstakes Trophy for the best landscape project in California from 233 projects submitted for consideration, as announced by the California Landscape Contractors Association during its recent annual convention in



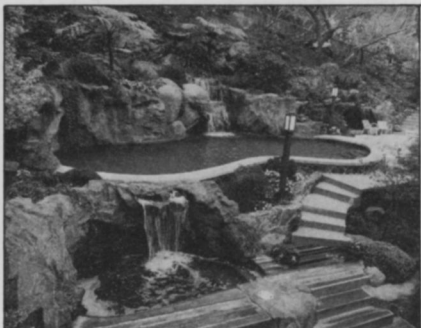
Hawaii.

CLCA judges selected Landscape Resources for its landscape installation at Brookside Farms West, a residential estate and racehorse training facility in Bonsall. The firm landscaped a total of eight acres in an existing 170-foot-deep ravine. Included in the project are meandering streams, cascading waterfalls, several ponds, a barbecue facility, tennis court, and a 10-foot retaining wall consisting of 5- to 15-ton boulders. It took a year and a half to complete the project. Joseph L. Delgado of Oceanside was the project designer.

The President's Trophy for the best residential project was awarded to Lehmann Landscaping Company of San Mateo for the Michael Ross residence in Hillsborough. The designer was Cliff Jones of Redwood City. Lehmann also took the Judge's Award, which salutes the best residential landscaping under \$40,000, for the Robert Hoffman residence in Hillsborough. The Hoffman project was designed by Ransohoff, Blanchfield, and Jones of Redwood City. This is the second straight year that Lehmann has earned the Judge's Award.

For the entry judged best in all commercial categories, the Jere Driscoll Award went to Ecosystems Imagery, Inc. of Cardiff for the East African Kopje at the San Diego Zoo. The Kopje (pronounced "copy") is a half-acre replica of a rock formation found on the Serengeti Plains of Africa, along with animals and plants common to that area. Designer of





the exhibit was Jones and Jones of Seattle, Washington.

CLCA is the nation's oldest and largest organization of licensed landscape and irrigation contractors. Also included in the association's membership are landscape architects, landscape suppliers, educators, public employees, and students.

SUPPORT YOUNG ENTOMOLOGISTS' SOCIETY

The Young Entomologists' Society (Y.E.S.) was originally organized in 1965 as the Teen International Entomology Group. The organization acquired the new name in 1984. The group currently

has over 500 members from 48 countries around the world. Y.E.S. is sponsored by the U.S. Department of Agriculture (Cooperative Extension) and the Department of Entomology at Michigan State University. Support for the operation of Y.E.S. programs and services is provided by the Entomological Society of Canada, the American Entomological Society and individual Y.E.S. members.

The primary objective of Y.E.S. programming is to assist all entomophiles, especially youth and amateur entomologists, in establishing contact with colleagues who share similar entomological interests, but live in other states, provinces, and countries, so that they might learn from one another by sharing information, advice, literature, or specimens.

Professional entomologists are also strongly encouraged to become involved in Y.E.S., as members or volunteers, because they serve as role models to guide the personal and educational development of other members. This arrangement provides a unique method for sharing entomological knowledge and expertise, personal talents, and cultural backgrounds.

The most visible aspect of the Society

is its journal, *Y.E.S. Quarterly*. It is one of the primary means for informational exchange among members and it is full of informative articles, as well as illustrations, Society news, field notes, puzzles, poems, and much more. There is also a member directory and other special publications such as the "Y.E.S. International Entomology Resource Guide."

There is also an opportunity to become involved in the actual operation of the Society; to publish articles and illustrations in the journal; to trade specimens, literature, and equipment with other members; and to participate in special competitions in writing, photography, and illustration.

Through the generous contributions of supporting organizations and members, the Society is able to offer pro-rated, or even gratis, membership to disadvantaged youth and financially restricted persons in developing nations. Interested individuals have never been turned away for financial reasons.

If you would like to get involved in the Y.E.S. program, write to Gary A. Dunn, Y.E.S. International Headquarters, Department of Entomology, Michigan State University, East Lansing, Michigan 48824-1115.

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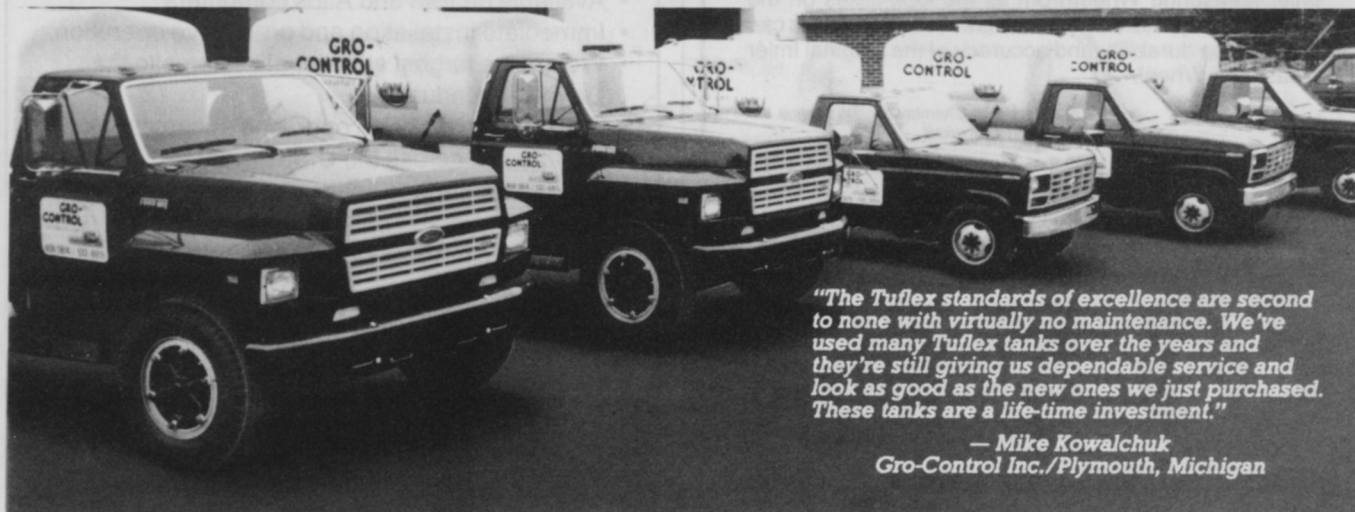
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— Mike Kowalchuk
Gro-Control Inc./Plymouth, Michigan

RHONE-POULENC ACQUIRES UNION CARBIDE AG PRODUCTS

Rhone-Poulenc, the French-based world-wide chemical giant with sales of \$8 billion, has reached an agreement to acquire, through its United States affiliate Rhone-Poulenc, Inc., the Union Carbide Agricultural Products Company. This acquisition includes the worldwide personnel, products, manufacturing and research facilities. The closing is scheduled for the end of this year.

"This acquisition reflects a key strategic objective of the RP Group to enhance its position in the U.S. crop protection and plant improvement industry," according to Thomas M. Dille, Group Vice President, Agricultural Sector of Rhone-Poulenc, Inc. "Over the last six years we've made a commitment to growth in the U.S. — first with the 1981 acquisition of Mobil Chemical Company's agrochemical business. The merging of these two agricultural operations will place Rhone-Poulenc in the number three position in the world for companies in the crop protection industry and will enhance our U.S. position as well as in numerous countries abroad."

Rhone-Poulenc's U.S. agrochemical operation is headquartered in Monmouth Junction, New Jersey. This expansion will add approximately 2,400 full-time employees located in the United States. The Union Carbide Agricultural Products Company is headquartered on a 50 acre tract of land at Research Triangle Park, North Carolina.

THE ANDERSONS INTRODUCE BREAK-THRU

As always, the recent Professional Lawn Care Association of America (PLCAA) Conference and Trade Show in Baltimore, Maryland was a forum for much industry news. The Andersons took the opportunity to debut their new Break-Thru™ herbicide at this year's conference. Break-Thru is unusual because it is a non-phenoxo herbicide.

"Although Break-Thru can be applied alone, maximum broad-spectrum weed control is achieved when Break-Thru is used in combination with other products, such as Banvel™ and Turflon™," says Joe DeLuca, Professional Products Marketing Manager for The Andersons.

"This enhances the activity of the herbicides, permitting effective control at reduced rates which limits applicator and customer pesticide exposure."

Other features of Break-Thru include, no phytotoxic effects at recommended rates on most turfgrass species, rapid and complete soil decomposition, a short soil half-life, and a unique formulation which allows it to penetrate the leaf cuticle. But the Break-Thru formulation is not new. "When Silvex was banned eight years ago, we began searching for an alternative to phenoxo herbicides," says DeLuca.

The product is available in 2-1/2-, 30-, and 55-gallon containers. But the pressure is on to order quickly. "For the 1987 season we will be producing a limited quantity of Break-Thru," warns DeLuca.

UNIVERSITY OF GEORGIA TURFGRASS FIELD DAY

The field day, which was co-sponsored by the Georgia Turfgrass Foundation, Inc., was held on August 12 at the Georgia Experiment Station in Griffin. A total of 480 people gathered under cloudy skies to take part in the turf plot tours, luncheon, and equipment demonstrations.

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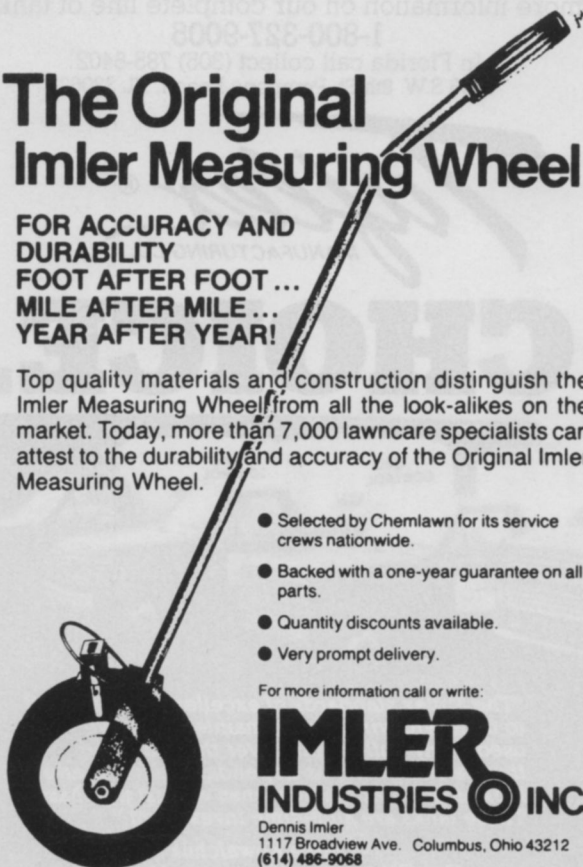
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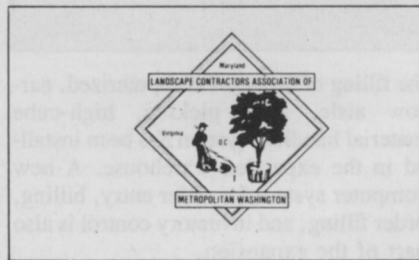
(800) 524-1825

Those in attendance represented all facets of the turf industry and came from 53 countries and six states.

2ND EDITION LANDSCAPE SPEC GUIDELINES AVAILABLE

The Landscape Contractors Association of Metropolitan Washington, Inc. is pleased to announce publication of the Second Edition of *The Landscape Specification Guidelines for the Baltimore-Washington Metropolitan Areas*. The Specs have been used nationwide by landscape architects and contractors when they spec and bid a project.

The Specs are an excellent training manual for technical landscape personnel as well as standard equipment for every



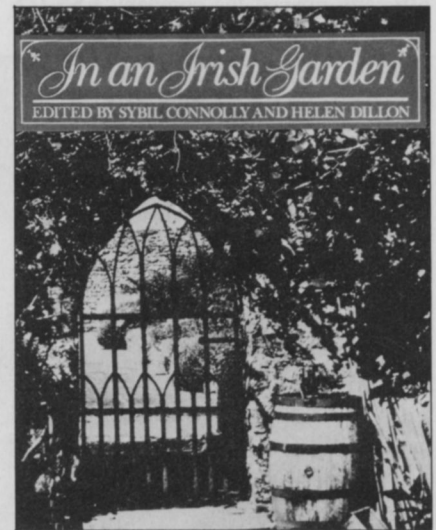
crew as an on-the-job reference manual. The second edition is over twice the size of the first, yet its use has been facilitated by section dividers and a numbering system. Each section begins with a checklist to help architects and bidding contractors clarify and customize the specs for a specific project. It's also filled with helpful "notes" to architects and contractors.

Sections include "The Planting Section," "The Turf Section," "The Exterior Maintenance Section," and "The Interior Landscape Section." The guide may be ordered by mailing a check or money order to LCAMW, 1909 South Fallsmead Way, Rockville, Maryland 20854. The cost is \$30 per copy (non-member) and \$15 per copy (member). Volume discounts are available.

