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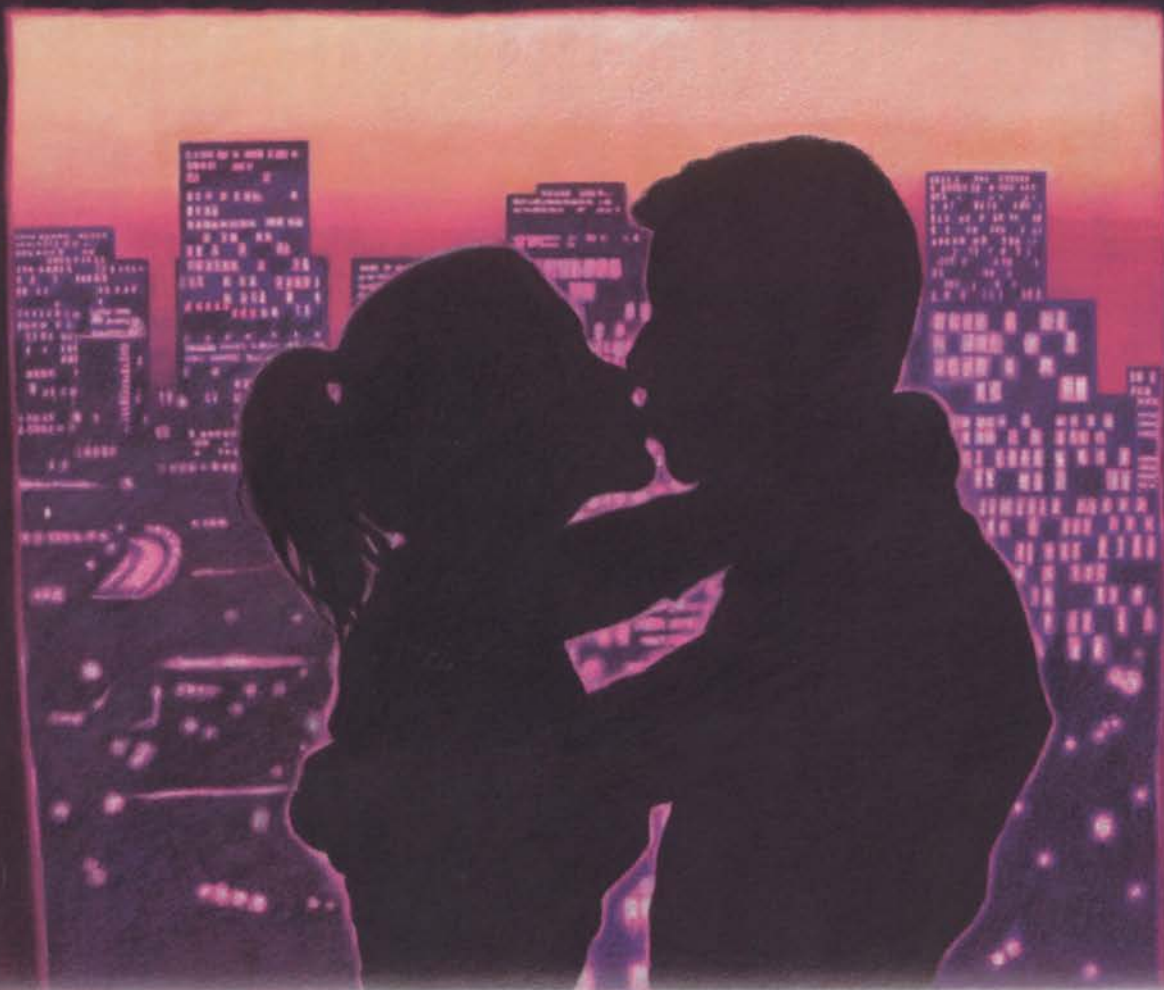
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**Mowing
Prognostications**

**Servicing Dealer
Debate**

**Market
Trends**

**Sprinkler Head
Placement**



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Lawn & Landscape MAINTENANCE

VOLUME 14, NUMBER 1

JANUARY 1993

Cover Photo:
Dennis Sutton, Staunton, Va.

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45 Record Crowd Attends 3rd Annual Green Industry Expo

Returning to the heart of the lawn and landscape industry, attendees turned out in record numbers for both educational conferences and trade show.

52 Contractors Optimistic About Business Future

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Editor's Focus

FILLED WITH WARM wishes from the fun-filled holiday season, I look toward the new year with enthusiasm. My newly found optimism stems not only from the new political regime in Washington D.C., and its "plans" of change for the future, but my hope that the green industry will soon receive its just desserts.

Only time will tell what environmental undertakings Vice President Al Gore has in mind, but I figure it's about time the lawn and landscape industry received a mountain of pleasant tidings for the new year rather than doom and gloom.

If I had it within my power to make dreams come true, I would opt for the following:

I would give lawn care operators the courage to vocalize the passion they have for their field of occupation. Too often, lawn care operators take a bad rap for their profession and the products they use, succumbing to uninformed attacks from local, state and federal governments, local newspapers and an assortment of people who spread tales of woe from alleged pesticide run-ins.

With emotions in check and an armful of carefully thought out ideas, lawn care operators should be able to convey to their customers, the media, legislators and others the importance of specialty pesticides. The Professional Lawn Care Association of America, the Responsible Industry for a Sound Environment and others have made it possible to intelligently convey the appropriate answer, and possibly curtail unnecessary pesticide regulation.

We've seen unreasonable posting requests stopped in their tracks, and we've seen state law take precedence over municipalities valiantly trying to usurp established notification laws in favor of their own tedious pesticide mandates.

And just recently, the hot issue of multiple chemical sensitivity registries were dealt a small, but significant setback when politicians in Virginia tabled legislation for a state sensitivity registry (see page 20).

It all boils down to preparation. What happened in PLCAA's mock city council hearing (see page 48), should be a rarity rather than commonplace in cities across the United States.

To continue, I would like to blow up those city councils who find it their civic duty to ban power blowers.

With all the problems this country has to deal with -- homelessness, unemployment, political corruption, unbalanced budgets, the list goes on -- the elimination of a vital industry tool such as a blower should not be high on someone's priority list.

But in all fairness, lawn and landscape pro-



professionals should take care to operate these time-saving, efficient tools in an intelligent manner. Don't make them a nuisance for your customers.

To those mowing professionals, I wish for you a season free from landfill woes, drought and idled equipment. Additionally, as the professional mowing industry gains recognition with suppliers of commercial mowing equipment, it's my wish that the link between the warehouse and field — the dealer network — be solidified (see page 36).

With all of the rain and snow much of the United States is receiving this winter, we can only hope that drought won't be a major issue in 1993. Along those lines, it's hoped that the industry won't take the expected snow pack in Northern California for granted, and that water management and quality water use will become more prevalent — even in areas traditionally not lacking water supplies.

And finally, to all of you struggling to understand appropriate ways to recycle yard waste and proper ways to apply finished compost back into the environment, more simply written regulations from state governments.

Realistically, (don't you hate that word?), all of these scenarios won't come true in 1993. However, *Lawn & Landscape Maintenance* magazine will continue to bring you insights into these and other issues throughout the year. We'll identify pertinent legislation, methods to grow your business, technical developments and product innovations.

We wish you a prosperous new year and look forward to hearing from you. —

Cindy Code

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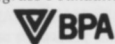
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Business Watch

CONSUMERS ARE LOOSENING their purse strings as the economy continues to improve.

The Consumer Confidence Index soared more than 10 points in November, indicating renewed confidence in an economy that has limped along for much of the past two years (see chart).

Analysts attribute the increase to two factors: a series of better-than-expected economic reports and the election of Bill Clinton, former Arkansas governor.

As the economy continues to recover, President Clinton is reportedly reappraising the need for a short-term economic stimulus package. Corporate profits are up, the unemployment rate is down and the gross domestic product grew at a \$4.94 trillion annual rate in the third quarter, lending support to the growing belief that a stimulus package, once the focus of an election battle, may not be necessary.

"We have some distance to go before we restore the sense of prosperity we had, but we're back on track," economist Erich Heinemann recently told *USA Today*.

MORTGAGE RATES

SEPT.	OCT.	NOV.	DEC.
7.60	7.91	8.05	8.02

*Posted yields on 30-year mortgage commitments for delivery within 30 days. (Source: Federal Home Loan Mortgage Association)

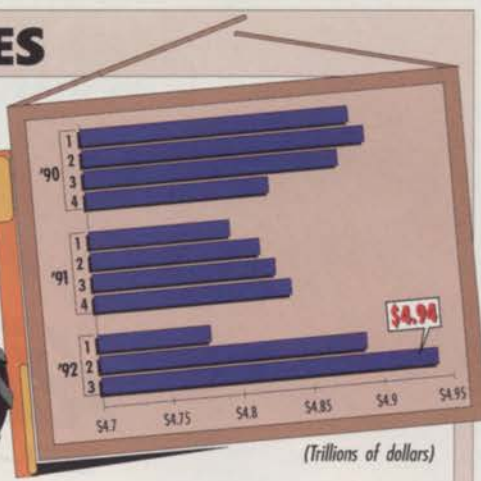
RETAIL SALES*

AUG.	SEPT.	OCT.	NOV.
+0.1	+0.7	+1.9	+0.4

*Percent change from preceding month. (Millions of dollars, seasonally adjusted)

GDP IMPROVES

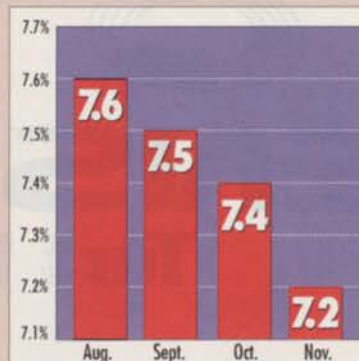
The gross domestic product passed pre-recession levels in the third quarter of 1992, indicating that the economy is expanding.



Source: The Commerce Department

UNEMPLOYMENT DECLINES

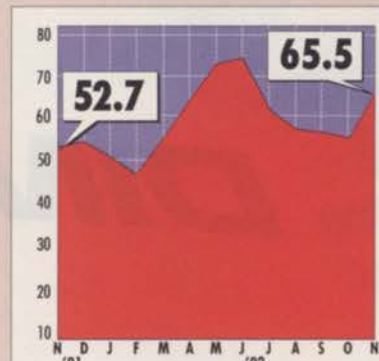
The employment rate has dropped 0.6% since June.



Source: Bureau of Labor Statistics

CONSUMER CONFIDENCE

From a monthly survey of 5,000 U.S. households.



Source: The Conference Board

ECONOMIC REPORT: MOWING IN 1993

MOWING CONTRACTORS nationwide forecast a 5 percent to 20 percent growth in landscape maintenance divisions for 1993. Companies predicting increases on the low end are based mostly on the West Coast, where the recession lags.

Cagwin & Dorward, Novato, Calif., experienced a loss in the first half of 1992 due to clients facing budget cuts, but had a slow upswing in the last half.

"In maintenance, we're doing better than 12 months ago. We'll see some new growth in 1993, but not as much as we've experienced in the past," said C&D's Wayne Richards.

Rich Akerman of Northwest Landscape in Tigard, Ore., whose company targets mainly high-end commercial office facilities, larger office parks and upscale multifamily housing, believes the economy fared better in the Northwest than other regions, but that his clients remain cautious.

"They're watching their costs very tightly," he said. "They're waiting to see what the new administration will do. They'll watch their leaders for policy." One hopeful sign is that banking is "loosening up," he added.

While his company sustained about an 18 percent growth in 1992, Akerman predicted a slight upturn for 1993. "I would guess a minimal to mild growth," he said.

ISS Landscape Management Services in Tampa, Fla., and Ground Control Landscaping in Orlando, claimed substantial growth in maintenance for 1992 and each expect 15 percent to 20 percent increased business in 1993.