BOOK CELEBRATES IRISH GARDENS

In An Irish Garden, by well-known designer Sybil Connolly and horticulturist Helen Dillon, is a celebration of Ireland's most cherished gardens. The reader is graciously invited to follow a technicolor

tour through 27 of Ireland's most lovely private gardens led by the gardeners themselves. *In An Irish Garden* is not only a collection of more than 125 lavish photographs — from sprawling country



manors to trim, compact townhouse gardens. It also offers a rare and personal glimpse into the thoughts of the dedicated men and women who have nurtured these oases. Write Harmony Books, 225 Park Avenue S., New York, NY 10003.

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**POWER LAWNMOWER PARTS
CELEBRATES 25TH ANNIVERSARY**

This summer, Gene Rosenbaum, President of Power Lawnmower Parts, Inc., officially opened the company's \$3-1/2

million facility expansion and kicked off a year of silver anniversary celebrations. The ribbon cutting was part of an open house for friends, vendors, suppliers, politicians, and the media at Power Lawnmower Parts' 100,000 square-foot

facility in Rochester, New York.

In honor of the 25th anniversary, the company's new 132-page full-line service parts catalog and its 32-page Kwik-Fix catalog both have silver covers. In addition, celebrations for customers will be scheduled at trade shows and other industry events.

The expanded facilities include new offices for the company's growing staff, which now totals 110 people. To speed



Power Lawnmower Parts President and founder Gene Rosenbaum (second from right) cuts the ribbon opening the company's new addition and kicking off the 25th anniversary. Assisting are (front row from left) Jane Grein, Assistant to State Senator Ralph Quattrocchio; Deputy County Executive Ralph Esposito; Florence Rosenbaum; and Gates Town Supervisor Jack Hart. Looking on are (back row from left) Linda Rosenbaum Frank, Irving Altman, and Morton Rosenbaum.



the filling of orders, a computerized, narrow aisle, zone picking, high-cube material handling system has been installed in the expanded warehouse. A new computer system for order entry, billing, order filling, and inventory control is also part of the expansion.

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TRACY-LOCKE REPRESENTS EVER-GREEN LAWN

Tracy-Locke/Denver has been selected to handle all advertising and direct marketing efforts for Ever-Green Lawns, the leading lawn care company in the Rocky Mountain region, and its subsidiaries. Founded in St. Louis in 1974, Ever-Green Lawns moved to Denver in 1975 and is part of E.G.L. Corporation.

E.G.L. Corporation includes Ever-Green Lawns, Ever-Green Leisure Services, Inc., and U.S. General Corporation. Ever-Green Leisure Services, based in Denver and Normal, Illinois, retrofits lawn service trucks. U.S. General Corporation manufactures lawn care products such as "Revive," which is mass merchandised in garden centers and retail chain stores.

The Tracy-Locke team serving the Ever-Green account will be John Davies, Vice President/General Manager of Direct Marketing, and Account Executive, Lea Mittelstaedt. Davies' extensive experience in the gardening industry at the Burpee Seed Company and Garden Way, Inc. and Tracy-Locke's record of successfully marketing consumer products and services influenced the deci-

sion, according to Ever-Green President, Dick Miller.

The first day on the job for Davies included a briefing by Ever-Green staff horticulturist, Herb Gundell, who also pens lawn and garden columns for the *Denver Post*, and a tour of duty out in the field as part of the crew on an Ever-Green lawn service truck. Tracy-Locke/Denver is the largest advertising agency in Colorado with annual billings of \$34 million and is part of a \$300 million national agency network, Tracy-Locke, Inc.

WEEKEND GARDENER AIRS ON NASHVILLE NETWORK

"The Weekend Gardener," a 30-minute gardening series hosted by Jim Bennett, began telecasting September 6, on The Nashville Network (TNN). The announcement was made today by David Hall, Vice President and General Manager of The Nashville Network, and Bennett, publisher of *The Weekend Gardener Journal*.

"The Weekend Gardener" is telecast at 9 a.m. (Eastern) on Saturdays and will cover a wide range of gardening subjects



THE NASHVILLE
NETWORK SM

— from growing vegetables, fruits, and flowers to landscaping, construction projects, greenhouses, and even raising catfish in backyard ponds. Referring to gardening as "America's most popular hobby," Bennett says, "We want to be known as the show that knows gardeners best."

He says a typical show includes three segments: the first will give tips on growing produce such as tomatoes; the second might include a trip to a special garden or interview with a guest; and the third segment will answer a letter from a viewer, perhaps about controlling a garden pest.

Bennett and Hall are confident in the success of the series. "Research done by Simmons Market Research Bureau has in-

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icated that our viewers are 36 percent more likely to own a garden tiller than the average television viewer," says Hall. "This series should appeal to a very wide audience — from the urban executive with a few house plants to the suburban gardener and the career farmer."

CARDINAL LAUNCHES LANDSCAPE PROGRAM

Cardinal Industries, the nation's largest manufacturer of modular housing, has launched an ambitious landscape beautification program. In addition to making its apartment developments, Knights Inns, and retirement communities beautifully landscaped areas for cities in 22 states, Cardinal supports a variety of beautification projects. Those projects include planting municipal sites through its "Good Neighbor Seminars" and providing scholarships through the Landscape Design Critic's Association. Cardinal combines its support of the landscape and the visual arts by funding outdoor sculpture projects that involve its plant employees and noted artists.

The variety of projects involves

everyone from the property managers and the nearly 60,000 apartment residents to civic groups and city officials from Southern Florida to Northern Michigan and from the Mississippi River to Chesapeake Bay. This year alone, Cardinal will:

- Plant more than three million flowers to beautify its properties.
- Conduct "Good Neighbor Planting Seminars" in 23 cities and plant more than 10,000 flowers at municipal locations in those cities.
- Plant an average of 3,000 trees and shrubs each week.
- Provide scholarships to landscape architecture and horticulture students.

TURF PESTS CAUSE COSTLY DAMAGE

An estimate of losses by insects on lawns and other turf areas in Georgia were compiled by Rodney Coleman, Randy Hudson, and other members of the Survey and Losses Committee of University of Georgia's Cooperative Extension Service.

As expected, grubs were identified as the insect causing the greatest amount of damage. Many turf professionals in Georgia's coastal plains might argue this point in favor of mole crickets. But grubs, unlike mole crickets, are a statewide problem and not just confined to the sandy soils of the coastal plains. ■

PEST	CONTROL COST	DAMAGE	TOTAL
White grubs	\$2,819,000	\$4,815,000	\$7,634,000
Chinch bugs	\$1,100,000	\$1,100,000	\$2,200,000
Mole crickets	\$1,600,000	\$2,000,000	\$3,600,000
Fall armyworms	\$500,000	\$800,000	\$1,300,000
Misc.*	\$2,856,000	\$3,077,000	\$5,933,000
Total Cost	\$8,875,000	\$11,792,000	\$20,677,000

*Ants (excluding fire ants), billbugs, leafhoppers, sod webworms, earwigs and sowbugs.

Loss estimates for insects and related pests of lawns and turf in Georgia in 1985.

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PEOPLE

Recent staff changes at LESCO, Inc., Rocky River, Ohio, include the appointment of **Phil Gardner** to Vice President of the company's Lawn Care Sales Division. Gardner began his career with LESCO in 1976 as a golf course salesman and was named regional sales manager in the southeastern United States in 1979. In 1983, he became manager of the company's production facilities in Sebring, Florida. Gardner was named a Vice President in 1985.

In other personnel news, **Barbara Craycraft** has been named manager of all LESCO's large volume accounts.

An employee since 1966, Craycraft has served LESCO as receptionist, secretary, manager of inside sales, and manager of the organization's lawn care division.

Bob Coyner joins the LESCO staff as product manager for spreaders and sprayers. He will be responsible for the product development, production, marketing, training, and sales of those



Craycraft



Earl



Camp



Coyner

products.

In prior employment, Coyner was a vice president at Pascoe Equipment Co., Oakdale, Pennsylvania, where he specialized in municipal and green industry sales. He has also served as a supervisor for the City of Pittsburgh Department of Parks and Recreation and as a foreman for the Davey Tree Expert Co.

Bob Earl also joins the organization in the position of director of stores for LESCO Service Centers. His duties include coordinating all merchandising and


operations for the service centers.

In other news, Lebanon Chemical Corporation has promoted **Bud Camp** to the position of Senior Sales Representative of the Midwest Division. He is responsible for sales and service of selected professional turf and garden accounts in Indiana.

Beginning his career with Lebanon Chemical in 1973, Camp was responsible for sales of professional turf and lawn and garden products throughout Indiana, Ohio, and Michigan. ■

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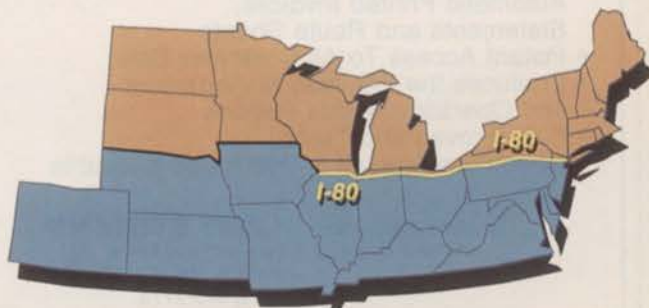
The guarantee: In the event that crabgrass problems do develop, you will be provided Daconate® 6 postemergence herbicide FREE OF CHARGE to control escaped crabgrass.

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If you are located in the brown area on the map, north of I-80 (excluding Nebraska and Iowa), make

one full application of Dacthal at 10.5 lbs. a.i./A in the spring prior to weed seed germination.

South of I-80 and the entire states of Nebraska and Iowa (blue area), Dacthal must be applied on



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a split application program. Make the first Dacthal application at 10.5 lbs. a.i./A in the spring prior to weed seed germination. Make the second Dacthal application at 5¼ lbs. a.i./A, 45 to 60 days later.

Naturally, applications must be made by professional applicators.

So this season, don't kid around with crabgrass. Make your preemergence herbicide Dacthal W-75 or Dacthal Flowable and get guaranteed crabgrass control.

For more information about the Dacthal Crabgrass Guarantee, contact your Dacthal Sales Representative or the Dacthal Distributor nearest you.

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QUESTIONS & ANSWERS

Q. Is there a standard pay scale in the lawn care industry?— *B. Niece, Pennsylvania*

A. From my experience and travels, I can honestly say no. This topic hits all ends of the spectrum, from hourly wages, to weekly salary, to wages and bonus, to commission and wages, to straight commission. Benefits and cost of living for individual areas also figure into what lawn care companies are paying their operators and managers.— *Des Rice, Turf Management Systems, Inc., Mississauga, Ontario*

Q. Should I empty the gasoline from my lawn mowers when they will not be in use for several months? — *R. Neff, Ohio*

A. Gasoline has a tendency to varnish during winter months and gum up the carburetor. To avoid this, add Stabil® to the gasoline and run the engine for a while before storing the equipment.

This is also recommended for storing snowblowers during the summer. — *Gordon LaFontaine, Lawn Equipment Corporation, Novi, Michigan.*

Q. We have a landscaping business in northern Mississippi and we are having problems with poor performance of bermudagrass in shaded areas of home lawns. Do you have any suggestions for improving these turf areas? — *T. Jones, Holly Springs, Mississippi*

A. The new turf-type tall fescues have been found to show very good shade tolerance in trials in the transition zone. They are much more shade tolerant than bermudagrass and can be established from seed. Leaf spot caused by *Drechslera* spp. is a problem on tall fescues in shade areas, especially on susceptible varieties such as Kentucky 31. You should use varieties that have shown improved leaf spot resistance, such as Bonanza, Apache, Mustang, Olympic, or Jaguar to renovate the shaded areas.

When you are renovating these areas, you should use a machine to dethatch these areas if needed, prior to seeding. These same dethatching machines can be used effectively to cover the seed after it has been spread. — *William Meyer, Turf-Seed, Inc., Hubbard, Oregon*

Do you have a burning lawn care question for a member of our Advisory Board? Address your question to **Gordon LaFontaine**, President of Lawn Equipment Corporation; **Dr. William Meyer**, Vice President, Research, Turf-Seed, Inc.; **Des Rice**, President of Turf Management Systems, Inc.; **Dr. Al Turgeon**, Professor and Head of Agronomy, Pennsylvania State University; **Dr. Joseph Vargas**, Professor of Botany and Plant Pathology, Michigan State University; or **Dr. Patricia Vittum**, Associate Professor of Entomology, University of Massachusetts. Submit your question to **Questions and Answers, ALA, 4012 Bridge Avenue, Cleveland, Ohio 44113; 216/961-4130.** ■

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PLCAA UPDATE

The print and broadcast media, particularly local TV stations, continue their assault on the lawn care industry, providing the public with mostly unfavorable, one-sided coverage, according to the Professional Lawn Care Association of America (PLCAA).

Adding fuel to the fire is a new 5-part television program, created by Lorimar Productions of California, which scrutinizes the business of lawn care and highlights the chemical controversy. PLCAA reports that this syndicated series has been sold as an exclusive in 120 markets throughout the United States.

Segments have been pulled from earlier CBS "60 Minutes" and ABC "20/20" reports, and combined with material developed by KIRO-TV of Seattle, Washington. KIRO aired the five-part series in early August, according to the PLCAA. The program has been shown in Green Bay, Wisconsin as well. (Be on the lookout for the series in your area and contact the Association as soon as it is being promoted.)

To help combat such negative media reports, PLCAA offers lawn applicators a handout with how-to tips on responding to some of the questions that customers and potential customers might have.

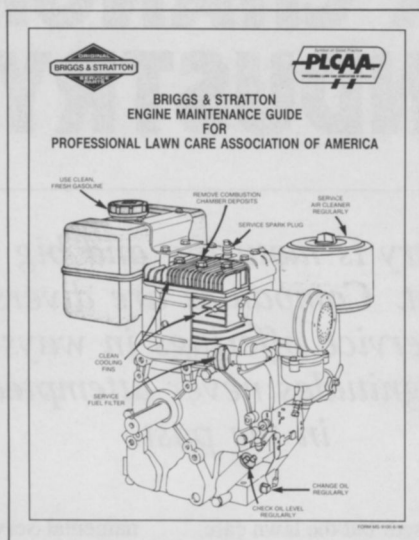
"The scare stories are fiction and homeowners can actually increase their peace of mind by having their lawn professionally treated," according to a PLCAA brochure titled, "The News Media's Lawn Care Scare — Fact or Fiction?"

Here's a sample from the questions and

Adding fuel to the fire is a new 5-part television program, created by Lorimar Productions of California, which scrutinizes the business of lawn care and highlights the chemical controversy.

answers pamphlet: "Fact or Fiction? Lawn care companies arbitrarily can decide which chemicals to make, which to apply to your lawn, the amount to apply, and in what manner. Nobody's watching them."

"Fiction. Professional lawn care companies are very closely regulated, with stiff penalties for any violation. Many reporters seem unaware of the existence and effectiveness of the pesticide regulatory system established by Con-



gress in 1947."

This material is now available and should be particularly valuable if the Lorimar production is aired in your area.

The Environmental Protection Agency (EPA) has recently come out with new hazardous waste management rules for small quantity generators. And though most PLCAA members *don't* qualify as small quantity generators of hazardous waste, some are still uncertain of their status, says the Association. To get a clear picture of your standing, you might want to obtain a copy of "Understanding the Small Quantity Generator Hazardous Wastes Rules: A Handbook for Small Business."

Prepared by the EPA, the booklet was designed to help small business owners and managers determine whether or not

their company is a regulated small quantity generator of hazardous waste, and to help relate how the federal hazardous waste management laws might affect them.

"In recent years, public attention has been focused on the potential for environmental and health problems that may result from mismanaging even small quantities of hazardous waste," reads the brochure. "For example, small amounts of hazardous waste dumped on the land

may seep into the earth and contaminate underground water that supplies water wells."

The publication offers specific information on obtaining an EPA identification number:

"If your business generates more than 100 kilograms of hazardous waste in a calendar month, you will need to obtain a U.S. EPA Identification Number. Transporters and facilities that store, treat, or dispose of regulated quantities of hazardous waste must also have U.S. EPA Identification Numbers. These 12-character identification numbers used by EPA and states are part of a national data base on hazardous waste activities."

The shipping of hazardous waste off-site is also detailed, with the reminder that the three key elements involved are: Choosing a hauler and facility which have EPA identification numbers, packaging and labeling the wastes for shipping, and preparing a waste manifest.

New requirements (most of which became effective as of September 22, 1986) are described, along with instructions to help you meet your responsibilities as a small quantity generator of hazardous wastes.

"The Briggs & Stratton Engine Maintenance Guide" is another brochure available at no cost to members. The Association recommends it as material to be added to your PLCAA Technical Resource Manual or internal Maintenance Manual.

Topics covered include servicing various types of air cleaners, fuel tank recommendations, cleaning the cooling system, and facts about both gasoline and oil.

A detailed troubleshooting guide is provided to determine an area of malfunction should it exist. "Regardless of the engine model or the equipment it powers, there are certain common checks to be made when an engine will not start or operate properly," according to the brochure.

Additionally, the brochure includes an easy-to-follow maintenance schedule for an engine used under rugged conditions. The section describes how to adequately care for the engine throughout the month. "To insure that the equipment is taken care of, assign the maintenance responsibility to one individual. Keep a record of what is done and at what interval — a sample card to help pinpoint problems and anticipate maintenance to the engine will be invaluable." ■

OUR CHANGING INDUSTRY

The industry is maturing and big changes are afoot. Companies are diversifying their service offerings in ways and magnitudes never attempted in the past.

The boom years may have passed, but the lawn care industry still enjoys growth rates equalled by few industries. The industry's maturation process continues and with that process comes an evolution of the services offered by turf care professionals. Although the type of care given urban turf has changed little in recent years, the structure of the companies servicing that turf has undergone some interesting changes.

The characteristics that distinguish one segment of the green industry from another are becoming less distinct. Design/build landscapers and landscape maintenance professionals have traditionally been separate entities performing very different landscape services. Today many design/build landscape companies have made the transition and now offer landscape maintenance services to customers who have retained their design/build services.

Likewise, many lawn care companies that originally specialized in lawn spraying have now expanded their businesses to include many turf-related and non-turf-related property maintenance services. The motivation for undertaking multiple services varies, but in many cases it is a matter of simple economics.

Gary Clayton is now Director of Technical Services for the Professional Lawn Care Association of America in Marietta, Georgia, but prior to his appointment he was Turf and Ornamental Market Specialist for PBI Gordon Corporation and prior to that he was Operations Manager for Bulkem Corporation. So Clayton can draw upon considerable experience when discussing trends in the lawn care industry. He says many lawn care companies seem to be looking at alternate sources of revenue when they make the move to diversify their businesses.

"The entrepreneur who initiated the lawn care company still has that spirit within him," explains Clayton. "The company may be at a comfortable level and he probably thinks he won't gain a dramatic market share, but he is still out-reaching for other revenue sources. A lot of them are pretty creative."

Many lawn care operators have also found that you have to give the people what they want to keep them satisfied. In the case of ornamental care, for instance, Clayton says a lawn care businessman may not be too enamored with the idea of getting into that service, but he has become aware that some of his key competitors have started or-

namental services.

"At that point they realized it was necessary to provide that service for customers they have already acquired. It is a consumer-driven industry," says Clayton. "If the consumer demands a service and somebody else can provide that service, it is an opportunity for that other company to get to that customer."

However, because a lawn care businessman is an entrepreneur, there is little danger of his getting into too many sidelines and spreading himself too thin. Clayton believes the entrepreneur will want to keep his hand in the operation. "It may get to the point where they have a branch manager or assistant whom they have brought along and feel comfortable with managing the lawn care portion of the business," says Clayton. If the owner of the company got into the lawn care industry from another service industry and he knows a lot about the asphalt sealing business, for instance, he may take that service on as a separate division.

Clayton does not see lawn care businessmen diversifying their operations to detach themselves from an industry that has become unpopular due to recent adverse media coverage. "The people who have knowledge of the industry and the products that we use, don't have as big a concern as those people who have gotten into the business from another industry," reasons Clayton. "Sometimes you diversify to hedge yourself against business cycles or other adversities, but I don't think there is a concern within the industry."

Likewise, pressure from bad press and pesticide regulatory restrictions has not seemed to cause an outright exodus of disgruntled operators. More companies have been sold in recent months than in the past, but Clayton says it is just part of a natural business cycle. Many companies have been in business for several years now and have become "ripe" acquisition opportunities for larger companies interested in expanding their operations through buy-outs.

Some industry observers are a little more critical of the lawn care industry than Clayton. Allan Duey, a lawn care industry consultant based in Sioux City, Iowa, feels there is a great deal of unrealized potential in this industry. He says the industry is standing idle in the face of a growing number of local and state laws regulating the use of

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pesticides. "I still see a lack of positiveness coming from the lawn care industry showing what we are doing in the area of pesticide safety," says Duey. "A lot could be done in the off-season to capitalize on pesticide safety."

But even more importantly, Duey perceives a simple lack of business management ability. "People in the business don't have a business sense of where they are," says Duey. "I don't see the individual lawn care person growing. I see a lot of potential, but they need a lot of help in stabilizing their industry." He says only the top 10 percent of lawn care businessmen are concerned about the management aspects of running their operations. "I consult from around my area, all the way down to New Orleans, and I see the same problem all over."

Duey says self-education is the key to improving management skills. "They think the track they developed three to five years ago still pertains to their business," says Duey. "They are not maintaining constant education."

Tree care is a service area where Duey has seen growth. He says lawn service professionals are just beginning to penetrate this market segment. "A few do it, but most are scared of the potential liability in tree spraying," says Duey. "My experience has shown it is no greater than lawn care liability risk."

Tree care is no fearful subject for T. Irvin Dickson, President of Native Tree, Alpharetta, Georgia. Since he is also President of the Associated Landscape Contractors of America (ALCA), Dickson has a unique perspective on the professional landscape industry. There are now more ALCA members who are multiple discipline contractors, according to Dickson. At one time the industry was dominated by contractors who specialized in landscape installation. Now more contractors are doing maintenance and interior landscape work, in addition to land-



Allen Duey



T. Irvin Dickson



Gary M. Clayton

scape installation. "Many installation contractors now have an irrigation division," notes Dickson.

The definition of the term "landscaper" is changing all the time. "There is no question that the term landscaper now has a much better connotation than it once had," says Dickson. "Now so many landscapers are very professional." The growth in professionalism has been reflected in improved education and experience levels, quality work, and in better business management skills. Dickson says the ALCA has been very active in education services for its members. "People want more education and they are displaying that on the job," claims Dickson.

Much of the growth in the landscape maintenance segment came with the recession of the late 1970s and early 1980s, according to Dickson. Prior to that time, many landscape installation contractors were living from one installation job to the next. The contractors had no regular monthly billing revenue to rely upon, which is one of the blessings of the landscape maintenance business.

"They wanted some sort of contract that was at worst nine months out of the year and at best 12 months out of the year and have a monthly income," says

Dickson. "Some of them just got away from installation altogether." Since new housing construction was also down during the recession, there was also less installation work available. Then, as new construction came back strong in the 1980s, both businesses grew.

Clarence Davids, President of Clarence Davids and Sons, Blue Island, Illinois, is one landscaper who is no newcomer to the landscape maintenance field. Davids' company has been performing landscape maintenance for its customers for 37 years. His years in the business and position as President of the Professional Grounds Management Society have allowed him to form some definite opinions about the state of his industry.

Davids agrees with Dickson that the title of landscaper once carried little prestige, but he believes the industry has taken great strides in recent years. "Today we have set ourselves on a professional level," says Davids. "Our suppliers and our customers have helped us. It has been slow coming, but it is getting there."

Like Dickson, Davids also says it is difficult to find a landscaper who is strictly design/build today. "The majority of them have three or four divisions within the corporate structure," says Davids. "It is a matter of economics, but it is also an offering to the client."

Before it was common to find companies who offered maintenance services to their design/build clients, consumers had to contract with more than one company to design, build, and maintain their properties. Now, Davids says many companies handle the entire package without sub-contracting any of the work. "It is advantageous for the client because now he is paying a larger sum of money and he demands more attention, whereas the maintenance might only be \$20,000 and the lawn care \$5,000, so the total contract could be substantially larger," reasons Davids. "It is good for the contractor and it is good for the buyer."

The growing interest in landscape maintenance as an added service has not been limited to exterior landscape

SATURATION STATS

The industry is indeed changing, and attitudes about market saturation, for instance, are indicative of this point. Market saturation is a phrase that has been banded about for years. When we conducted a survey of our readership in December, 1984, 16 percent of the respondents were convinced that their market areas had reached saturation. (We defined saturation as ranging between 60 and 90 percent of market potential.) Seventy percent did not believe they had yet experienced market saturation,

while 14 percent were undecided.

This summer we conducted another survey in which we again asked *ALA* subscribers if they thought their markets had reached saturation. This time, 35 percent reported that areas of their markets were truly saturated, while 63 percent said their markets were not saturated and only 2 percent were undecided. Whether or not a true saturation condition exists, considerably more businessmen are convinced that their markets are saturated than were convinced two years ago.

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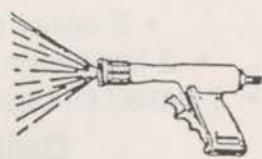
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maintenance. Interior landscape maintenance and installation is said to be the fastest growing segment of the green industry. Increased attention to the beautification of shopping mall and office complex interiors has created a booming business for professionals who install and service plants in those environments.

Terry Peters, Executive Director of ALCA, has only been on the job for one year, but he has already noticed a growing number of professionals crossing over into interior "plantscape" work. "Many of the members of our association are starting up interior divisions," says Peters. "They are seeing that perhaps there is not the difference between the two areas that was once perceived."

In talking with professionals in other trade associations, Peters has concluded that it is much more difficult to distinguish between exterior and interior service companies than even two or three years ago. "As we went through our membership list and tried to quantify how many of our members were strictly exterior and strictly interior," says Peters, "that great gray area in the middle was much larger."

Until recently, the interior landscape design, installation, and maintenance industry was represented by the Interior

Plantscape Association. But because there is so much overlap now between professionals involved in both disciplines, the Interior Plantscape Association has signed an agreement with the Associated Landscape Contractors Association forming a new ALCA division called the Interior Plantscape Division.