ISS' landscape maintenance picked up in 1992 despite a drop in construction sales. Several clients began upgrading their facilities, "which we were able to give what we call actual work items — above and beyond contract. Those jobs produce very high profit dollars," said ISS' Dale Elkins, whose company does about 70 percent large-scale commercial maintenance work.

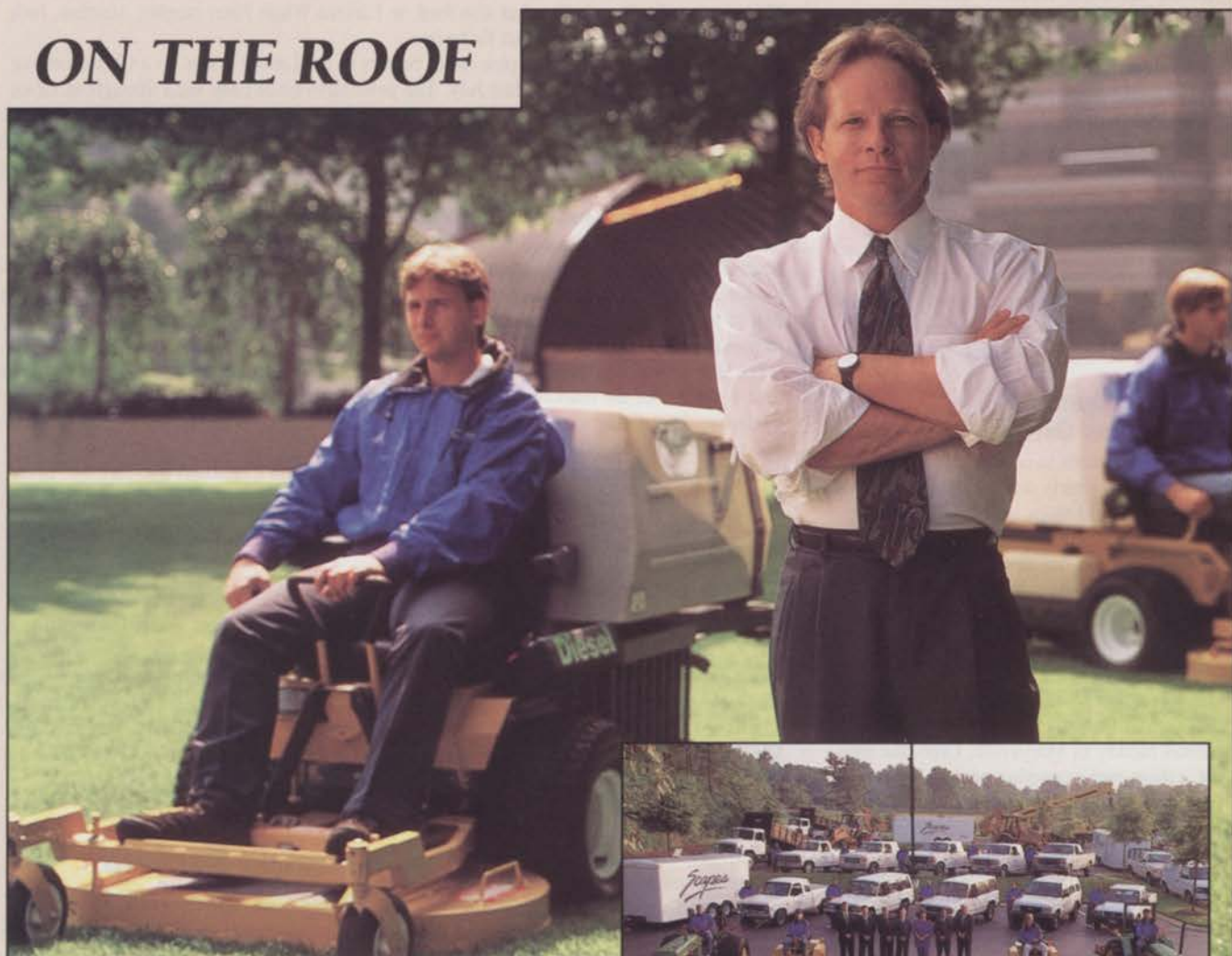
Maintain Inc. in Dallas, Texas, grossed about \$3.8 million in 1992 and expects to gross \$4.5 million this year, according to James Rhodes, general manager.

David Frank of David Frank Landscape Contracting in Germantown, Wis., estimated a 20 percent growth in maintenance next year, the same division which experienced 24 percent growth in 1992.

"We're actively promoting our services," he said. "We're hitting right on our profit objectives. We're real happy."

Michael Byrne of Byrne Brothers in Essex, Mass., said maintenance, which makes up about 65 percent of the business, has developed 25 percent the last two years, and he anticipated the same for 1993.

WALKER DOES TOP LEVEL WORK ON THE ROOF



When Atlanta based landscape contractor, **Scapes Landscape Management**, wanted to improve efficiency in mowing the award winning Northpark Town Center Rooftop Park, they found Walker fit the job.



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NEWS DIGEST

Barefoot Grass Buys Ever-Green Lawn Care

Barefoot Grass Lawn Service Inc., a subsidiary of Barefoot Inc., acquired ADT Limited's Ever-Green lawn care business. Barefoot declined disclosing terms and conditions of the sale.

Barefoot services 315,000 customers systemwide in 68 markets including franchises. Ever-Green maintains about 100,000 customers in nine cities.

"All of Ever-Green's markets are also serviced by Barefoot. Therefore we believe the acquisition will be synergistic and will have a positive impact on next year's earnings," said Patrick Norton, president of Barefoot.

Ecogen Opens U.S. Sales Office

Ecogen Inc. plans to open a sales office in Fresno, Calif., early this year. John Cooper, director of field sales, will head the office.

Ecogen, an agricultural biotechnology company which has developed a number of proprietary biopesticides, is in the process of developing products for ornamental use.

O.M. Scott Completes 1 of 3 Expansion Projects

O.M. Scott & Sons Co. opened its Bulk Blend facility in Marysville, Ohio, the first of a three-part expansion project. The company also plans to add a polymer encapsulation plant and a methylene urea granulation technology division in fall.

All of the new facilities will have state of the art engineering controls that will reduce emissions to the lowest levels ever, said Dr. Mike Kelty, vice president, research and development. "The switch to the new, methylene urea process alone will reduce already low emissions by 35 percent."

Combined expansion costs total \$14.7 million in capital investment, the largest in company history

Associations Merge For New England Show

The New England Grow trade show is slotted for Feb. 3-4 at the Hynes Convention Center in Boston.

Several associations, including the New England Nurserymen's Association, the Massachusetts Arborists Association, the Associated Landscape Contractors of Massachusetts and the Massachusetts Nurserymen's Association, merged their winter trade shows. At least 15 other regional green industry organizations also plan to co-sponsor the event.

'Twas the Season to Quarantine Trees

THE U.S. DEPARTMENT of Agriculture quarantined pine tree nurseries in 43 counties in six Midwest states to prevent the spread of the pine shoot beetle, an exotic pest of pine trees.

The beetles, native to Europe and Asia, attack new shoots of trees, stunting their growth. The pests prefer Scotch Pine but also feed on Eastern White Pine, mugho, Austrian, Jack and Red pines, spruce, larch and fir trees.

Growers first discovered the pine shoot beetles in the United States on a Christmas tree farm in Lorain County, Ohio, last July. The pests have since been sited throughout Ohio, Michigan, Illinois, Pennsylvania, New York and Indiana.

The pests are thought to have arrived in the United States on shipments illegally unloaded on the Great Lakes, said Craig Regelbrugge, director of regulatory affairs for the American Association of Nurserymen.

The USDA Animal and Plant Health Inspection Service's quarantine "requires a certificate or limited permit for the movement of pine Christmas trees, nursery stock and bark-covered pine, spruce, larch and fir logs and lumber," said B. Glen Lee, deputy administrator for APHIS' Plant Protection and Quarantine. "This action will significantly reduce the risk of the beetle spreading to other regions of the country while allowing most producers to move their product."

The quarantine did not affect Christmas tree sales, but the quarantined area represents less than 5 percent of the market, according to Joan Geiger, a representative for the National Christmas Tree Growers Association. "There is potential for financial damage to growers and suppliers in the industry by next year," she said.

APHIS and state officials continue to conduct surveys on Christmas tree farms to determine the extent of infestation. They plan to extend the surveys to all pined areas later this year, said Lee. APHIS scientists agree the pest could cause serious damage if it invades commercial pine forests.

Study: Final Compost Contains No Pesticides

One-year results from a yard compost study conducted by O.M. Scott & Sons, Marysville, Ohio, finds no detectable levels of pesticides, herbicides, PCBs or dioxins in the final compost, said a company representative.

O.M. Scott is testing yard compost from several counties in central Ohio. The company also plans to run additional field tests to determine the effectiveness of compost in various soil mixes to grow annuals.



In other regions, the University of Illinois continues to study the movement and leaching of pesticides and heavy metals in yard waste compost. The study focuses on metals such as lead, cadmium nickel and zinc, and will determine whether they are in a form that can actually move out of the compost, said Dr. Michael Cole, head of the investigation.

The university's Center for Solid Waste Management and Research completed a similar report on pesticides. Titled "An

Evaluation of Yard Waste Composting with Regard to Pesticides and Other Toxic Residues," the report is available from the University of Illinois' Institute of Environmental Research, 1101 W. Peabody St., Urbana, IL 61801; 217/333-4178. Cost for the 360-page report is \$20.

Florida Benlate Battle Continues

The Florida Department of Agriculture is suing Du Pont Corp. to obtain more information about whether the company's Benlate DF fungicide caused millions of dollars in plant damage in addition to creating health hazards.

Du Pont, which had paid \$500 million in claims nationwide, including \$395 million in Florida, announced in November that Benlate did not cause damage and ceased all outstanding claim settlements. Only about a dozen claims nationwide covered damage to turf and ornamentals, mainly bluegrass.

Du Pont officials released research showing Benlate does not damage plants. Florida state officials called for more evidence and are conducting their own research to evaluate the product's potential plant and human health damage.

A chemical in Benlate has been detected in the urine of several people who complained of illness after exposure to it, a toxicologist

(continued on page 12)

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News in Brief

(continued from page 8)

told the Florida Pesticide Review Council. The preliminary data could link Benlate to human health problems, a possibility Du Pont denies. Since reversing its evaluation of Benlate, Du Pont has made no moves to put the product back on the market. "We have no specific plans at this point. That is a potential option down the road, said Du Pont spokeswoman Pat Getter.

Brouwer Manufacturing To Transfer to Ohio

The manufacturing operations of Brouwer Turf Equipment will move from Keswick, Ontario, Canada, to the Steiner Turf Equipment plant in Orrville, Ohio, by the middle of 1993. Brouwer and Steiner are both owned by Ransomes plc.

Brouwer has been manufacturing sod harvesting machinery in Keswick since 1972, but the sales volume of the products in relation to the large manufacturing plant could not justify the continued operation of the current facility, according to Irv Aal,

president of Ransomes America Corp.

Brouwer will continue to maintain a marketing and service office in Keswick.

Veteran Seed Man Forms Own Company

John Glattly, Minneapolis, recently formed the Twin City Seed Co., which emphasizes



Glattly

formerly served as director of NK Lawn & Garden Co.'s medalist turf division.

professional turfgrass seed sales in the Midwest. The company distributes and markets all types of seed to garden centers, lawn care companies, sod growers and other chains. Glattly

Turfgrass Division Offers Teaching Guide

A new Turfgrass Management Teaching Resource Guide provides a range of resources for turfgrass education and training programs. Offered by the

Turfgrass Science Division of the Crop Science Society of America, the guide is geared toward high school curricula, two- and four-year programs, extension programs and private industry.

Resource materials include videos, slides, computer services, periodicals and plant, insect, seed and fertilizer specimens.



Guides can be ordered from Dr. Keith Karnok, Agronomy Department, Plant Science Building, University of Georgia, Athens, GA 30602; 707/542-0931.

Ohio Revises Yard Waste Compost Rules

The Ohio Environmental Protection Agency agreed to simplify composting requirements for yard waste after several municipalities complained the cost and burden of meeting the regulations would force composting sites to shut down.

The regulations, implemented last June by the Ohio EPA, required yard-waste-only composting facilities to employ certified operators and to meet the same criteria set for other types of compost sites.

"Our intent with the rules was to provide a minimal regulatory program for yard



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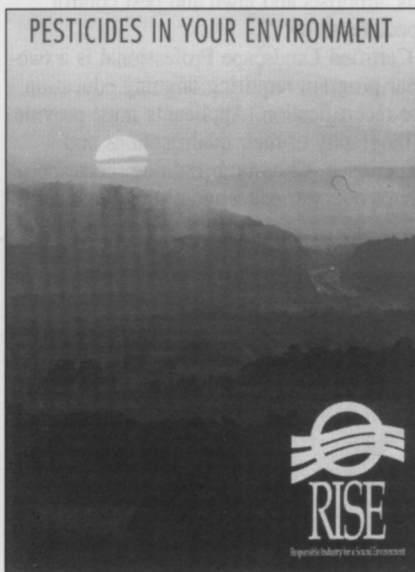
USE READER SERVICE #11

waste composting," said Ohio EPA Director Donald Schregardus. "We do not want successful composting operations to close down or face unreasonable costs. It has become clear that the existing rules do not accomplish our objective."

After listening to municipal mayors, the EPA is considering a new proposal that would require facilities that compost only yard waste to simply register with the Ohio EPA and to notify the EPA of any ownership transfer or closures.

RISE's Booklet Boasts Specialty Pesticides

The Responsible Industry for a Sound Environment is offering "Pesticides in Your Environment," a 16-page booklet explaining health, safety and environmental benefits of specialty pesticides to the average consumer.



The booklet can be obtained from RISE, 1155 15th St., N.W., Ste. 900, Washington DC 20005; 202/872-3860.

Redmax Adds New Facilities

Komatsu Zenoah Japan, the parent company of Redmax, broke ground in September at its 74-acre site in Koriyama Japan, 150 miles north of Tokyo.

The new facility, equipped with state-of-the-art robotics, will support an expanded research and development division. Company officials expect the facility to be completed in May 1994.

Discovery May Prevent Toxicity

United States scientists discovered how plants soak up excess sodium from salt in

the soil, possibly enabling them to genetically engineer plants to protect themselves from sodium, chemicals and toxics, according to *The Wall Street Journal*.

Microscopic channels on plant roots which take in calcium, potassium and other nutrients also allow unhealthy amounts of sodium into the plants, according to researchers. Scientists believe isolating the gene responsible for the channels will eventually enable them to alter the flow of sodium and other unwanted chemicals.

Lawnmark Acquired Nature's Helper

Lawnmark purchased the assets of Nature's Helper, including branches in Elmira and Binghamton, N.Y., and Burlington, Vt., and the Albany, N.Y., customer base of Orkin Lawn Service. The combined revenue totals nearly \$1.5 million and is consistent with the company's strategy of growth in New York and New England, said company president Martin Erbaugh.

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USE READER SERVICE #26

Association News


THE PROFESSIONAL Lawn Care Association of America will hold its Legislative Day on the Hill Feb. 23-24 in Washington D.C. Lawn care company owners and managers will gather in small groups with members of Congress and the Senate to discuss and promote current issues, legislation and regulations facing Congress.

"Personal contact such as this is an invaluable method of persuading legislators to understand our side of the issues," said Tom Delaney, PLCAA's director of state government affairs.

Events for PLCAA members include attending the U.S. Chamber of Commerce National Business Rally, at which President Bill Clinton is expected to make an appearance.

The **Associated Landscape Contractors of America** scheduled its Student Field Days March 26-28 at the State University of New York's College of Agricultural Technology, Cobleskill, N.Y.

Students enrolled in horticulture and landscape architecture programs from colleges and universities nationwide compete in design/build, sales, surveying, equipment operations, plant identification and irrigation

For more information... 

PLCAA 1000 Johnson Ferry Road NE Suite C-135 Marietta, GA 30068-2112	ALHA 2509 E. Thousand Oaks Blvd., Suite 109 Westlake Village, CA 91362 805/498-6916
ALCA 12200 Sunrise Valley Dr. Suite 150 Reston, VA 22091 703/620-6363	HRI/AAN 1250 I St. NW, Suite 500 Washington, DC 20005 202/789-2900
	CLCA 2021 N Street, Suite 300 Sacramento, CA 95814 916/448-CLCA

events. The program allows students to meet prospective employers in the industry.

Landscape contractors sponsoring the events include Allen Keesen Landscape, Denver.; Greenspace, Holly Springs, N.C.; Kujawa Enterprises, Cudahy, Wis.; The Brickman Group, Long Grove, Ill.; Thornton Computer Management Systems, Maineville, Ohio; Environmental Industries, Calabasas, Calif.; Chapel Valley Landscape, Woodbine, Md.; and Lied's Inc., Sussex, Wis.

The **American Landscape Horticulture Association** initiated a series of industry certification programs for supervisors, landscape contractors, nurserymen, horticulturists, arborists and lawn and pest control specialists.

Certified Landscape Professional is a two-year program requiring ongoing education for recertification. Applicants must provide a biography of their qualifications and experience. Classroom training, correspondence courses, educational programs, certi-

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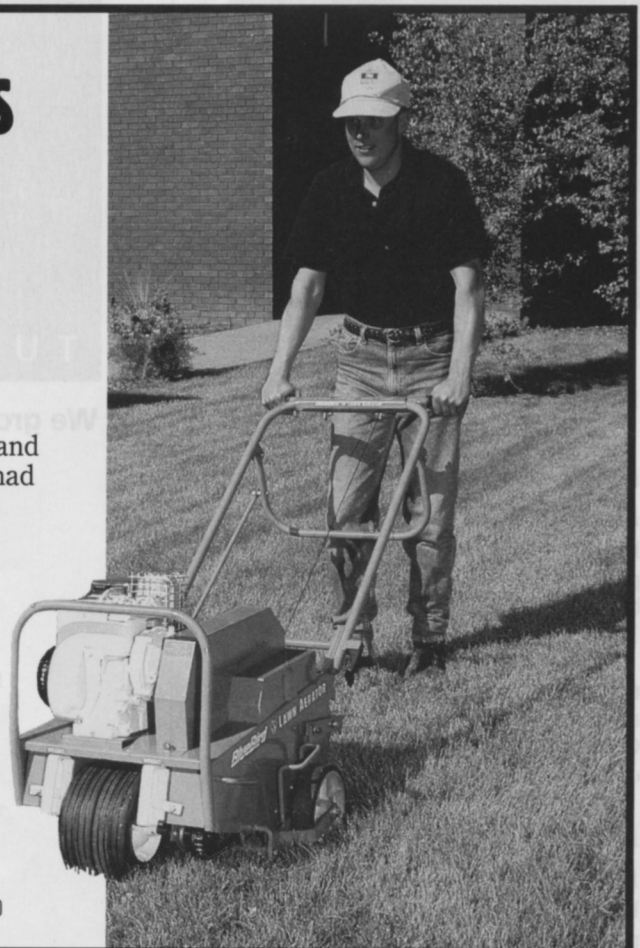
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USE READER SERVICE #27

ificate programs, specialty certification or licensing, hands-on training and job experience are accepted as qualifications.

Continuing education requirements for recertification include water management, pest control, sprinkler system design, business administration, time management and general education. The program requires completion of 80 hours every 24 months, said an ALHA representative.

The **Horticultural Research Institute** plans to conduct a uniform nationwide survey of nursery crop producers and dealers to measure crop production, inter- and intrastate sales, exports and relative market share provided by various retail channels. HRI expects to distribute the survey this month and to publish the results in June.

The study also measures sales of retail nursery garden centers, landscape and interior plantscape firms, mail order firms, multiproduct line retailers (grocery, discount outlets, hardware and department stores), and horticultural distribution firms, related supplies and hardgoods and landscape services.

The survey was prompted by a growing "lack of, and increasing need for, reliable national nursery and landscape industry

statistics," said Frank Kearney, HRI president.

The American Association of Nurserymen, the Associated Landscape Contractors of America, 49 state departments of agriculture and 16 state nursery and landscape associations plan to help coordinate the survey.

The **California Landscape Contractors Association** developed an information kit on the California Department of Water Resources' Model Water-Efficient Landscape Ordinance to help contractors prepare to meet new state regulations.

The state required municipalities to adopt some type of landscape water ordinance by Jan. 1 unless they showed evidence proving it unnecessary. Many jurisdictions planned to adopt the DWR's model ordinance.

CLCA's informational kit includes a model ordinance, a CLCA San Diego chapter paper on the ordinance, CLCA's booklet on California's water problem and tips on how to establish a local landscape water advisory board.

"This information will also give you the ammunition you need to influence local jurisdictions to adopt the Model Ordin-

ance's unique water-saving approach," said Pat Marion, CLCA Water Management Committee chairman. "What the kit doesn't do is answer all your questions about the model ordinance. In all likelihood, you will still need to take a water auditing class and attend a compliance seminar at some point. And, you'll still have to become familiar with local ordinances."

The CLCA information kit costs \$20 for members and \$30 for non-members.

IN BRIEF...The **American Association of Nurserymen** offers a compact guide to help landscape professionals determine whether workers are employees or independent contractors under an Internal Revenue Service ruling. The IRS is disputing many businesses' classifications of individuals as independent contractors...The **Michigan Nursery and Landscape Association** published its eighth annual Nursery Stock Index, listing 1,300 varieties of trees, shrubs, rhododendrons, vines, ground covers, perennials, ferns, grasses, bulbs and small fruits grown...The **Pennsylvania Nurserymen's Association** offers its 1993 Pennsylvania Guide to Nursery Stock, listing more than 500 varieties of plants from Pennsylvania growers. ■

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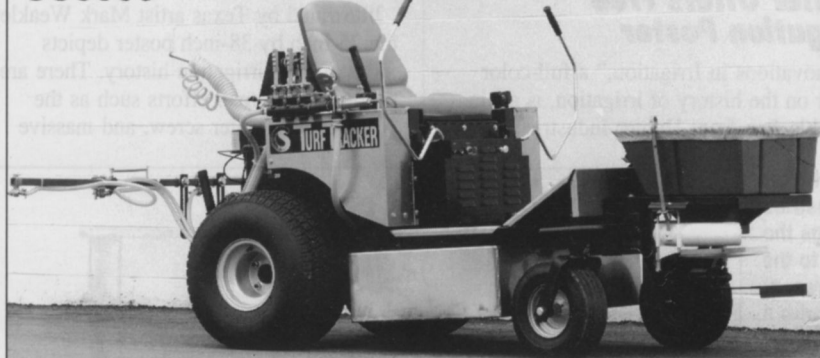


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USE READER SERVICE #29

Bob Cloud Awarded Industry Achievement

IRRIGATION PIONEER Robert Cloud was recently presented the Edwin J. Hunter industry achievement award at the annual Hunter Industries' distributor meeting.

Cloud is president of the Associated Irrigation Consultants of Los Angeles, an internationally known company that designs large-scale irrigation systems for commercial and private developments around the world.



Cloud

As he presented the award, Ed Hunter, founder of Hunter Industries, recognized Cloud for his more than 40 years of distinguished

service and exemplary leadership in the green industry.