"We see that as a really positive con-

Terry Peters, Executive Director of ALCA, has only been on the job for one year, but he has already noticed a growing number of professionals crossing over into interior "plantscape" work. "Many of the members of our association are starting up interior divisions," says Peters.

solidation," says Peters. "It allows one staff to do what two staffs and two sets of leadership were doing in a somewhat competitive way. I'm not against competition, but it was draining a lot of resources that could have come back into member services." ALCA is now 25 years old and IPA was about eight years old when the consolidation took place.

Things aren't quite so rosy in ALCA's

Landscape Maintenance Division. ALCA members engaged in lawn care applications are experiencing the same problems experienced by PLCAA members. Peters says the recent adverse media coverage has been felt within ALCA ranks. The experience of one Midwest ALCA regional director is anecdotal of the kind of pressure the industry is under. Peters says

this director's daughter "really caught some grief at school" after the "20/20" program aired this summer. Peters says his association is working with PLCAA to counter the effects of the bad press.

"A good news story sells," says Peters. "A good story sometimes walks the fine line between sensationalism and appropriate attention to both sides of an issue." For the sake of making an impact,

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Peters says a sensational image is sometimes substituted for the dry facts.

Because of increased scrutiny by the public, among other things, being a landscape maintenance professional now requires a higher degree of sophistication than in the past. "To stay in the business, you must have a business acumen that was not necessary several years ago," notes

ranks.

"A lot people get in and a lot of those companies fail in the first three or four years," says Peters. "To stay in this business now requires business sophistication." He says ALCA's membership services now focus more intensively upon business education to help new members weather the storm. "If they

mand for landscape maintenance. Lawn service professionals who got into the business by spraying lawns are now taking on other auxiliary services like aerating and ornamental care. Many are becoming total property service companies in an effort to capture all of their customers' exterior maintenance needs, increase the revenue derived per customer, and extend the company's working season.

But whether a company wants to add on a service like asphalt sealing or interior plant care, all the experts agree that a higher level of business management skills is necessary to succeed in today's marketplace. Because of increased exposure to the industry, consumers are now more demanding of the companies that service their properties. The adverse media coverage this summer has also increased the public's scrutiny of the industry's practices.

The business environment has changed. But the industry is also changing to cope with those changes. The growth potential is still there; it's just a little more difficult to keep a company growing these days. — *Tim Weidner*

The author is Managing Editor of ALA magazine.

Diversification seems to be the name of the game in both the landscape and lawn servicing industries for the rest of the decade. Landscapers who were once solely concerned with landscape design and/or installation are now forming company divisions to handle the growing demand for landscape maintenance.

Peters. "Margins are different and the quality of work is different."

However, Peters is quick to admit that landscape maintenance is still the profession of opportunity. "People can get in without an extraordinary amount of capital and make a run at it," says Peters. Nevertheless, he says a classic small business syndrome is responsible for considerable attrition in the membership

want to stay in the industry, ALCA has tried to position itself to get them the necessary education."

Diversification seems to be the name of the game in both the landscape and lawn servicing industries for the rest of the decade. Landscapers who were once solely concerned with landscape design and/or installation are now forming company divisions to handle the growing de-

SEAL COATING SIDELINE

More and more lawn service and landscape maintenance companies are looking for add-on services. Some professionals are beginning to cast hungry glances at their customers' asphalt driveways.

Looking for a sideline? Lawn service and landscape maintenance professionals are now more interested in ways to diversify their businesses than ever before. Many choose related services like ornamental care or aerating, but some operators are turning to services that have nothing to do with plant care. Don Schaefer, President of Midnight Maintenance in Spring Hill, Florida, has begun offering his customers an asphalt seal coating service.

Schaefer purchased a Jevco Manufacturing Black Magic asphalt seal coat machine in May of this year and says he swears by it. "I made maintenance contracts with 26 Burger King stores to take care of all their outside maintenance, including parking lots, vacuuming, landscaping, striping, and sealing," says Schaefer. He had done asphalt sealing about 10 years ago and had operated an equipment repair shop in New York before coming to Florida, but had never gotten into the asphalt business for himself until this year.

"Doing the work itself isn't bad at all," claims Schaefer, "the problems lie with people and being able to close lots down. When you are working with fast food, they don't want to be closed down at all and you have problems."

Schaefer buys his sealing material from a local company and he says there really isn't a great deal of expense associated with operating the seal coating machine, as long as you don't have to spend too much time on each job. "Time is money, so if you can get in and do a job and get out, you are OK," says Schaefer. "We had one store we did over in Tampa that we spent 10 days on. If you spend 10 days, you aren't making any money."

Schaefer tries to avoid jobs that involve the more labor-intensive job of patching asphalt and repairing pot holes. Thus far, he really hasn't done too much advertising of his service and the work he has gotten aside from the Burger King stores have been through word of mouth. "We

are going to start advertising in our area soon," says Schaefer.

Schaefer got his asphalt machine from distributor Jim England, President of England Associates, Inc., Oldsmar, Florida. England sells asphalt maintenance machinery nationwide. "Most of our customers are paving or asphalt maintenance contractors," says England. After some lawn maintenance operators contacted England about getting into the asphalt sealing business, he did some investigating and found that seal coating would be an ideal add-on service for lawn maintenance people because they already had contact with consumers in need of asphalt maintenance.

"Anywhere they are doing lawn maintenance generally has either a parking lot or a home driveway," says England. "If they are doing a satisfactory job in their lawn work, it is very easy for

short time without proper maintenance. Without regular seal coating treatments, England says asphalt will crumble within eight to 10 years. And replacing asphalt is generally about 10 times more expensive than seal coating, according to England. "If you seal coat a property on a regular basis, it should last three to four times longer than it normally would," says England.

Is there a lot of competition for asphalt sealing? "Nationally, only about 5 percent of the asphalt that should be sealed is being sealed," says England. "They are putting new asphalt down at 10 times the rate that people are seal coating."

Seal coating normally does not require any special licensing, and England says it is easy to learn and do. But since most lawn maintenance operators have no experience in seal coating, England has set up a training program which is included

Seal coating normally does not require any special licensing, and England says it is easy to learn and do. But since most lawn maintenance operators have no experience in seal coating, England has set up a training program which is included in the cost of purchasing one of his machines.

them to tell the property owner that their asphalt needs to be taken care of with their seal coating service."

Asphalt seal coating should be attractive to lawn maintenance businessmen because England says the profit margin is much greater than that of lawn maintenance. "The difference is that you do it once a year or once every other year," says England. "The cost, of course, is much greater. Instead of doing a \$25 or \$40 a week contract, you may do a \$5,000 or \$10,000 sealing job."

Seal coating is fairly easy to sell because asphalt deteriorates in a relatively

in the cost of purchasing one of his machines. Training takes place at England's facilities in the Tampa area and trainees are encouraged to stay as long as it takes to become comfortable with the operation of the machine. "Generally speaking," remarks England, "within two to three days they are very competent at seal coating. When we are comfortable that they know what they are doing — the repair work, the mixing, the application — then we give them a training certificate showing that they have been trained by the factory. Their customers can see that they are not some



fly-by-night outfit."

The purchase price of the machine also includes a marketing package. "We put together some professional literature that is complete for residential and commercial properties and industrial complexes," says England. "We also give them contract brochures and advertising literature they can take to their printer and have their name printed on it."

"It is almost a turnkey operation for them," says England. "We know they are already in business and they haven't got time to build a new business from scratch." England says the lawn maintenance business will not have to add any additional people to its crews. The average driveway takes about a half-hour to seal coat. While the crew is servicing the rest of the property, England says two

technicians can seal coat the driveway.

England just started selling the machines to lawn maintenance operators this year, but already there are numerous companies using the machines nationwide. "In Florida alone, we have had 200 responses back from lawn care companies interested in getting into this business," says England. He says an operator can get into the business for the price of a large riding lawn mower. The company's 200-gallon unit that can mount in the bed of a pickup truck costs \$7,000. The 350-gallon trailer-mounted unit is big enough to do 23,000 square feet with two coats, which is about 20 driveways, and costs \$9,800.

There are also trailer-mounted units in 200-gallon capacity, 550-gallon capacity, and 700-gallon capacity. The 1,100-, 1,600-, and 2,000-gallon units are truck-mounted. England has marketed the machines for 20 years and he says 20-year-old units are still operating in the field.

If you would like more information about asphalt seal coating with Jevco machines, contact Jim England, England Associates, Inc., 801 Dunbar Avenue, Oldsmar, Florida 33557; 813/855-1519. — *Tim Weidner* ■

JEVCO'S ASPHALT MACHINE

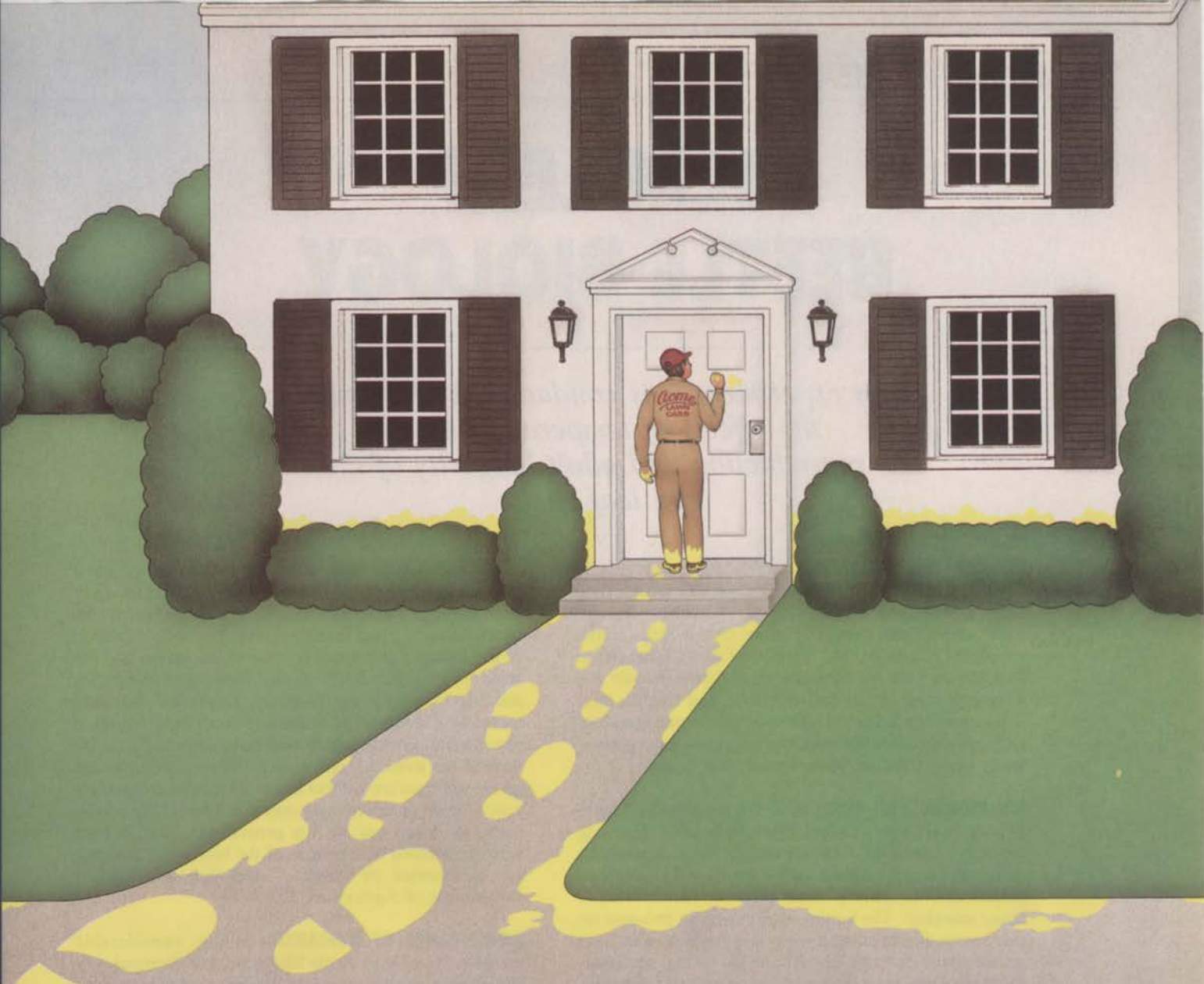
The Jevco Manufacturing Company Black Magic® asphalt seal coating machine can be loaded with 700 gallons of raw product and mixed at the job site, allowing coverage up to 75,000 square feet. The unit can be loaded with one tank of raw product, the other tank mixed product. When the mixed product side is emptied, you can draw from the raw product side and remix another batch. This allows you to mix sand coats or clear coats as you go.

The unit features an 18 horsepower, twin-cylinder I/C engine with 12-volt electric start and a 6-gallon fuel tank. There is a lockable tool box and engine compartment. It has 15 feet of suction

or transfer hose with couplings. There are built-in tank clean outs. Product indicators tell you at a glance how many gallons of material are in the tanks at any given time. A fully adjustable spray boom sprays a 9-foot-wide path, adjusts in and out, up and down.