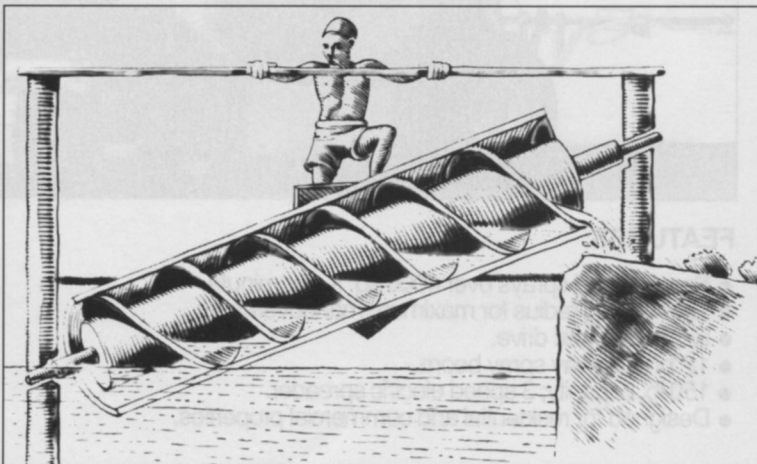
"Bob Cloud is responsible for many of the irrigation industry's high standards, methods of installation and innovative system techniques," Hunter said. "He was an early proponent of energy and water conservation through system design, and he has encouraged manufacturers to produce equipment to facilitate that goal."

AIC was one of the first firms to use multiple-schedule clocks, and advocated repeat cycles to complement soil infiltration rates. As early as 1962, AIC supported the use of reclaimed water for landscaping and the importance of irrigation master plans on large projects. Cloud started in the irrigation business in 1947 as a contractor. In 1957 he launched AIC, recognizing the need for site planning and independent, unbiased irrigation consulting.

Hunter Offers Free Irrigation Poster

"Innovations in Irrigation," a full-color poster on the history of irrigation, is again available free from Hunter Industries.

Hunter Industries brings the past to the present with a rendition of milestones in the irrigation industry.



IA Attendees Take Advantage Of Educational Opportunities

Jack Anderson, nationally syndicated columnist as well as the keynote speaker for the International Irrigation Exposition and Technical Conference, held the crowd spellbound as he regaled the audience with tales of Washington's political elite.

Throughout the morning session and the show's other educational and technical sessions, attendees listened and participated with inordinate interest as

they strived to understand the nation's and industry's issues. Additionally, several people were honored for their service to the Irrigation Association and the irrigation industry. Among those recognized were:

Texas Agricultural Extension Service engineer Leon New was named the IA's 1992 person of the year. For more than 20 years, New has conducted an extension education program on irrigation water management and operation systems across the Panhandle and South Plains of Texas.

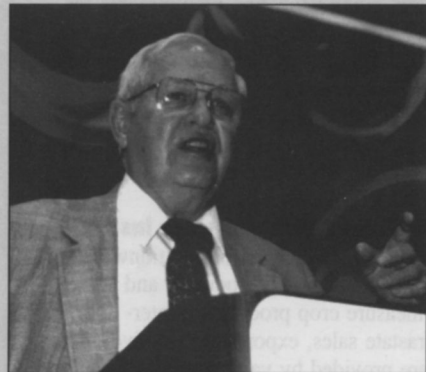
The award is presented annually to someone outside of the irrigation industry who has made outstanding contributions to further the acceptance of good irrigation practices.

Marion Miller was presented with a special Association Achievement Award acknowledging nearly 50 years of outstanding service, dedication and achievement. One of the founding members of the association in 1949, Miller has worn many hats with the IA including its third president, vice president, director and historian. He was founder and president of Anderson-Miller Manufacturing Co. and is now the Rocky Mountain representative for Senninger Irrigation Inc.

Roy Rogers, senior vice president of planning and government relations for Arvida/JMB Partners of Ft. Lauderdale, was presented the IA's 1992 Water and Energy Conservation Award for his work in the plan, design and implementation of the irrigation system of the Weston Community in Ft. Lauderdale.

Weston is a 10,500-acre, mixed use, master-planned community featuring 2,642 dwelling units, 321 acres of parks, eight schools and a Robert Trent Jones Jr. golf course. The entire system is designed around a single controller which maximizes the system's ability to precisely control the amount and placement of water.

Next year's IA show is in San Diego.



Jack Anderson

Illustrated by Texas artist Mark Weakley, the 25-inch by 38-inch poster depicts milestones in irrigation history. There are primitive, one-man efforts such as the Archimedean water screw, and massive

engineering feats including Roman aqueducts. Many of the ingenious devices documented on the poster are still used in parts of the world today.

For your free copy contact: Hunter Industries, 1940 Diamond St., San Marcos, CA 92069; 619/744-5240; Fax 619/744-7461.

Rain Bird Wins Environmental Award

Rain Bird National Sales Corp. was bestowed the ACE 1992 Environmental Award for Packaging, and was recognized by ACE and the United Nations Environmental Program as being among the ranks of environmentally conscious companies.

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USE READER SERVICE #20

Specialty Pesticides

DEBATING MULTIPLE CHEMICAL SENSITIVITY REGISTRIES

CURRENT MULTIPLE CHEMICAL SENSITIVITY REGISTRIES

	Medical Verification Required	Open (No Medical Verification)	Considering Notification Registries
Washington	✓		
Colorado	✓		
Texas	✓		
Louisiana	✓		
Florida	✓		
West Virginia	✓		
Pennsylvania	✓		
Maryland	✓		
Wisconsin		✓	
Connecticut		✓	
Hawaii			✓
Michigan			✓
New Jersey			✓
South Carolina			✓
Virginia			✓*

* Tabled

PUBLIC REGISTRIES, WHEN needed, should be open to all persons who want notification of pesticide applications on abutting properties. That is one opinion.

The registry issue has reached a critical point. Legislative and regulatory activity can be expected to increase. That is another.

Currently, 15 states have or are considering multiple chemical sensitivity (MCS) registries; a topic receiving increased attention with state and federal policy makers and in the media.

Of the 15 states involved with MCS registries: Eight have registries of chemically sensitive individuals requiring some form of medical verification. Wisconsin and Connecticut have open registries (no medical verification); individuals on the registry, either open or medical, must be prenotified of pesticide applications to abutting properties. Hawaii, Michigan, New Jersey, South Carolina and Virginia are considering notification registries.

At the federal level, S. 849, introduced by Sens. Harry Reid, D-NV, and Joseph Lieberman, D-CT, if passed, will create a national statute requiring the creation of a registry of MCS individuals.

Interest and subsequent requests for registries and other forms of notification began in the spring of 1990 and continued the following year when alleged victims of lawn care testified during senate hearings. Subsequently, in 1992, the U.S. Environmental Protection Agency established a lawn care focus group to advise the agency on lawn care policy issues.

One of the focus group issues is sensitivity registries.

BACKGROUND. In the 1940s and 1950s, Dr. Theron Randolph put forward his theories on chronic health problems caused by exposure to common foods and synthetic chemicals in the environment. He eventually became the founder of the controversial field of clinical ecology.

Formed in 1964, the Society of Clinical Ecologists (renamed the American Academy of Environmental Medicine) boasts 600 members and growing.

Clinical ecologists observe disease caused by prolonged environmental exposure. Once sensitivity is triggered, individuals become irritated by multiple other environmental exposures (foods, chemicals, etc.). Total body load or multiple exposures trigger a wide range of symptoms or illness in the patient.

These symptoms include behavior disorders, chronic fatigue, learning disabilities, gastrointestinal symptoms and respiratory

problems to name the most common.

Drugs are usually avoided in treatment. Instead herbs are often used to desensitize patients to synthetic chemicals. In the extreme, treatments have included placing the patient in a stainless steel trailer located in the desert. More common treatments involve moving to another house or switching jobs.

A patient's quality of life often suffers. The most sensitive populations seem to be women, infants, children, the allergic and elderly.

Critics of clinical ecology, the traditional allergists, refer to clinical ecology as a belief system without satisfactory immunologic studies to support the concepts or existence of the syndrome. The American medical establishment has not recognized clinical ecology or its practitioners, the clinical ecologists.

Both the American Academy of Allergy and Immunology and the American College of Physicians have taken strong positions refuting the concepts of clinical ecology.

An active grassroots network exists along with a national organization, the Human Ecology Action League (HEAL) based in Chicago, Ill. The network consists of sufferers and strong believers in the environmental illness theory. They are actively gaining recognition of the issue in the media and with state and federal

legislative bodies. In addition, legal actions by alleged sufferers of MCS are on the increase (reported in the grassroots press).

GOALS. The main goal of MCS sufferers is to have the syndrome recognized as a legitimate illness. Legitimacy will open the door for Medicaid, vocational rehabilitation, welfare, social security benefits, disability payments, anti-employee discrimination rights, handicapped rights, workers' compensation and health insurance coverage.

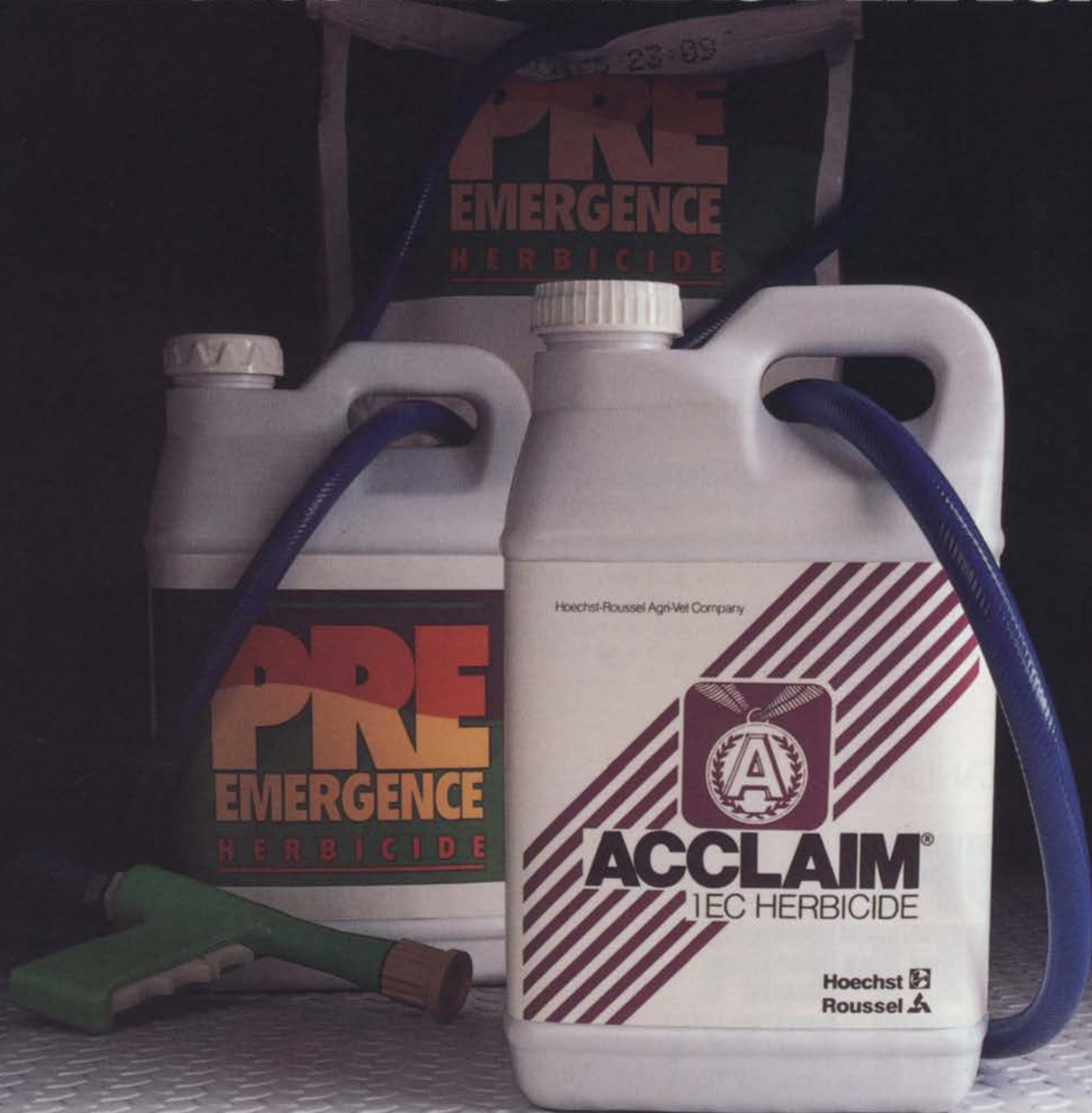
Recently, the issue of rights associated with MCS surfaced in Illinois when three women filed suit that their civil rights, under the state Human Rights Act, had been violated. They claimed they were not notified of a pesticide application to a public park and were denied access because of their illness. The trio wanted all pesticide applications stopped as a solution to their problem.

The debate over the legitimacy of MCS rages on between the mainstream medical establishment and the clinical ecologists. Dr. Donald Black, University of Iowa College of Medicine, stated on CNN's "Health Week" that MCS is a media-popularized condition. He attributes the majority of his patients' MCS claims to a common type of psychiatric disorder such as depression or anxiety.

Whether Dr. Black and the mainstream medical community is correct about MCS

(continued on page 22)

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USE READER SERVICE #18

Specialty Pesticides

(continued from page 20)

or the clinical ecologists are correct, the issue is best left to the medical community. The lawn and landscape industry should not become party to legitimizing the syndrome through legislation or regulation.

A registry that requires a doctor to claim a person has MCS is one additional step in establishing legitimacy. The Responsible Industry for a Sound Environment does not believe this position is in the best interest of the industry or the person who claims MCS.

Persons placing their name on a public list set themselves up for potential harassment at work, school or at home. Loss or denial of medical insurance and the impact on their ability to work or advance in careers must be considered.

If the mainstream medical community is correct about MCS, treatments are being given to patients that lower their quality of life, they are not being cured and they are being drawn into a subculture from which they may not be able to escape. If the clinical ecologists are correct then medical registries will become an issue society will have to wrestle with because MCS is not

just a pesticide issue. MCS will impact everything from perfumes, carpets, VCR's, molds, yeast to every chemical known to man.

The question of open vs. medical registries is often discussed in terms of the impact on numbers. Opponents of the open registry feel that the number of individuals signing up will be too great and overwhelm the ability of the applicators to notify. This is a reasonable concern. However, experience in Connecticut, one of the open registry states, has not shown this to be the case.

Connecticut currently has only 120 persons on its registry in a state of several million. In West Virginia, a notification registry for spraying on rights-of-way, did not produce more than 50 names at its peak. The numbers have continued to decline each year. Today, fewer than a dozen remain on the list.

RECOMMENDATIONS. RISE feels that registries associated with the application of pesticides are not necessary to further assure human health. The EPA requires adequate label instructions for the application of pesticides.

Notification as a right-to-know is a different issue. It is not based on health, but on

the desire to have options like keeping pets indoors, closing the windows and avoiding contact.

RISE recognizes that a state may decide to have a registry. In these cases, notification registries for all individuals (open) who wish to be notified of pesticide applications could be developed if the following requirements are met:

- * Individual registration with state regulatory authority.
- * Payment of appropriate registration fee.
- * Annual renewal.
- * Notifications apply only to abutting occupants, as listed by the registry applicant.
- * Notification requirements must not adversely affect integrated pest management techniques and programs.

The registry issue will continue to be an active issue at the state and federal level in the future. Our industry needs to be united in our position as we interact with policy makers. ■

The author, Fred Langley, is a government relations manager, Eastern region, for DowElanco based in Indianapolis, and chairman of the RISE government issues committee.

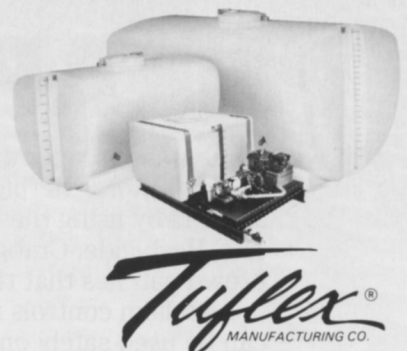
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USE READER SERVICE #16

Family Affair

BUEL MESSER STARTED his business about as small as they come. It was neighborhood lawn care, restricted to the area he and his two young sons could cover by walking.

That was back in 1980. Thirteen years later, Messer Landscape in Staunton, Va., is knocking on the door of \$2 million worth of business with its wholesale nursery, a retail center and loads of landscaping business.

In all that time, the man who is president of the company has never pocketed a dime out of the business. He is 55.

Messer, legally blind since birth, couldn't drive, and his sons, Chuck and Mike, were just 14 and 11 when the three teamed up to offer lawn services in the neighborhood in Staunton.

"My wife had gone to work as a social worker and with our kids at an impressionable age, one of us needed to be home with them," Messer said. He had left a job as a parts warehouse manager.

"The first weekend after I left the work place, there was a large snowstorm here. The boys and I went out shoveling snow for people. That was when we started talking about some kind of service-oriented business. We figured the same people we just shoveled snow for also have lawns that need mowing.

"We ran an ad in the local paper, wanting to do lawn maintenance in the north end of town. It was just something we were looking to do primarily in the summer."

The first year, the Messers cared for just 15 lawns, doing mowing, pruning and mulching. They grossed under \$10,000, using only the same basic residential equipment they used on their own lawn.

"It was a joke," Messer said

Once their business fleet consisted of three pairs of legs and a few pieces of equipment. But now Buel, Chuck and Mike Messer provide landscape management and nursery services to a growing chunk of southeast Virginia.

By Kevin Tanzillo

with a laugh as he recalled that first year. "I think we did buy one new push mower. We didn't know what to buy. We had an electric Weed Eater, too, which is kind of ridiculous. We had a small riding mower; any pruning equipment was just hand equipment."

The second year, the Messers hired a part-time employee with his own truck, and began doing a little bit of landscaping for a realtor who was building houses on speculation. The realtor let the Messers do some of those houses for him, putting in lawns and a minimal amount of shrubbery.

"We started thinking we were

landscapers then, but we had an awful lot to learn," Messer reflected. "But having grown up on a farm, it felt pretty natural to me."

Messer, 55, grew up on a farm in Lima, Ohio. In college, he specialized in education of children with multiple handicaps. After graduating from Ohio's Findlay College, he went to Wisconsin where he worked five years in coaching and teaching at the Wisconsin School for the Visually Handicapped.

What brought him to Virginia was a job as curriculum coordinator and coach at the Virginia School for the Deaf and Blind. While there, he completed study on a master's degree in school administration from the University of Virginia.

Eventually disenchanted with that line of work, he took a job as a parts warehouse manager with a company run by a friend. That was the last time he had a boss.

"I am one of those people who never really worked well for other people," Messer said of himself. But as the man in charge, he has steadily built a business that has outgrown Staunton, and is expanding into other areas.

"We never intended for this to be a year-round business in the beginning. We weren't looking for anything from November to the first of April. But that only lasted about two seasons and then we started looking for year-round opportunities."

Those opportunities came in the form of maintaining commercial properties. In its third season, Messer Landscape had grown to four or five full-time employees, not counting Messer and his sons.

Customers included United Virginia banks (now Crestar), along



Buel Messer and sons Chuck (left) and Mike started the business shoveling snow.

with Hardees and Shoneys restaurants, which provided year-round cash flow for the business. Shoneys became a cornerstone for Messer Landscape, in 1986 accounting for almost two-thirds of the company's gross income, which at that time was \$600,000 to \$700,000.

Interestingly, what brought Shoneys to the young landscape company was Messer's small ad in the Yellow Pages.

"We had the biggest Yellow Pages ad. That's what they told me, anyway. The job was to do



additional landscaping when they added atriums to their restaurants. We landscaped one of them, did a re-landscape and one thing led to another," he said. "Shoneys was doing a lot of expansion in Virginia and Maryland, and we traveled for them, landscaping new installations. We did that from central to northern Virginia and into the D.C.-Baltimore corridor. We did work for their whole chain, including Pargos, Captain D's and some big motels."

A sudden management change at Shoneys reduced that business to only a sliver of what it had been. It also taught Messer a lesson.

"It really put a streak of terror in our hearts, but we were able to pick it up and get rolling with a couple of banks and the Hardees restaurants," he said. "We don't do the Hardees at all now, but we still do some Shoneys and we work quite a bit with Cracker Barrel. It seems like as one leaves, another takes its place."

Despite that optimistic outlook, Messer did learn from the experience. Now the company doesn't put so much emphasis on a single customer.

"We are much more diversified now. We did learn you don't want to hang that much with one com-

pany. These things are too tentative."

On the maintenance side of the business, Roanoke, Va.-based F&W Management is one of the firm's largest clients. According to Messer, the maintenance division represented about half of the nearly \$2 million the company grossed in 1992.

"Maintenance is what our business was founded on. If you tie the commercial and residential sides of the landscape division together, last year that would have been about half," Messer said. "But four or five years ago we began a wholesale nursery division which

has grown into the strongest part of the business. The company leases the 375 acres the nursery occupies, divided among several parcels."

On a percentage basis, it is going to take the lead, said Messer of the nursery's growing importance.

Nursery customers range from one-person operations to large landscape contracting firms and retail garden centers, primarily from the Baltimore-Washington area but also from as far away as Columbus, Ohio, and New England. With retail centers a growing source of business, Messer has added three commission salespeople to target that market.

MESSER LANDSCAPE INC.

HEADQUARTERS: Staunton, Va.

BRANCHES: Richmond, Va.

FOUNDED: 1980 by Buel, Chuck and Mike Messer

SOLE OWNERS: Buel and Becky Messer

PRIMARY SERVICES: Landscape management services including mowing, maintenance, landscaping; wholesale nursery; and retail garden center.

EMPLOYEES: 40 year-round, 70-75 seasonal

1992 SALES: Just under \$2 million

EXECUTIVE SUMMARY

THE CONCEPT: Deliver landscape services to a commercial clientele, maintain a wholesale nursery to provide material for customers from the Midwest to the Northeast and operate a retail garden center.

PROJECTIONS: Breaking \$2 million level for entire business in 1993, and grossing \$3 million from the wholesale nursery alone within three years.

HURDLES: Company has saturated market in thinly populated Staunton and is expanding to more urbanized areas: Richmond, Va., and Greensboro, N.C.

THE FOUNDER

BUEL MESSER

AGE: 55

FAMILY: Married, two sons, both in business with him.

EQUITY HELD: 100 percent with wife, Becky Messer.

SALARY: None

WORK WEEK: More than 70 hours

EDUCATION: Findlay College, Findlay, Ohio; handicapped education. Master's degree in school administration, University of Virginia.

OTHER COMPANIES STARTED: None

LAST JOB HELD: Parts warehouse manager

Messer has operated a retail garden center in Staunton since 1986.

"For 1992, we were up probably 104 percent in the wholesale nursery, up 36 percent in retail sales and up about 40 percent in overall landscaping," Messer said, to show how well the company did last year.

In fact, the company has done well every year except 1991.

"We never had anything less than 30 to 35 percent growth," Messer said, and some years business quadrupled. We only had one year we were at a standstill, and that was 1991. We might have grown 2 percent, but I call that a standstill."

This year, the company will realize a substantial profit, maybe the best in company history, Messer said. He and his sons have reinvested heavily in the business, and that has historically kept profits on the slim side.

Messer attributes the strength of his company to the quality people that work for him. Son Mike is vice president, nursery manager and a lot of other things; son Chuck heads the new Richmond office. Messer also points to Dennis Hastert, the landscape chief; Laura King, landscape architect; Eric Von Seldeneck, who runs mowing crews; Charles Halberg, who heads commercial maintenance; Kenneth Lockhart, nursery sales director; and Carl Van Devander, mechanic.