The tandem axle is 12,000-pound rated with heavy-duty truck wheels and 15-inch tires. There are dual controls for agitator and pump. The trailer features a large working platform for sand or equipment. The 45-gallon water tank has a water pump and 25 feet of hose and spray nozzle for easy clean up.

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ELM LEAF BEETLE BIOLOGY

An experiment was conducted to determine the effects of temperature on the reproduction and adult longevity of the elm leaf beetle.

The elm leaf beetle (ELB), *Pyrrhalta luteola* (Muller), is a common pest of elm trees in the United States. It is a native of southern Europe and initially appeared in the United States in the vicinity of Baltimore, Maryland in 1835 (3). Elm species attacked include the Siberian elm, *Ulmus pumila* L.; American elm, *Ulmus americana* L.; and English elm, *Ulmus procera* Salisb. (1). Occasionally, pure stands of elms are damaged, but usually elms grown as ornamental or shade trees are more heavily infested.

DESCRIPTION AND LIFE CYCLE. The adult beetle (Figure 1) is about 1/4-inch long and yellowish in color. The wing covers are olive with black stripes. The insect overwinters in the adult stage in houses, attics, sheds, and in protected places out-of-doors (e.g. under the loose bark of trees or house shingles). The beetles often become a nuisance inside homes during autumn when they begin to search for suitable overwintering quarters. In the spring, the adults fly back to elm trees. Females lay clusters of yellowish-orange colored eggs (Figure 2) on the undersides of leaves.

The eggs hatch in about one week as black, grub-like larvae. Mature larvae (Figure 3) are pale yellow, about 1/2-inch long with two black stripes running down their backs. Fully developed larvae move down to the base of the tree where they pupate in crevices in the bark. Pupation (changing to the adult stage) may also take place in sidewalk cracks, lawns, and under stones or other litter on the ground.

The adult beetles that emerge in the spring eat small circular holes in the expanding leaves. Upon hatching from the eggs, the larvae begin to feed on the undersides of the leaves. Larval feeding results in a skeletonization of the foliage. The upper surface of the leaves and the veins are left intact. Badly affected leaves soon turn brown and drop from the tree prematurely. Trees which lose their leaves as a result of ELB damage commonly put out a new flush of growth which may be consumed by the insects if the trees are not treated. When conditions are severe and trees are without leaves for several consecutive years, limbs or entire trees may die. Depending on climate, there are one to five generations of ELB each season. Detailed descriptions of the biology of this pest are documented by Baker (1) and the United States Department of Agriculture (10).

SIGNIFICANCE OF RESEARCH. While considerable literature is available on the life history and chemical control of ELB, relatively few biological studies have been

TEMP. (Celsius)	MEAN +/- SE**	RANGE
15.6	54.0 +/- 3.23 a	16-130
22.2	25.5 +/- 0.99 b	5-42
28.8	14.9 +/- 0.69 c	4-26
32.1	14.2 +/- 0.87 c	2-29
36.1	9.7 +/- 0.37 d	8-21

Table 2. Longevity (Days) of ELB adults at five constant temperatures ** Is 25 females and 25 males per constant temperature*. * Means followed by the same letter are not significantly different (P 0.05) LSD.

TEMP. (Celsius)	TOTAL NO. EGG CLUSTERS*	TOTAL NO. EGGS*	CLUSTERS PER 5 FEMALES MEAN + SE**	EGGS PER CLUSTER MEAN+SE**
15.6	47	429	9.4 +/- 3.67 c	9.1 +/- 1.10 b
22.2	294	3828	58.8 +/- 8.45 b	13.0 +/- 0.47 a
28.8	250	3527	50.0 +/- 8.70 b	14.1 +/- 0.52 a
32.2	479	3457	95.8 +/- 14.57 a	7.2 +/- 0.25 b
36.1	49	325	9.8 +/- 1.68 c	6.6 +/- 0.73 b

Table 1. Fecundity of ELB females at five constant temperatures. * Represents total from 25 females reared at each temperature. ** Means followed by the same letter are not significantly different (P 0.05) LSD.



Figure 1. Elm leaf beetle adult (left). Figure 2. Elm leaf beetle egg cluster (below). Figure 3. Elm leaf beetle larvae (right).

conducted. The impetus to examine the effects of temperature on ELB reproduction and adult longevity resulted from this paucity of information and the research of King et al. (6,7) on the effects of temperature on ELB egg, larval, and pupal development. The objective the present study was to develop information on the optimum temperatures for laboratory rearing and to improve our understanding of how temperature affects populations of ELB in the field.

METHODS AND MATERIALS. ELB adults were observed for egg production and longevity in Percival controlled temperature chambers at five separate temperatures (15.6, 22.2, 28.8, and 36.1 degrees Celsius). The photophase for all tests was 16:8 h (L:D). Newly emerged adults, incubated as pupae at 28.8 degrees Celsius, were placed on Siberian elm foliage that was cut from native stands in Stillwater, Oklahoma. The foliage ranged from one to four weeks in age.

The cut ends of two terminal branches approximately 10 centimeters in length were inserted through a 100 millimeter funnel and placed into a 120 milliliter jar containing Hoagland's solution (4). Tissue paper was used to seal stems in the funnel and prevent beetles from falling into the solution. A rubber stopper was placed around the stem of the funnel to secure it in the neck of the jar. A paper towel wrapped over the mouth of the funnel prevented beetle escape. Foliage was replaced daily.

Ten beetles (five females and five males) were reared on each two-terminal rearing unit. Females and males were distinguished from each other by methods described by Webber (12). Each rearing unit was replicated five times at each constant temperature. Mortality and oviposition (number of egg clusters and number of eggs per cluster) were recorded daily. The experiment was terminated when all the beetles had died.

RESULTS AND DISCUSSION. Egg production was maximal at the three intermediate temperatures and relatively low at the two extreme temperatures (Table 1). Although significantly more egg clusters were laid by females reared at 32.2 degrees, significantly more eggs



were produced per cluster at 22.2 and 28.8 degrees. Previous studies from the field, report larger egg clusters than those reported in our study. Wene (14) and Weber and Thompson (13) reported egg clusters averaging 14.8 and 18.9 eggs, respectively. The largest egg cluster found in this study occurred at 32.2 degrees and contained 44 eggs. Webber and Thompson (13) reported a field-collected egg cluster numbering 47 eggs.

The mean duration of an adult's lifespan ranged from 54.0 days at 15.6 degrees to 9.7 days at 36.1 degrees (Table 2). There was no significant difference between the mean lifespans at 28.8 and 32.2 degrees, but significant differences were found among the mean lifespans at all other temperatures. The range in longevity at 15.6 degrees was extreme, with one adult living 130 days. Beetles reared at 36.1 degrees exhibited little movement or feeding activity.

The mean lifespan of ELB adults in this study was shorter than that reported by other researchers. Wene (14), in Arizona, observed a mean longevity of 30 days for adults reared at approximately 25 degrees Celsius. Luck and Scriven (8) found that 50 percent of a test population of California ELB adults remained alive for nine to 11 weeks at 22 degrees. In contrast to our

methods, the beetles in the aforementioned studies were reared individually.

We also noted a difference in coloration between the adults reared under different temperatures. Individuals appeared dark olive-green at 15.6 degrees, yellow-green at the three intermediate temperatures, and orange-yellow at 36.1 degrees. Under natural conditions in Okla-

Although significantly more elm leaf beetle egg clusters were laid by females reared at 32.2 degrees, significantly more eggs were produced per cluster at 22.2 and 28.8 degrees.

homa, ELB adults are usually yellow-green during the summer and dark olive-green during the early spring and overwintering period. Since it is known that dark colored insects can absorb more radiation than paler ones (2), we speculate that the variations in ELB coloration may relate to the differences in the heat regulation or light exposure of the species.

Temperature- or photoperiod-controlled color changes have been discovered in several insect species (5,9,11,15). We theorize that seasonal differences in ELB coloration may tend to improve the beetle's ability to absorb solar heat and maintain the internal temperature at a favorable level. Clearly, further physiological and ecological data are necessary before the adaptive significance can be established. — James E. King, Richard G. Price, and Kenneth N. Pinkston. ■

The authors are entomology graduate student at Purdue University and entomology professors at Oklahoma State University, respectively. This research was conducted while James King was a graduate student at Oklahoma State.

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SPREADERS: THEORY VS. RESULTS

Rotary spreader test results have to be compared to results in the field to judge their worth.

How meaningful are rotary spreader pattern tests? Do the results of pattern tests give a true indication of what happens when a spreader is used on turf? Several different pattern sample collection methods can be used to evaluate patterns. Which method best correlates with turf response? A recent study by the Louisiana Agricultural Experiment Station addressed these questions and came up with some interesting answers.

An earlier study at the Louisiana Agricultural Experiment Station demonstrated that different methods of collecting samples in spreader pattern tests can result in significantly different evaluations of the same spreader pattern (see "Is Spreader Data Reliable?" *ALA*, January, 1986, pp. 56-60). Depending on the method used to collect pattern samples for a given spreader pattern test, the spreader may appear to have a very even distribution pattern or a very uneven pattern. The method used to collect pattern data definitely biases the results obtained. This work has now been taken a step further. The results of three different collection methods were compared to the agronomic response to the spreader pattern when applied to turfgrass.

TEST PROCEDURE. A Scott Proturf model R-8 rotary spreader and StaGreen 28-0-14 fertilizer were used for this research.



Figure 1. Laboratory test procedure showing simultaneous collection with three types of catch pans.

Three collection methods were selected from the 12 methods discussed in the previous *ALA* article. These three systems represent the three major categories of collection methods now in use at different test locations (rectangular catch pans with internal grid, long V-shaped trays, and a floor divided into long strips). The details of the collection devices are given in Table 1. The reference numbers given in

this table correspond to the numbers in the previous article. All three methods catch samples at 6-inch intervals. Only method 2A fully satisfies standard S341.1, Test Procedure for Dry Fertilizer Spreaders, of the American Society of Agricultural Engineers. The collection devices used in method 4A are identical to those used by at least one spreader company. Method 6A is similar to that used by the Prairie Agricultural Equipment Institute, a government testing service in Canada.

The first phase of the test consisted of determining the performance of the spreader and the selected fertilizer in the laboratory using the three methods. Several test runs were made using collection method 2A to determine a pattern setting and nominal swath width for use in the rest of the test program. After a width was determined, the impeller was removed from the spreader and the spreader was run on a laboratory test stand to determine

NUMBER	COLLECTION METHOD
2A	5.5 inches wide by 15 inches long rectangular pans, 2 inches high, with 3.75-inch by 2.88-inch subdivisions. Pans spaced 6 inches on center.
4A	48 inches long V-shaped pans, 2 inches high, no subdivisions. Pans spaced 6 inches on center.
6A	No pans; floor divided into 6-inch wide by 48 inches long areas by inverted V-shaped metal dividers.

Table 1. Collection methods used for pattern testing.

the rate setting to be used and the exact delivery rate at that setting. For the material and spreader selected, a width of 12 feet was optimum. The desired delivery rate was 1.0 lb. N/M (pounds of nitrogen per 1,000 square feet). The closest setting on the spreader actually delivered 1.01 lb. N/M at 3 mph.

After the settings were determined, a replicated test was run using the three collection methods. All three collection methods were used simultaneously as shown in Figure 1. This test was replicated three times. The data from this lab test were analyzed using a computer. For each test run, mean measured delivery rate, coefficient of variation, pattern skewing, and minimum and maximum points in the overlapped pattern were calculated. Coefficient of variation is a measure of the uniformity of the spreader pattern. The lower the coefficient of variation, the better the pattern.

Coefficients of variation below 10 percent are excellent; 10 to 20 percent is typical for a very good rotary spreader. Pattern skewing is a measure of the amount of the material thrown to the left side of the pattern compared with the material thrown to the right. A 50-50 distribution is normally desired. The overlapped patterns were based on back-and-forth operation, the system used by most applicators.

A standard was needed for evaluating

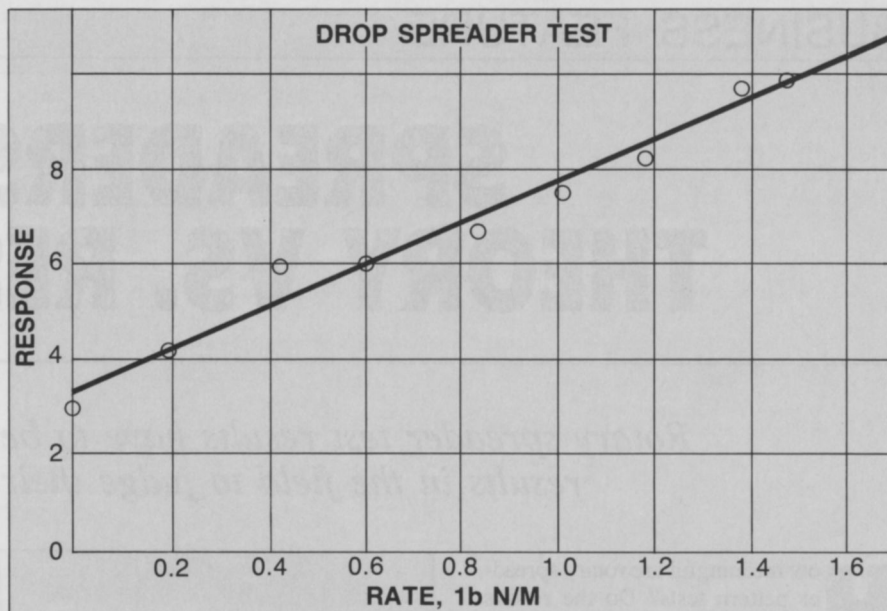


Figure 2. Results of drop spreader test on turf. Response, expressed as a turf quality rating, is shown as a function of rate applied. Response is on a scale of 1 to 10, with 10 indicating the best turf quality. The regression equation for this data is: $y = 4.43x + 3.37$

the field results. To provide a standard, uniform pattern at a known delivery rate on the turf, a Gandy Turf Tender drop spreader was used. The spreader was calibrated for the fertilizer product on a laboratory test stand at a speed of 3.0 mph. Settings were developed for nominal rates ranging from 0.2 to 2.0 lb. N/M in increments of 0.2 lb. N/M. Since incremen-

tal spreader settings were used, the actual delivery rates determined from the test stand data were used for the analysis. These rates are shown in Table 2.