In the 13 years that Messer has been in charge, he has never taken a paycheck from the company.

"I don't draw a cent out of it," he said, "But if I had it to do over again, I would draw a salary from the beginning. I wouldn't recommend this for others."

"There were a couple of crunch times where if I had drawn a substantial salary the business would have failed. Once you start borrowing, it's a vicious circle."

Messer's wife, Becky, who is also blind, is a social worker for the Woodrow Wilson Rehabilitation Center, a state agency. The Messers live in the same house as they did when the business started.

"I may do something about this and actually start a salary this year," Messer added. "I always said when I start one, it will be a good one."

This spring, Messer Landscape will employ a staff of 70 to 75. About 40 are on the payroll year-



round. The company has 40 trucks, ranging from economy-sized cars to tractor-trailers. A subsidiary, Three M Transport, mainly delivers product to nursery customers, but also includes some general cargo hauling.

Only a few longtime residential customers remain with Messer Landscape. Messer said he'll stick with them as long as they stick with him. The company seeks out only larger residential work, such as the 10-acre estate of one member of the country singing group the Statler Brothers.

Feeling geographically hemmed in, and with the Staunton area saturated, Messer launched the first satellite office in Richmond, Va., 100 miles away, last year. Son Chuck Messer, now 26, is responsible for the branch. The second office effectively doubles Messer Landscape's range, Messer said.

"We did a very large, \$250,000 commercial job in Richmond that started three years ago. That got us going down there, along with lawn maintenance for F&W," Messer said. "Chuck this year did several other commercial jobs, and we are projecting that next year they will gross as much as we did just two years ago here."

Messer predicts the Richmond office will grow a lot faster because it is a better market. The

firm is also considering opening another branch in Greensboro, N.C., in the next 12 to 18 months.

"We're the small kid on the block there (Richmond), but we will probably do the same things we do here," he said. "We go in with a couple of companies we worked for previously who have locations there. They are familiar with the quality of our work. Chuck is a strong marketer, too."

Messer said he and his key people are considering other possible satellite branches beyond Richmond and Greensboro. They have a few places in mind, but want to observe for a while before committing themselves. Eventually, they project the company will grow to five or six branches.

Messer has never let his blindness -- he has 5 percent of normal eyesight -- hold him back.

"It was a hindrance in the beginning, when none of us could drive, but there aren't many other limitations," Messer said. "I used to do all the design work. Not that I put it on paper, but I created it. I think it was a gift from the Lord, the vision to be able to create something out of a sense of what it should look like. I never did have any training in landscape design."

In the following interview, Buel Messer discusses how he has man-

Messer Landscape Inc. produces general nursery stock for Virginia and northward.

aged the addition and growth of his nursery business as well as his maintenance firm -- the place it all started.

Q. What is the secret of your success?

A. We emphasize the special needs of our customers, particularly in the retail and homeowner segments. It has always been the boys' desire to satisfy the customer regardless of the bottom line. That is very contagious in a service-oriented business. If you please that kind of person you won't need a lot of other advertising.

Q: How did you develop the wholesale nursery?

A: We started the retail center in 1986, primarily buying from a re-wholesaler. We wanted to control the quality and prices so we did some investigating and in 1987, started advertising that we were re-wholesaling. It didn't amount to a lot beyond our own needs. We leased a couple of properties of existing stock in 1988 and 1989, and started planting our own. We began to see our niche in the business as supplying the needs of landscape contractors and some retail centers. Judging from spring orders, we are seeing stronger interest among retailers.

(continued on page 28)

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(continued from page 26)

Q: What do you produce in the nursery?

A: We produce general nursery stock for zones 4 through 7. We grow for Virginia, Tennessee and northward. We are strong in the whole range except the container section is largely re-wholesale. That is one area we will focus on this year, developing more of an in-house container operation.

Q: What kind of challenges did the wholesale nursery present?

A: In the beginning, we spun our wheels a lot. We did a lot of cold calling on people for the business and some of the early customers were not solid leads. They were people looking for easy credit. We sold to one person who went bankrupt. I lost \$20,000 on that. We're still trying to collect on some out-of-state sales from 1988. I guess my advice is to know your customers.

Q: How do you prevent similar situations?

A: It's rare that we'll give credit



Workers move a 10-foot sugar maple with the aid of a 90-foot Big John Spade.

on a first-time order. We have a policy to collect a deposit prior to digging on a first-time order. Also, we do a very thorough credit check. We have a form that asks for four trade references, a bank reference

and an installment reference. We follow up on that and don't give any credit until it is solid.

Q: How does your nursery meet the needs of landscapers?

A: We do market surveys. We

send out questionnaires to people who buy a reasonable volume. We ask them what they are likely to buy this year, what they see as a need not being met in the market, what will be strong next year and five years from now. We also ask people these questions at trade shows in our market area. In the beginning we tried to supply some material that was too common, because we weren't knowledgeable.

Q: What changes do you plan in the nursery?

A: We probably won't expand our acreage, but we will try to make it more productive. I see us owning some land instead of leasing so much. I'm not so sure it's a solid place to put money if you have any, but we are going to pursue it.

Q: Your nursery sites are scattered, is that a problem?

A: It really isn't cost-effective traveling back and forth. If you have an order that needs plant

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material off three or four different properties, it takes a lot of running to put it together. We have plans this year to phase out two of the properties, so we will be back to five. As we buy a real home base for the nursery, we will try to rent land in the immediate area.

Q. You have big plans for the nursery's future. How do you figure to achieve your goals?

A. Service. We are going to meet the customer's needs even if it means working all night to find something someone needs planted the next morning. That is a chance to land a regular customer. Some of our competitors won't move a customer ahead for any reason. That's not our theory. We may have to go two or three states away to find a particular plant to finish a job. Maybe we won't make a profit on that order, but we will serve the customer.

Q. How do you see your overall business in the next few years?

A. We think the wholesale nursery will grow significantly. We will probably gross \$3 million out of that segment within three years.

I think that will level off then. Landscape maintenance will probably not increase a lot out of our Staunton facility because it is close to saturation. As far as retail, we are not sure what we are going to do about that. We are not in a high-traffic area so we have to market our ears off to make it work. It is a lot of work for what we get out of it. We will decide whether to continue with that or not.

Q. You started business in the depths of a recession in 1980. How did you cope with that?

A. Early in the business we had a policy of not borrowing money. The first new tractor I ever bought was a large mowing tractor we purchased with the understanding we would pay it off by the end of the season, with no interest. That worked out. Those are the kinds of deals people can make if they develop a good reputation. Also, most of our equipment is used. We've only bought one new truck since we've been in business. We have a good mechanic and we do our own body and fender work,

painting, rebuilding motors, everything.

Q. What decisions do you regret?

A. There are a lot of areas where we should have resisted growth. We grew before the cash flow was there to purchase equipment. Maybe if we had contained growth, we might have been more solid at first. That is what I recommend to others; if you are two or three years into a business, resist those challenges until you are ready.

Q. How do you motivate your employees?

A. They really motivate each other. It is a family atmosphere. Everybody is striving for the same goal. I want all of these people to own a piece of the business. I want it to be something that always makes them proud. These people get a thrill out of every bid. It is like an athletic contest. My wife thinks it's the coach in me. They are just a great bunch of people.

Q. You may not take a salary, but what about your sons?

A. Chuck has gotten a subsistence salary, but will get a better one this

year. He has done extremely well. Mike has never drawn as much as other key employees. We want them (sons) to know some of the pain, and I think the boys themselves have not wanted more than what their counterparts are making.

Q. What is your typical workday?

A. Mike picks me up in the morning about 6 or 6:15 a.m. The supervisory staff gets together until about 7 a.m. We go over what we will do that day and what we project for the next few days. It helps set the tone for the day. Usually I get home by 6 p.m. I like dealing with customers, so I do most of the selling on Saturdays in the retail garden center.

Q. With Saturdays, you're working about 70 hours a week?

A. Yes, conservatively. We are real strong on family life, though. We believe the Lord made a day to rest. The retail center is not open on Sunday, and even I don't go down to work some Sundays.

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



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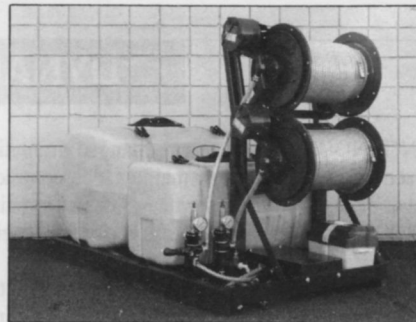
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Maintaining the Cutting Edge

ASK OWNERS OF profitable landscape management firms what makes their companies successful and they'll likely collaborate on at least one objective: Maintaining a professional image.

How the companies go about attaining that varies as widely as the services each provides. Many attribute their ability to skilled staff, expert sales people, superb marketing and outstanding management. Whatever the recipe, there are several multimillion dollar companies out there that have overcome the image of "yard apes" and "mowing jockeys," as one contractor delicately termed it, and built solid, professional reputations.

"The 1980s were tough as far as overcoming the yardman image. Now with the help of associations, environmental awareness and being more active in legislation, the industry is gaining a lot more respect," said Dale Elkins, regional manager for ISS Landscape Management Services in Tampa, Fla.

"If there is a pecking status in

Mowing contractors have fought to shed the "yardman" image often while struggling to mature into full-service landscape maintenance firms. The negative stereotype may still linger, but top contractors are using a no-nonsense approach that defies skeptics to question their professional integrity.

By Cathy Hoehn

the green industry, I would say mowing contractors are the lowest. Landscape architects and nurseries probably come out first. Large botanical gardens and theme parks next, then irrigation, suppliers and then the people that put it all together to make the park, complex or house look the best."

David Frank of David Frank Landscape Contracting in Germantown, Wis., believes the jaundiced image of mowing dissipated years ago. "I don't think there's a negative stigma at all attached to horticultural management, mowing or selected services," he said. "Almost 100 percent of the premier companies all over the United States have gotten into maintenance, albeit full-service maintenance. I think it's one of the good places to be."

Mowing contractors don't need to portray themselves as behemoth, internationally reputable corporations in order to claim success. Even sizable com-

DYNAMIC MOWING TRENDS

THE MOWING INDUSTRY grew and changed dramatically in the past decade, according to landscape maintenance contractors. Property owners that once only worried whether or not a maintenance crew would show up are scrutinizing every aspect of their land to enhance its appearance and value.

Contractors expanded their services to accommodate the property owners, and equipment manufacturers, finally recognizing landscape contractors as major users of product, responded with an onslaught of walk-behind and rider mowers geared specifically for the landscape industry.

"Years ago, you had two or three companies that made walk-behinds and some larger rider mowers. Now they all essentially make the same mower," said Dale Elkins of ISS Landscape Management Services in Tampa. "You're no longer looking at efficiency so much as where you can get the best service. Or, efficiency is no longer how much you can mow and cut but how long the mower will be broken down."

Elkins claims walk behinds have made a comeback, which may cause a decrease in rider purchases.

"It seems like we're back to where we were 10 years ago," he said. "Front-end riders came in, everybody had fancy \$15,000 machines and discarded their walk behinds. All they ran into were more repairs, injury to the surrounding landscape. They found out they didn't save on labor because they had to come back and trim the hours."

Of all the types of mowers on the market, Ground Control of

Orlando finds hydrostat mowers most adequately meets its needs. "We looked at the technology, what's advantageous to us and the client, what's cost effective," said Mike Guthrie. "Manufacturers have done a very good job. They've made constant improvements that benefit the industry."

David Frank of David Frank Landscape Contracting in Germantown, Wis., said mulching mowers need the most improvement. "There are a lot of considerations when looking at a mulching mower. Does it mulch grass, does it mulch leaves, does it mulch wet grass, does it mulch deep grass or can you get a piece of equipment to work in a number of situations? The quest is finding the best system to mulch where the turf looks great when you're finished and you don't have a real abnormal increase in frequencies," he said.

Looking ahead, Elkins muses the dubious role robotics may play in upcoming years. "There was talk back in the mid- to late-1980s about robotics, a mower run by a handheld remote control. I don't see that coming into play, but maybe in 10 years. Who knows? There wasn't a fax machine 10 years ago."

Others ponder the role growth regulators will serve in the 1990s. "We use a lot of growth regulators in utility areas, hillsides, ditch areas that are under water half the time, areas you can't get to with mowing equipment," Frank said. "I think the potential development of growth regulators with no negative side effects could change the mowing industry a great deal."

panies start out humbly. Frank, for example, began business in 1959 "as a young lad," running a neighborhood gardening service. Later, he hired high school buddies to assist him in mowing and sometimes fertilizing nearly 300 lawns a week in suburban Milwaukee.

"We had an embarrassingly pathetic image, or no image, in the early years," Frank said.

Upon graduating from college in 1972, he decided to pursue a career in lawn maintenance. "The first thing I did was get active in the Associated Landscape Contractors of America and the Wisconsin Landscape Contractors of America and start working on developing a better image.

"The second thing I did that was a big mistake was expand into design/build. That was a very costly decision that took about six years to learn, by mistakes and experience, all the various ways not to go about getting work done."

Most top contractors insist that image plays a vital role not only in securing contracts, but expanding on them.

"The first 30 days of an account are the most critical," said Mike Guthrie of Ground Control Landscaping in Orlando. "You're going to form an impression to win a potential client over or you're going to lose them forever.

"What (the client) is looking for -- do the maintenance operators get there on the same day every week, what are they dressed like, what do their vehicles look like, do they park in the correct areas? These are all little things, but they make a big impact. Most importantly, can the client see a noticeable difference in the property within the first two weeks and at the end of the first 30 days?"

Michael Byrne of Byrne Brothers Landscaping in Essex, Mass.,

said being located in New England has made it less important for his company, which focuses mainly on high-security office parks, to concentrate on image. "I don't think (lawn maintenance) has reached the level of maturity in this part of the country as it has in other parts. We're able to present ourselves much easier than we expected to."

Frank insists that small, startup companies can present a positive image regardless of financial restraints. The key is knowing the right image to present.

"A friend of mine runs a small company in Milwaukee. He projects a frugal image by having very mundane-painted trucks, but clean, with the company logo in real small letters," he said. "It has a utility-type image, and I think that's useful in marketing to industrial clients. You have to have a cohesive marketing plan even at the onset."

Of course that plan has to carry through to every step in the delivery of services. "That's a key objective throughout the company,

promoting a strong and positive professional image," Frank said. "We do that in hundreds of ways -- equipment and uniform policies, how to handle time requests and so on."

Company officials interviewed touched on five facets of their business that go hand-in-hand with maintaining a professional image: marketing strategy, customer service, communication, financial management and diversification of services.

TARGETING CLIENTS. Marketing seems to carry a loose definition among top mowing contractors. Some develop elaborate strategies and hire a full-time staff to promote the company. Others, such as ISS, have a marketing department but depend on all company employees to sell its services.

"We have no salesmen on our staff. Everybody sells. Of course it's a little bit easier when you're larger, a little more well known," Elkins said.

Regardless, every company ad-

As property owners seek better service for fewer dollars, contractors need to strive to impress.

Photo: Yardmaster

ministers some sort of marketing program based on what type of client meets their specifications. Ground Control Landscaping targets its market Jan. 1 each year, developing "a hit list that goes after the type of client we're interested in," said Guthrie.

Ground Control's sales staff presents prospects with what Guthrie calls a "propaganda package," stocked with a brochure, company profile, brief history, outline of services, a list of awards and a list of associations with which the company is involved. It also includes a client reference sheet listing six clients from the multihousing division and six from the commer-

cial side.

"The (potential client) can then call our past clients and get a very honest evaluation of who we are and what we do. It's the best advertising we can get," Guthrie said.

Most contractors agree referrals bring in the most business.

"The success rate of closing a deal is much higher on a referral call. If you cold call on 100 potential clients, 10 will give you the opportunity to bid, one will sell," Guthrie said. He maintains that cold calling remains an essential marketing tool, however.

Frank stressed that a company must develop a profile on a typical prospective client and cater its marketing program to the usual needs of that profile. "Economy, for example. If money is the single-most important thing to the company you're targeting, you'll emphasize cost effectiveness and certainly won't use some line about the extra money that you charge," he said.

He added that industrial property maintenance demands less stringent standards than office parks



ISSUES TOUCHING THE INDUSTRY

and multifamily housing, and thus calls for lower-keyed marketing.

Most of the larger companies mainly serve commercial and industrial properties. Few, if any, depend on residential maintenance for their entire revenue. Some claimed they can't compete with the small, one-man operations in that field. Others just outgrew that aspect of the business.

"In residential work, you have to be committed to working week-ends and nights, and seeing your clients when they want to see you. It's pretty demanding work," Frank said. "It is my opinion that commercial work is a little bit easier to manage."

AVOIDING PROBLEMS. Effective communication and customer service work hand-in-hand to bolster relationships with clients. Maintaining regular communication, both within the company and with clients, keeps everyone on the same page and nips potential problems in the bud before they get out-of-hand.

Some companies contact cli-

CONTRACTORS INTERVIEWED pinpoint several industry issues as areas of concern for 1993.

Mike Guthrie of Ground Control in Orlando points to debris disposal. "It's a big concern, particularly the cost factor. A lot of contractors don't know how to deal with it properly or just aren't dealing with it."

He also cites chemical regulations as a pressing issue.

"Municipalities each have their own regulations, which means we have to take constant care to put forth a professional image, knowledge and expertise when the competition does not."

Workman's compensation and insurance are the biggest issues in Massachusetts, said Michael Byrne of Byrne Brothers in Essex, Mass. "Pesticides aren't as much of an issue for us, but we have a couple of claims right now that as an employer we have very little recourse," he said.

Safety is always an ongoing issue, contends David Frank of David Frank Landscape Contracting in Germantown, Wis. "When we buy or rent equipment, we're very concerned about the operator's safety, as well as people around the equipment," he said.

Lee Greathouse, Greathouse Landscape Co. in Nashville, Tenn., considers drug testing an issue that eventually will affect all contractors. He's already received an invitation to bid on a job that requires all employees to take drug tests. "It's the wave of the future. I think it has helped us, certainly. We have a better class of people working for us, a lower turnover rate, less training and less loss of time," he said.

ents on a weekly basis. Others, such as Ground Control, schedule daily meetings.

"The foremen sets up a time to meet briefly in the morning with the property manager to discuss any problems that need to be addressed, any work orders, and communicate what we're going to do," Guthrie said. "Then they

meet at the end of the day to walk the property to see what we've done, or review the property sheet that tells what we've done. Develop that line of communication and you're going to catch a problem before it festers and really becomes a major problem."

Michael Byrne of Byrne Brothers Landscaping instructs his fore-

men to stress some-thing positive the contractors did on the job each day. "We really paid a lot of attention to communication and customer service this past year and saw a big difference in our renewal rate," he said.

As far as customer service goes, things which seem like mere signs of courtesy go a long way in cre-

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ating a favorable "serve-oriented" impression. For example, "should the client ever call into the office with additional needs, the receptionist has to recognize that it's a client with needs and get the call to the proper person in a timely fashion," warned Guthrie. "That return call is key. If they call at 9 a.m. and you don't call them back until 4 p.m., they've had seven hours to fester and that's not good.

"You've got to have response time. You may not be able to solve their problems right then, but at least acknowledge a problem exists and set a timetable to resolve it. Then follow through and make sure it was done in the fashion you said it would be. That's key."

BUDGETING RISKS. Sound financial management plays a vital role that often snares smaller companies, Guthrie said. "They can put together a budget, but they may not understand the nuts and bolts of different accounts, taking into consideration the cost of a mowing truck, insurance, depreciation, wages, how much profit

they should be making. There are a lot of hidden costs in this business. You have to have a sharp financial head, or you can get into trouble overnight."

He quoted figures indicating that only one in five maintenance contractors that started companies in 1992 will remain in business by 1995. He also noted that, on average, 92 percent to 96 percent of contractors over a five-year period close up, sell or go bankrupt. "It's easy getting into this business. It doesn't take much capital. It's staying in the business that presents a challenge," he said.

Most companies said they review daily or weekly reports on costs incurred. "We're real big on strategic planning -- setting budget against plan, percent growth, percent profit," said ISS' Elkins. "We're a day-by-day, number-watching company. We're not month by month and that helps us. We're able to see things before it's too late, such as labor, which is 40 percent to 50 percent of our entire revenue, and federal tax burdens.

"We also have an aggressive budget. Like for '93, we need to show a 10 to 15 percent growth. When you're doing well over \$20 million, that's pretty good. You get to a point where profit won't grow by that much."

GROWTH CONSIDERATIONS.

Diversifying services can be a crucial move for companies looking to grow or sometimes just retain current contracts. As property owners seek better service for fewer dollars, contractors need to hone their skills and strive to impress.

"The question of diversification from a broader standpoint is something businessmen ask themselves all the time," Frank said. "Look at the lawn care industry. Many, many of the companies have at least dabbled in mowing or provided a broader scope of maintenance services. And almost all design/build companies and construction companies have gotten into maintenance in the last decade. So you have all these companies expanding in different directions."

"It's difficult to offer just mowing, particularly on the West Coast where there isn't as much turf as in the Midwest and on the East Coast, and where the industry is so competitive," said Ground Control's Guthrie. "Clients don't want to have to go through several companies; they want a full-service company to meet all their needs, and that is better for the mowing company as well. It maintains constant communication and keeps competition off the site."

But, he cautioned, there is a downside -- two key factors that need to be regarded. "You have to know your target market that you're geared to handle and can handle, and two, know your limitations and where to draw the line.

"We didn't get into chemicals until three years ago. Ten years prior to that, we subbed it out. We didn't have the knowledge or expertise. After deciding to do it, we spent a year and a half developing a training program, and getting the right people, equipment and technology to do it."

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USE READER SERVICE #40

Frank, reflecting on the early days when he expanded into design/build, said, "I don't think we were knowledgeable enough at that time. It would have made sense to get better training. The key to diversification is really understanding the business you're getting into and we didn't. It was very discouraging."

Once Byrne Brothers expanded its services to include maintenance, they feared the impending recession might hurt their business, but it actually spurred the new division's growth.

"The recession hindered our construction business but really helped our maintenance," Byrne said. "It made us work harder to get out and get more work, which we probably wouldn't have worked as hard to develop otherwise."

While boasting a range of services from tree and shrub care to landscape construction, Byrne Brothers' maintenance exceeds the other divisions, growing 30 percent each year. "We're expecting to do that if not even better this

year. I think we got into the business at the right time, grew tremendously fast with our real estate economy," Byrne said. "Once that fell out, it really taught us to be much better business people, pay attention to what's going on."

Overall, say contractors, there's nothing wrong with companies wanting to grow and expand, but

"Don't look for quick growth in one year. Take time to consider cost factors."

they need to guard against some pitfalls.

"Companies need to identify what they do well, what made them successful, and stick to that," said Rich Akerman of Northwest Landscape Industries, Tigard, Ore. "If they can deliver other services with quality that will easily adapt

to services they already provide, then OK."

Byrne advised smaller companies aiming to expand to look first to their existing clients for more opportunities. "Look at your own accounts for more work. That's an area that was very successful for us last summer. We were constantly submitting proposals for different work to our own customers. It's all non-bid, negotiated work," he said.