A field test was conducted on a Tifgreen bermudagrass putting green turf at the Burden Research Plantation in Baton Rouge, Louisiana. A large rotary spreader plot area was laid out to allow five back-and-forth passes at the optimum swath width of 12 feet. The total rotary plot area was 60 by 40 feet. An area 36 by 8 feet at the center of the rotary plot was the only portion on which data were collected. This area had three full, uniform, overlapped swaths. The drop spreader plots were laid out on the same putting green area adjacent to the rotary test area. The drop spreader plots were 2 by 4 feet and were randomized and replicated three times.

All plots were treated with the appropriate spreader and rate on June 23, 1986, and again on July 7, 1986. The settings developed in the laboratory were used, and the spreaders were pushed at 3.0 mph for all tests. Turf response was evaluated on July 14, 1986. The criterion for turf response was visual turf quality ratings.

The rotary spreader plot area was divided into subplots to allow evaluation of the turf quality of different strips in the overlapped patterns. Six strips, each 2 feet wide by 8 feet long were marked out in each of three adjacent overlapped patterns. The strips were parallel to the direction of spreader travel. Each of these strips was evaluated separately. Using this method, it was possible to compare the agronomic response (turf quality ratings) of the turf in individual, replicated 2-foot

THEORETICAL DELIVERY RATE, lb N/M	MEASURED ACTUAL RATE, lb N/M	TURF QUALITY RATING, 1 to 10
0.0	0.00	3.0
0.2	0.19	4.2
0.4	0.41	6.0
0.6	0.60	6.0
0.8	0.83	6.8
1.0	1.01	7.7
1.2	1.18	8.3
1.4	1.39	9.7
1.6	1.48	10.0
1.8	1.82	8.8
2.0	2.06	9.7

Table 2. Drop spreader test data. Delivery rates based on laboratory test stand data are compared with turf response in the field. Response, expressed as a turf quality rating, is shown on a scale of 1 to 10 where 10 is the best quality. Quality figures are the mean of three replications.

COLLECTION METHOD	SKEWING %L %R	COEF. OF VAR., %	MIN/MAX % OF MEAN	INDIC. RATE lb N/M
2A	47/53 b	11a	79/124 b	1.14 c
4A	49/51 b	15 a	77/132 b	0.45 b
6A	40/60 a	53 b	36/236 a	0.38 a

Table 3. Comparison of apparent spreader performance based on swath width of 12 feet. These data are based on laboratory testing. *Entries followed by the same letter are not significantly different at the 5 percent level, based on Duncan's multiple-range test.

(continued on page 34)

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LOCATION, FT.	PREDICTED RATE, 1b N/M			ACTUAL QUALITY	INDICATED RATE, 1b N/M
	Method 2A	Method 4A	Method 6A		
5 left	1.11	0.46	0.45	7.7	0.98
3 left	1.07	0.43	0.29	7.5	0.93
1 left	1.14	0.41	0.17	7.8	1.00
1 right	1.20	0.44	0.23	7.7	0.98
3 right	1.26	0.45	0.40	7.7	0.98
5 right	1.15	0.44	0.66	8.7	1.20

Table 4. Field results from rotary spreader test. The mean response and the corresponding rate based on the prediction equation are shown for each subplot in the rotary spreader overlapped pattern. Response, expressed as a turf quality rating, is shown on a scale of 1 to 10, where 10 denotes the best quality.

SPREADER

(continued from page 32)

increments of the overlapped rotary pattern with the agronomic response at known incremental levels of fertilization (in the drop spreader plots). The plots were evaluated using a visual scale of 1 to 10, where 10 represents the best turf quality.

RESULTS. Table 3 shows the results of the pattern test in the laboratory. These observed delivery rates are different for the different collection methods. This issue of rate differences can easily be resolved by comparing the rates from the pattern tests with the rate data obtained from the spreader test stand. Since the test stand catches all of the material discharged from the spreader, it is known to be accurate. The rate developed on the test stand in this case was 1.10 lb. N/M. Method 2A yielded the rate closest to this figure, 1.14 lb. N/M; thus, method 2A gives the most accurate prediction of rate.

	LOCATION IN PATTERN, FT.					
	5 left	3 left	1 left	1 right	3 right	5 right
Method 2A	8.3 c*	8.1 d	8.4 c	8.7 c	8.9 c	8.5 c
Method 4A	5.4 a	5.3 b	5.2 b	5.4 b	5.4 a	5.4 a
Method 6A	5.4 a	4.7 a	4.1 a	4.4 a	5.2 a	6.3 b
Field response	7.7 b	7.5 c	7.8 c	7.7 c	7.7 b	8.7 c

Table 5. Comparison of predicted response and observed response in the field for each subplot in the rotary spreader overlapped pattern. Response, expressed as a turf quality rating, is ranked on a scale of 1 to 10, where 10 denotes the best quality. *Entries followed by the same letter are not significantly different at the 5 percent level, based on Duncan's multiple-range test.

In the earlier study of spreader test methods, there were significant differences in the patterns predicted by method 2A compared with methods 4A and 6A. In this current test, there was no significant difference between the patterns predicted by method 2A and method 4A, but method 6A gave results that were significantly different.

Table 2 shows the results of the drop spreader tests on the turf, which serve to provide a way of quantifying the rotary results on turf. The relationship between

the rates applied with the drop spreader and the turf quality response is plotted in Figure 2. A linear regression analysis was performed using the data from 0.0 to 1.48 lb N/M. Additional nitrogen provided no further response, thus the trend in the data was not linear beyond this point. The linear regression equation for this data is: $y = 4.43x + 3.37$; where y equals turf quality response and x equals rate, pounds N/M.

The correlation coefficient for this equation is +0.99, indicating a very good fit. We can reasonably expect this equation to predict accurately the quality response to a given level of fertilizer (but only for this particular fertilizer, turf, weather, and moisture conditions, etc.). Since both the rotary spreader plots were applied under identical conditions on the same day and in the same plot area, we can assume that the response equation is applicable to all plots in the test.

Tables 4 and 5 show the results of the rotary spreader test on the turf plots. Table 4 compares the fertilization rates indicated by the three collection methods in the laboratory with the actual rate on the turf determined by applying the prediction equation from the drop spreader plots to the turf quality response in the rotary spreader plots. This information is shown graphically in Figure 3. Table 5 shows the same data presented in a different manner. The turf quality response predicted by the laboratory tests for each 2-foot subplot in the overlapped spreader pattern for each test method is compared with the observed turf quality. The turf quality predicted by methods 4A and 6A is sig-

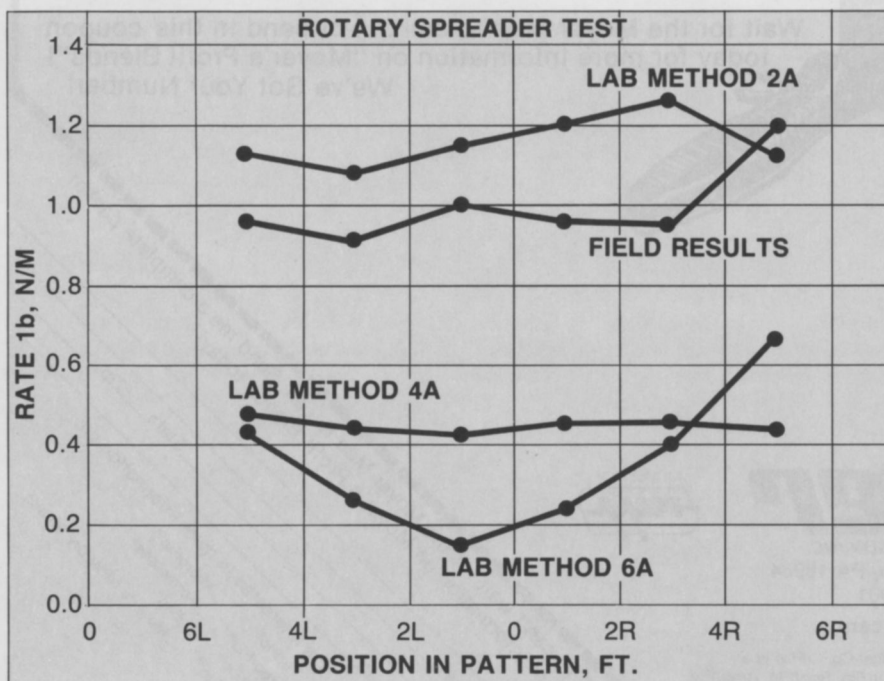


Figure 3. Comparison of the rate observed in the field with the rates predicted by the three collection methods for each subplot in the rotary spreader pattern.

(continued on page 46)

TALES OF THE TRADE

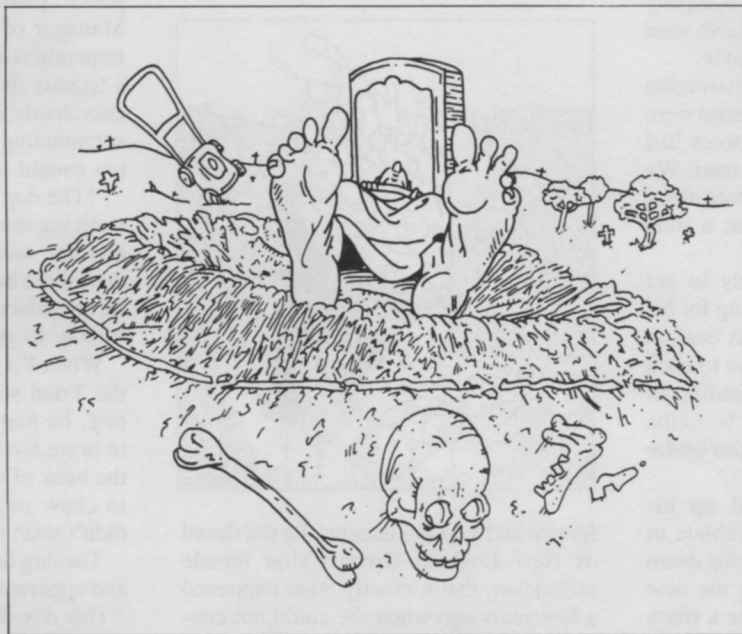
With so much doom and gloom in the news these days, we decided it was time to look at the lawn care industry in a lighter vein by sharing some of your humorous and harrowing on-the-job escapades.

Who runs faster — and often jumps higher — than Superman to escape chasing dogs? Who tiptoes around automatic sprinkler heads as carefully as Indiana Jones dodges slithering snakes? Who knows how to discreetly exit when stumbling upon nude bathing beauties? Who has the sense of humor to laugh in the face of all these trials and tribulations? It's the lawn care professional!

The typical homeowner may view a lawn care operator's occupation as a quiet profession of pulling spray triggers and operating other lawn care equipment, but those in the field know that most technicians uncover an unknown talent each day on the job. For instance, their encounters with menacing pets have revealed their expertise in animal training; their exposure to sunbathing exhibitionists has unveiled their true self control; and dealing directly with customers has proven their skills in public relations and psychology.

The fact of the matter is that the lawn care business is far from boring. While both serious and professional in nature, the industry nonetheless has its share of comedy, hair-raising adventure, and horror stories to make known.

CEMETERY CAPERS. Let's go right to the chilling — that is, if you're not superstitious or fearful of ghosts, goblins, and other ghouls. Some lawn care operators have good reason to be. John Kenney, Operations Manager of New England Green, Springfield, Massachusetts, vividly recalls an incident that occurred a few



years ago in a cemetery near Boston.

"This particular cemetery was very old," he remembers. "It had the kind of tombstones that were hand-etched."

On this particular day, Kenney and his crew were performing a growth regulator application. "A few of us were walking along and suddenly one of our technicians disappeared!" Kenney exclaims.

"You got it! The ground and the old wooden coffin caved in underneath the technician's feet. There he lay in the coffin next to the bones with the dirt and rotted wood caved in around him."

While at the time it certainly wasn't funny for the poor boy who fell six feet under, Kenney now teases, "We lose more good technicians that way."

In another cemetery antic, it was the bereaved visitors of the deceased, not the technician, who were shockingly alarmed. Rich Blakley, President of Blakley Lawn, Inc., Springfield, Illinois, describes his experience. "One time we were spraying cemeteries and the emergency brake on the truck went out."

To avoid a runaway vehicle scene, one of Blakley's technicians borrowed a small tombstone from nearby and put it behind the back wheels of the truck. Unfortunately, he says, it just so happened that people came out to visit the owner of this particular tombstone that day and couldn't find the grave. "That didn't go over too well," he recalls.

MISSING VEHICLES. Many lawn care operators can sympathize with the folks in the cemetery who lost the tombstone, because they, too, have been stunned to find

something of their own missing — the spray rig!

Imagine the scene: a lawn serviceman hops into his truck after treating a customer's lawn. However, before starting the ignition he realizes he forgot to post something on the customer's door, so he leaves his vehicle parked on the street and returns to the house. Because his back is toward the truck, he does not see the vehicle slowly inch backward down the street, gaining speed until it disappears from sight. The technician puts a notice on the homeowner's door handle, turns away from the house, and heads for his truck, but it's gone!

Sound like a scene from a television sitcom? Jim Morgan, Branch Manager for Green Care Lawn Service in Birmingham, Alabama, wishes his own technician's similar experience were only that!

"The fellow went to put the invoice on the customer's door, turned around, and his truck was gone. It wound up pegged against a tree," Morgan says, "with an original damage estimate of \$7,000." Ap-

parently, the neighborhood was very hilly and the truck popped out of gear.

To make matters worse, on that same day, a customer called Morgan asking him to pick up the lawn care technician who had passed out on her lawn. "It was a real hot day," Morgan explains. "The technician had high blood pressure, it went up, and he became lightheaded."

While neither circumstances were particularly humorous at the time, Morgan now laughs at the irony of how two of their technicians had mishaps on opposite sides of town the same day.

Irony tends to play a key role in many lawn care operators' tales of the trade. Rick White, previous owner of Village Green Ltd., West Chicago, Illinois, and current Vice President of the Lawn Care Division of ServiceMaster, the company which recently purchased his lawn care operation, recalls such an episode.

"We were working a construction area," he remembers. "New homes were going in and 6 to 8-foot pine trees had been planted all along the main road. We were contracted to feed all the trees along this roadway, which was about a mile long."

White's technician was ready to get started on the job, but was waiting for his employer's instructions. "I was busy at the time, so I just told him to go to such and such intersection and start feeding all the trees north. I knew that I'd be to the site within 30 minutes to show him where to stop," White explains.

As soon as White wrapped up his business, he jumped into his vehicle to join the technician. "As I'm driving down there, along the roadway with the new houses, I look up ahead and see a truck standing straight up in the air." He laughs as he recreates the vision.

"As I got a little closer I could see the truck had a tank on it," he says. "I thought, 'Boy, some poor company has backed their truck right into a hole and it's standing straight up.'"

But the joke was on White. As he approached the scene, he says, "It became evident that the truck was mine."

The driver, who eventually climbed out of the truck, had managed to back into a soft spot, where the ground then gave way to the vehicle's rear wheels.

Fortunately, a power company truck came by, says White. "He stopped and laughed about it. I didn't know what to do. At some point, the truck was going to have to come down."

The power company truck driver had a two strap and suggested that he could pull it down, without taking the responsibility for any damage, White says. "I was afraid that the truck would crash down and the axles would break, but it came down relatively slowly."

After examining the vehicle, the only

real damage appeared to be a bent step on one side of the truck. So White and his technician started up the engine and finished the job.

I'VE GOTTA GO! How many times have you drank too much morning coffee only to later feel the consequences while out on the job? If you're male, it's not a problem, according to John Kenney of New England Green. "You'll come upon a home with a nice wooded yard, where no one's around, and you'll find a weed that needs watering." However, it can become a problem, he says, when a homeowner unsuspectingly shouts out, "What are you doing over there?"

You may be able to finagle your way out of the situation. But imagine if you're



female and you got caught. To the dread of New England Green's first female technician, that's exactly what happened a few years ago when she could not control her urge.

DOGGONE IT! Where would the lawn care industry be without its collection of dog stories? Next to mailmen, lawn care operators probably have the greatest number of beastly encounters with man's best friend.

The funny thing about dogs," says Tim Dopple, owner of Atwood Lawnspray, Sterling Heights, Michigan, "is that many times it's the little dogs — the ankle biters — that drive you nuts. You can make friends with the Great Danes, Dobermans, and Shepherds...But it's the little ankle biters that never let you go."

And Dopple knows firsthand. In this industry, he says, lawn servicemen develop a sixth sense as to which yards have dogs. He recalls approaching one particular home that had a 6-foot fence around it. "Something told me, 'This is a dog yard.'"

So Dopple rattled the gate and waited for a dog to come charging to the fence. But nothing happened. He took a deep breath and opened the gate, which was

spring-loaded. It then automatically locked behind him.

"Of course, as soon as the gate latched, the dog peered his head around the corner of the house," recalls Dopple. The technician tried to decide whether he should befriend the animal or quickly leave the yard.

"I said, 'How you doing little guy?' and that's when he bared his teeth at me." So much for the friendly approach.

When the dog lunged, all Dopple could do was pull himself up over the 6-foot fence. "I didn't even go for the gate," he says. "I just grabbed a hold of the fence with my arms, jumped right over it, and came down flat on my back on the other side."

As illustrated, run-ins with dogs can prove painful. Jim Morgan, Branch Manager of Green Care Lawn Service, remembers an occasion on which he got a tetanus shot because of a dog bite. He also clearly remembers the circumstances surrounding the incident — he had gotten caught ogling a girl in a bikini.

"The dog was on a chain and as I was spraying the lawn, I was more interested in what was lying on the chaise lounge than about how much chain the dog had," he reminisces. "And he had just enough leeway to get to me."

When P.J. Lenihan of Lawn Doctor of the Triad was attacked by a customer's dog, he had no alternative but to resort to brute force. "The dog was hanging on the back of my thigh pretty good, trying to chaw me down," he explains. "He didn't want me going into his backyard."

The dog had been sleeping under a tree and apparently snuck up behind Lenihan. "This dog didn't bark first, which usually sets you running. He just clamped on my leg and I had to punch him out," he explains. "I turned around and punched him right between the eyes and knocked him out."

Lenihan suffered a few stitches, but was more shaken by the homeowner's response than the bruise. "The lady got mad at me for hurting her dog, even though blood was running down my leg." In the end, the dog was put to sleep because it was getting senile and continued to act crazy, adds Lenihan.

In another instance, Lenihan recalls a particular German Shepherd that belonged to one of his customers, a single, elderly woman who owned the dog for protection. If a technician didn't call this dog by name before going into the yard, he attacked. And even if the technician did call the dog by name, Lenihan says, he better not have a hat on because the dog attacked people wearing hats, too. Quite a well-trained animal, Lenihan admits.

Perhaps the most humorous story is that of Ron Zwiebel's, President of Green Care Lawn Service. He was working for

ChemLawn in Atlanta at the time, he says. "The applicator that was with me was out front and I was spraying the backyard."

After hearing some commotion on the side of the house, Zwiebel turned the corner only to see his partner calmly spraying the lawn with a dog ripping at his heel. His partner wasn't worried, though, Zwiebel says, because the dog didn't have any teeth. "Here's this dog just tearing up at his feet without one tooth in his mouth." Eventually, the bold, but harmless pet was retrieved by its owner.

"OOPS! UH-OH! OH NO!" These are the kinds of stories that raise the hair on your arms and make you flinch. You know, the sort of incident where a technician sprays Round-Up® for weed control and winds up annihilating a customer's lawn in the process. Or the situation when you get a call from a homeowner who says, "You did a great job with the tree removal, but you took the wrong one." How do you replace a 100-year-old Oak? How about the case of Mrs. Jones at 16 Baker Street complaining that no one has been out to treat her lawn all season. Your technician insists that he's been there — until he discovers that there's a second Baker Street. These are the kinds of stories that

happen to everyone in the business at one time or another.

Sometimes the "Oops" is on the customer. For instance, one of Rich Blakley's customers was *certain* that one of his technicians had burned a spot in her lawn. The technician couldn't figure it out, so he called his boss in.

Blakley surveyed the situation and ask-

You know, the sort of incident where a technician sprays Round-Up® for weed control and winds up annihilating a customer's lawn in the process.

ed the homeowner if she had a screwdriver. She nodded questioningly and returned with the tool in hand. "What do you want this for?" she asked.

Blakley pointed to the spot and told her that there was a piece of wood underneath the grass, which had caused the turf to die.

"She laughed at me until I dug the piece

of wood up," Blakley says, explaining that a round hole of wood had been cut out for the top of the chimney when builders built the house. It fell to the ground and apparently was sodded over with two inches of soil by landscapers.

While the homeowner initially thought a joke was being played on her, it was not anything like the trick Atwood Lawnspray technicians played on one of their fellow workers. According to Tim Dopple, "We convinced one of our employees a few years ago that all the lawn sprayers here in the Detroit area get together every year at the Pontiac Silver Dome for a hose pull-off."

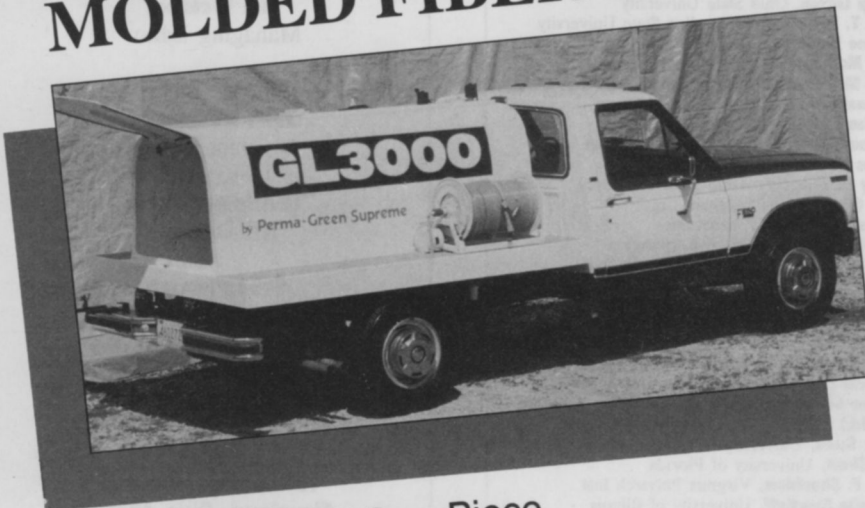
The Atwood jokesters elaborated on the prizes, that were awarded to the lawn care applicator who could pull hose off the truck the farthest and spray the most accurately, with such enthusiasm that their colleague feel for the entire story hook, line, and sinker.

"We had this guy going so much that one day while we were sitting and talking in the back room, he just disappeared. All of a sudden we could hear the hose being pulled off one of the trucks in the backyard," Dopple laughs. "Here's this kid taking off 200 feet out into the field next to our shop." When asked what he

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The hole at the end of the replaceable tip permits quick penetration of the turf for tree root injection. A permanent splash plate protects the operator. The unit may be operated with either the left or right foot for efficient application and comfort.

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an extra heavy-duty brass valve and a conveniently located valve release lever.
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Kato Equipment Company introduces its line of Pro-Master power reel mowers and Vac-Master power vacuum sweepers. The Pro-Master "R" series features a steel unitized and welded frame with close trim design for longer life and trimming within 1/2-inch of obstacles. The clutch features a heavy-duty pressure plate and 3/4-inch diameter drive shaft. It is all chain-drive with no belts and sealed bearings.

Five or seven blade reels are available for a manicured cut. The reels are steel alloy and heat-treated throughout for maximum life. Heavy-duty cast reel spiders absorb vibrations. The reel is mounted in permanently lubricated, double-sealed, and shielded precision ball bearings.

The Vac-Master saves maintenance time, labor, and expense in cleaning lawns, commercial grounds, and recreation grounds.

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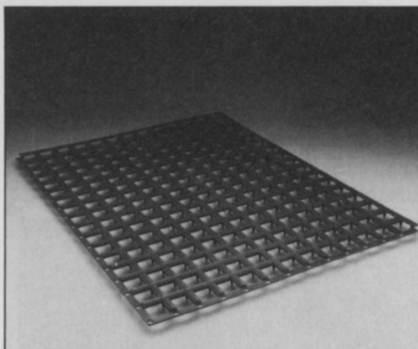
Tuflex Manufacturing Company of Pompano Beach, Florida has a couple new fiberglass spray rig tanks on the market. One of which is the Model 0150PC. This unit is a 140-gallon tank that is 54 inches long by 20 inches wide by 34 inches high. This tank is designed for installation forward of wheelwells in the beds of mini- or mid-size pickups.

Standard equipment includes, two 12-inch fillwells with ball check vented covers, calibrated sight tube gallonage indicator, and 3/4-inch outlet fitting. This unit is also available as a bulkhead tank creating two separate 70-gallon compartments.

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Chempath, Inc. has introduced "The Grid System," a new concept in turf protection. The Grid can be installed in any turf wear area. Installation is simple and fast. Over new sod, seed, or existing turf, the 2- by 2-1/2-foot panels interlock, and are either rolled or tamped into the soil. The Grid acts as a protective surface, yet allows natural growth of rhizomes, stolons, shoots, and crowns.

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paths, this product would be a less expensive alternative. The areas will remain green year after year and people can walk where they wish.

Circle 126 on reader card

The new 1987 catalog has just been published by **Tuflex Manufacturing Company**. The catalog features Tuflex products listed under three separate headings: "Fiberglass Tanks and Accessories," "Pressure Spray Units and Accessories," and "General Information." In the section on "Fiberglass Tanks and Accessories," potential buyers will find everything from access plates and agitation parts to bulkhead fittings and storage chests. Listed under "Pressure

Spray Units and Accessories," is a selection of such items as ball valves, flow meters, hose reels, hose clamps, line strainers, and spray units.

The catalog can be obtained by contacting Tuflex Manufacturing Company.

Circle 135 on reader card

Fantome, the legendary tall ship formerly owned by Aristotle Onassis, will begin offering six-day **Windjammer Barefoot Cruises** through the West Indies, December 22. The palatial yacht, which once played host to royalty and millionaires, will now be available year-round for Caribbean cruises costing as little as \$100 per day and visiting some of the most beautiful islands in the world. The flagship of the Windjammer fleet, Fantome will offer two itineraries on its weekly cruises through the tranquil Caribbean. Both schedules will depart from the jet set island of Antigua, a former British colony which boasts of its 365 beaches.

Other ships in the world's largest tall ship fleet include Flying Cloud, which sails weekly from Roadtown, Tortola, through the British Virgin Islands, a paradise of hidden coves and small bays set against a backdrop of high mountain peaks and lush foliage; Polynesia, a

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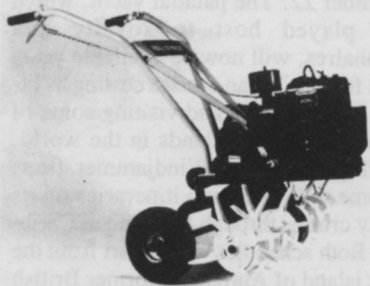
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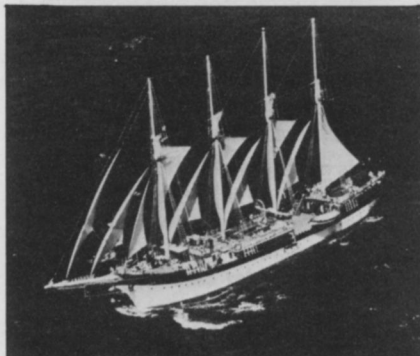
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Circle 48 on reader service card

schooner offering weekly six-day cruises from half-French, half-Dutch St. Martin through the West Indies Windward and Leeward Islands, an area known as "the South Seas of the New World;" Mandalay, carrying passengers on two-week cruises through familiar and unspoiled



parts of the Windward and Leeward Islands; and Yankee Trader, which will begin six-day cruises through the quaint Bahamas on November 8.

Circle 133 on reader card

Both of Gandy Company's lawn spreaders have stainless steel snap-off bottoms for corrosion resistance and easy maintenance. The model 42 spreader is 42 inches wide with approximately 225-pound fertilizer capacity and is available with tractor hitch or push handle. Model 24 is 24 inches wide with approximately 80-pound fertilizer capacity and is available with push handle only.

Either model may be used to spread fertilizer, seed, dry lime, granular herbicides, and insecticides, or even sand and salt for winter use. Each is accompanied with factory-calibrated rate charts for a wide variety of materials.

For easy cleaning, the Gandy spreaders disassemble without tools, and all parts

are replaceable. Special fixed-rate bottoms are options for the model 42 to do overseeding or to apply top dressing. Both models have optional jiggers to aid in spreading materials which tend to bridge, such as dry lime.

Circle 129 on reader card

Huntsville Kentucky bluegrass from Jacklin Seed Company is an excellent grass for southern transition zone seed mixtures. It has a dark green color and blends beautifully with Arid and the newer turf-type tall fescues because of similar color and leaf texture. Huntsville has done well in high humidity and heat tests and has shown resistance to stem rust.

Four Star Sod Blend from Jacklin Seed combines Nassau, Glade, Ram I, and Baron into a unique, complementary blend for excellent quality sod. Ram I, Nassau, and Glade all display a desired dark green color and maintain that color late into fall with early spring green-up. All four varieties have shown good resistance to leaf spot, stripe smut, and Fusarium blight syndrome. Performance in shady conditions is clearly noted by Glade and Ram I with excellent resistance to leaf spot and powdery mildew.

Circle 127 on reader card

The Romanazzi dumpster from Supreme Corporation is a unique three-way dump body. Designed and produced in Europe, it is capable of dumping to the rear or to either side. Equipped with a hydraulic electric 12-ton hoist, the Romanazzi dumpster also features fold-down sides and four-way tailgate as well as a side-locking system. This versatile truck body is available in 8- to 11-foot lengths and 81-1/2- to 79-inch widths.





The Romanazzi platform body is built with a stainless steel underframe and anodized extruded aluminum sides. Add to this a multi-strata flooring system constructed of laminated plywood and finished with a resin coating, and the result is tough, durable platform body. It is available in 7- to 20-foot lengths and 84- to 90-inch widths.

Circle 130 on reader card

Direct dual hydrostatic drive, water-cooled diesel and gas engines, and industrial grade construction are three of the



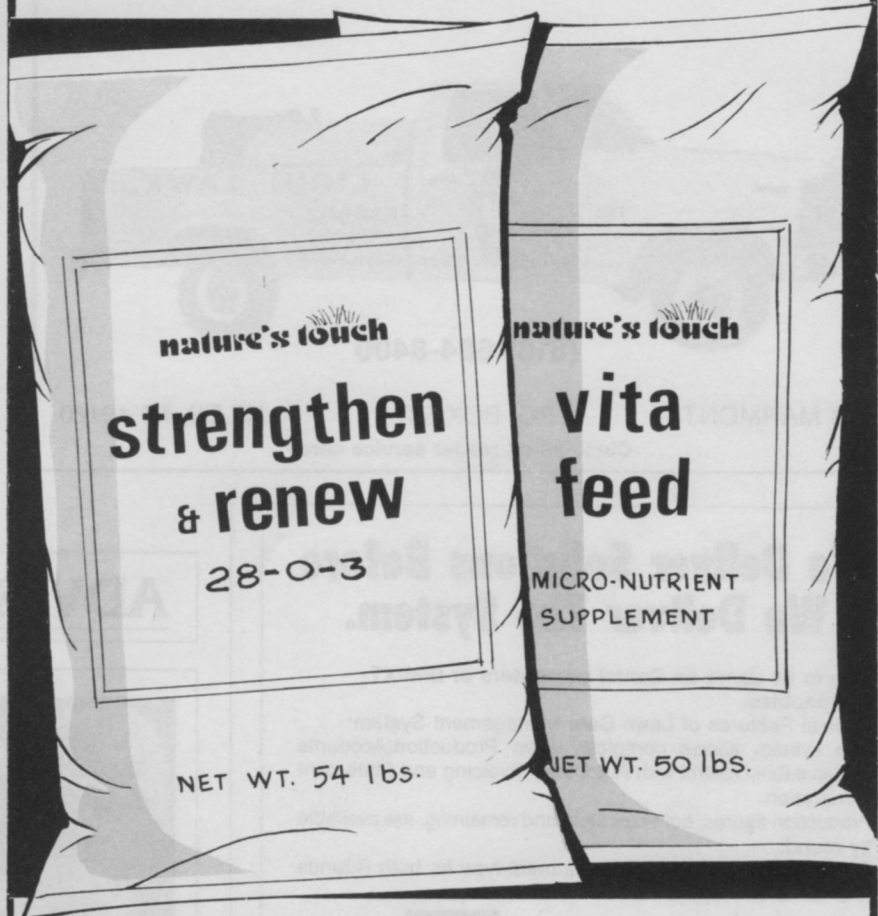
best sales features of the new "TurfRunner" line of commercial turf and grounds equipment from CTL Corporation. These units feature true "zero turning radius," heavy-duty front-mounted rotary mower decks in four sizes, and safety shutdown gauges on all water-cooled engines. A full range of attachments for all-season use are available: ROPS/CAB, two-stage snowblower, rotary broom, power thatcher, 16-cubic-foot grasscatcher, and front-mounted aerator.

Circle 131 on reader card

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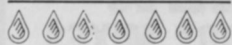
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Circle 89 on reader service card

Vrisimo Manufacturing, Inc. announced the availability of their newly designed JD-FMS 160 Mighty Max front-mount flail mower. The new unit is designed specifically for the John Deere F910, F930, and F935 front mowers and is available through John Deere dealerships.

The new flail mower adds a new dimension to the versatile John Deere 900 series by providing additional capabilities to mow in high, rough weeds as well as mulching grass and leaves. Safe operation is assured in the roughest undeveloped areas with its shielded discharge design. Optional dethatching blades are available to renovate lawns and verticut bermudagrass and running stem grasses. Designed to cut with a vertical action, the dethatching blades follow undulating ground contours with minimal missing or gouging. In many instances, they do a better job than a single-purpose dethatching machine.

Circle 132 on reader card

Macroscope 18-36 Zoom is a new wide-field zoom macroscope from **RF Inter-Science Company** which provides variable magnification of 18X to 36X in a field-ready unit.

Circle 161 on reader card

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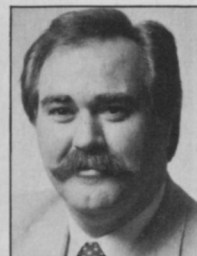
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TALES OF THE TRADE

(continued from page 39)

was doing, he replied, "I'm practicing for the hose pull-off."

CONCLUSION. By now, it's clear that lawn care operators must have a good sense of humor to survive in this business. The unexpected is what you learn to expect. Customers are not always tuned into the

nature of lawn care and their very requests are often humorous, says Rick White, who recalls a Village Green customer's inquiry on lawn renovations. "A lady called up and said, 'I've heard about this slit seeding. I have small children, how deep are these slits?'"

On other occasions, you may think a customer's request is a joke. Would you believe it if you got a call to service a planter of grass that was on the 17th floor terrace of an apartment building? One Washington, D.C. lawn care operator will tell you to think twice before hanging up the phone, because his company serviced just such an account. His technician would take his spreader right into the building's elevator, through the tenant's apartment, and out onto the balcony to treat the turf. Now that's incredible! — Vivian F. Rose. ■

The author is Assistant Editor of ALA magazine.

Maybe you'd like to spin a yarn or two on your favorite tales of the trade. We'd love to hear about them, and maybe even share them with our readers. Send your humorous or harrowing on-the-job experience to: American Lawn Applicator, Tales of the Trade, 4012 Bridge Avenue, Cleveland, Ohio 44113.

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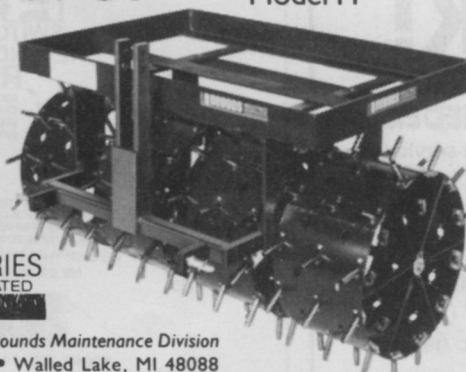
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SPREADER

(continued from page 34)

nificantly different from the observed quality at all points in the pattern. The turf quality from method 2A is significantly different from the observed turf quality at four of the six positions in the pattern,

This test thus confirms the ASAE standard on spreader pattern testing which calls for the use of this type of catch pan. This test and the previous extensive test by the author confirmed that the other collection methods tested are inaccurate.

but is considerably closer to the observed quality than the other two methods.

CONCLUSIONS. Using standard rectangular catch pans with internal dividers to prevent bouncing, results in the best

prediction of rotary spreader rate and pattern quality as measured by actual turf response. The pattern prediction by this method is not perfect, as is obvious in Figure 3. There is still a substantial amount of variability in the pattern prediction, and there is also some variability in the turf quality readings that reduces the correlation. Nevertheless, it is obvious from the data that this method of pattern collection provides the most reliable pattern prediction of the methods evaluated.

This test thus confirms the ASAE standard on spreader pattern testing which calls for the use of this type of catch pan. This test and the previous extensive test by the author have confirmed that the other collection methods evaluated are inaccurate at predicting rate and unreliable at predicting pattern quality. — *Richard L. Parish*

The author is a member of the Agricultural Engineering Department at the Louisiana Agricultural Experiment Station, Louisiana State University, Baton Rouge, Louisiana. Reference to a proprietary product or company is for specific information only and does not imply approval or recommendation of the product by Louisiana State University to the exclusion of others.

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COMING NEXT MONTH

In January, we will feature an article on interior landscape installation and maintenance. This is said to be the fastest growing segment of the green industry and some landscape maintenance contractors are beginning to take a look at this service. We will also report on the 1986 Professional Lawn Care Association of America Conference and Trade Show. Finally, we will investigate the relationship between lawn care supply distributors and end users and see how the industry can make amends.

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