Bruce McQuay, production manager for Maintain Inc. in Fort Worth, Texas, warns companies against delving into new areas too quickly. "Don't look for quick growth in one year," he said. "Take time to consider your cost factors and how they are affected by your need for new equipment, etc."

Akerman anticipates that middle-size companies eventually will be squeezed out of the market due to stricter government regulations, making room for more small and fairly large companies. "I think with insurance, overhead and other stipulations, middle-size companies are finding it harder to survive."

Most contractors foresee mowing markets continuing to expand, despite recent innovations in self-maintaining grass. "The appearance of residential and commercial properties continue to be of importance to property owners," Frank said. "Commercial property managers 20 years ago might have had the attitude that mowing was just another service like garbage collection, and as long as you showed up they weren't really sensitive about more than that. Now they're calling for lot of annual color, they're concerned about how you're going about your work, and the appearance and results of your work."

Property owners will become increasingly sensitive about the appearance of their properties, he added. "I think that is our attitude as a culture. We're very environmentally oriented and getting more and more sensitive as time goes on."

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

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USE READER SERVICE #19

The Continuing Debate

How well does the servicing dealer network really work?

By Bob Gitlin

PHIL CHRISTIAN has a horror story to tell.

It seems, according to the Alpharetta, Ga., consultant to the lawn care industry, that a big St. Louis contractor had a hydrostatic motor go out on a mower. He called his dealer who said he didn't have one. He took the motor to another dealer to trade in on a functioning unit. The dealer said, "I'm sorry, I can't do it. You're not in my territory."

The contractor argued that the customer was in the dealer's territory. Could he get his customer to write a check? The dealer said no. The front lawn of a world headquarters didn't get mowed. The boss came in on inspection day and fired the contractor.

DESPERATE STRAITS. Christian monitored a meeting among leading manufacturers and contractors two years ago for Lawn & Landscape Maintenance.

"There was a lot of talk about territories," he recalled. "The contractors said, 'We're not interested in your territories. What we want, when we buy a \$19,000 piece of equipment, is to get the part wherever we can.'"

But don't lawn and landscape contractors have to be judicious in their buying practices?

"Anything over \$3,000, you've

got to shop it," said Rich Gaffney, whose Gaffney Landscaping, Cleveland, employs as many as 10 men in peak season.

Yet many servicing dealers impose territorial restrictions that contractors don't have any control over and can't possibly respect, Christian said. "Often the dealer is trying to wait to accumulate a big enough volume of parts so he can adjust for the next discount. The poor contractor sits out there with the season eating him up while there is an argument about parts."

In the case of the St. Louis contractor, there were plenty of motors in stock, right outside of St. Louis. "The contractor was in a desperate situation and nobody would listen to him."

If dealers play funny games with contractors' heads, maybe you have to understand the pressure they are under, said Carl Iofredo, who for 47 years has sold everything from mowers to fertilizers.

Iofredo, president of Lee Road Nursery, Cleveland, used to give credit freely. He was proud to help many a novice grass cutter grow to prosperity. But he can't be nice anymore. He said 50 percent to 60 percent of landscapers do not pay their bills. From this army of one- or two-man operations getting in

business with a pickup and a mower has emerged \$20,000 Iofredo can't collect.

In some areas, dealers won't sell to an end user outside of a certain radius. The restriction generally pops up only in territories manned by a closer dealer. The problem is that some landscapers go to one dealer over another searching for a better price, then go to the dealer closer for service. The dealer farther away suffers when he can't make money off service contracts; contracts which generally represent the lion's share of the profits.

Iofredo said dealers have the right to assert certain strictures.

"Most people who buy a lawn mower or tractor at one dealer and then want service from another, generally don't get it. That's true throughout the trade. Wherever they buy it, that's where they go to have it serviced. Lawn Boy's got a contract out now that states that if anybody buys a Lawn Boy, no matter where they buy it, and they take it to a service dealer, he has to do it. But you see, they can turn that down. It just doesn't hold up."

DEALER/DISTRIBUTORS. Stocking distributors try to keep dealer shenanigans to a minimum. "We give dealers price sheets," said Christina Harris of Outdoor Equipment Distributors, Raleigh, N.C. "We have a suggested retail and on some of them we have promo prices. If it's just a suggested retail, without a promo price, they cannot run at 10 percent lower and get co-op on any advertising they place."

Harris said two-step distribution works and is here to stay.

"We cover four states. Two-step lets us be on a more personal level with our dealers, offer them more personal service than a manufacturer covering the whole United States. Most of our customers, we know by first name. We do our best to get parts to them next day. If we don't have it we'll have it shipped directly from the factory."

Different sized lawn/landscape

contractors buy whole goods, parts and servicing differently.

"We're a licensed lawn care contractor," said Bob Scofield, vice president in the golf management section of Environmental Care Inc., a multimillion dollar company based in Calabasas, Calif. "We deal directly with the distributor. There are probably some very small one-man gardening people that buy their mowers from a local Toro dealer, a garden center that's in their locale, where they also buy their plants and stuff like that."

"If you are a licensed landscape contractor you're going to buy from distribution houses for both equipment and materials, fertilizers, chemicals, supplies."

The two heavy-equipment manufacturers ECI deals with mostly have done a good job of making sure dealers don't compete with one another at the expense of the end user, Scofield said. Bypassing the middleman with national-account status is what does the trick for ECI.

"This means you can in fact buy the equipment at a predetermined price you're happy with and can have that equipment delivered from any number of dealers that are convenient, who are bound to service it as well."

But even ECI, which enjoys such arrangements, still runs into problems with the servicing dealer network.

"We deal with manufacturers who have independently owned distributors, who are not uniform in the way they look at us. A dealer in city A services us very well. Down the road 200 miles in city B, our people are saying they don't want to buy that equipment anymore because they can't get it repaired or serviced. That fouls us up. It's to our advantage to zero in on certain pieces of equipment we deem efficient and safe, and duplicate that in all our branches."

ECI will continue to press manufacturers to take stronger hold of their end user situations, Scofield said.

Timely parts distribution is critical to a good relationship between manufacturer, dealer and end-user. Photo: Cushman

Ready parts availability has everything to do with policy set by top-level parent ownership.

OBSTACLES. Doug Hinkle, shop manager, Northwest Landscape Industries, Tigard, Ore., is angry. His love affair with a major manufacturer of lawn maintenance equipment is officially at an end, even though it means he may have to revamp his whole fleet, which includes 150 of this company's blowers.

"I can't get the parts. They have no sales staff, no service staff. Now I have to go through another dealer to get parts. I pay next-day-air rates and still have to wait over a week every time."

He's tried to make the distributor aware of his problem, to no avail.

"We talked to their salesmen, whoever is in control there, and they blew us off like we weren't there. From what I understand, the dealers complained they were selling direct to us. A couple dealers wanted our business."

He has no complaint with most distributors/dealers. "They do a great job."

Gaffney said he's also gotten slow response from certain dealers.

"It's no small problem," said Hinkle, who manages three shops, keeping parts at the main shop and distributing them to the other two. When getting parts is like pulling teeth, he's forced to overorder and overinventory, creating a debt burden for his company.

SUPPLIER SUPPORT. A John Deere spokesman, Bob Tracinski, sheds some light on efforts of the big boys to be a little faster on their feet. For one, dealers get a helping hand in moving product.

"John Deere has an advertising co-op package for our dealer organization, a very generous one," he said. "It encourages the dealer to advertise Deere products: newspaper, TV, radio, billboards. The



dealer spends X amount of dollars on advertising and sends us proof it was run. We reimburse him for half his expenses." Sales incentives include discounts for quantity and early orders.

A new computerized program will further protect dealers from being locked into order volumes that may not fit in with unforseeable factors.

"As the dealer sells the product he can settle immediately with the manufacturer," Tracinski said. "We keep a better finger on the pulse of sales activity around the country. Now dealers have to guess how much they'll sell next year and place their order on that basis. But there could be a drought, or a

problem with the economy in their region. Other dealers may get more sales than expected. By keeping track of electronic settlements coming in immediately, we can slow distribution of products to sluggish areas, speed it to where sales are going strong. You don't have inventory piling up in dealerships that are having a challenging year."

"You always have a certain cross section of end users that, for whole goods, will really shop for the deal," said John Smith, president of Exmark, Beatrice, Neb. "He may go a longer distance to shop those deals on whole goods than he will for parts. And what he'll do is shop and get the cheapest

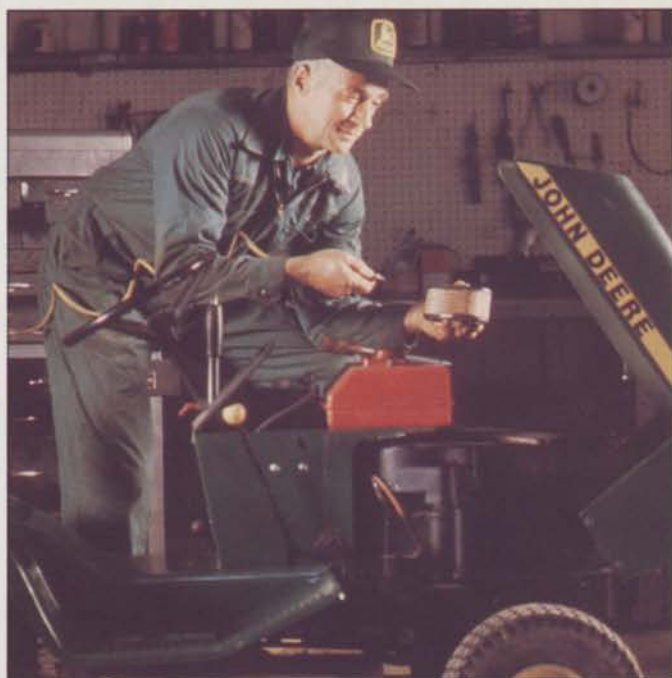
price. Then when parts are required, he will go to his local dealer. He is more than likely going to go to that dealer who's going to provide quality service. He'll usually become loyal to that dealer and use him as a one-stop source."

"We have some effective parts-availability measurement systems in place," said Michael Anderson, director of sales for commercial products at Toro, Minneapolis. "We track the fill rates very closely and have some pretty stiff requirements for distributors. We run at a very high number — I think the consumer number is just as high. We have a direct-ship program in place for our parts that our distributors can use."

One way to make sure lawn care contractors don't twiddle their thumbs and lose money is running a warehouse big enough to keep the volume flowing all through the distribution network.

"We have the most current parts distribution center in the United States," said Bob Brophy, territory manager for Cushman, Lincoln, Neb. "We can pick and ship 17,000 items a day. If the order comes in the night before, we have it out before noon our time. And then on top of that we have people who are there just to handle what we call class-one or emergency orders; it will leave that day, air freight, so they're got it in their hands next morning."

"All our dealers are servicing dealers," said Peggy Hoffman, speaking for Scag, Mayville, Wis. "We hold service training schools for all distributor personnel. A lot of them hold service training schools for their dealer personnel. If an end user runs into a situation where the distributor does not have a part, we will drop-ship that part to the dealer."



"We don't put dealers on top of one another," said Dick Tegtmeier, president of Encore, Beatrice, Neb. "Some companies put dealers way too close together. They get to fighting among themselves, and

the landscaper is out in the cold. We have five through the whole of Kansas City."

This breeds camaraderie rather than bickering, he said. Dealers even go pick up loads of parts to-

gether. "And that works out well." John Deere gives dealers a hand by reimbursing those who advertise their products.

gether. "And that works out well."

Excel Industries, Hesston, Kan., admits to having dealer territories. "We have 85 factory-direct dealers," said Ken Raney, a company spokesman, "and two or three distributors in each prime location such as New Jersey and Florida. Any time a dealer sells outside his territory, he has to cut a check to the dealer whose territory it is — 12 percent of the markup."

The problem doesn't arise often, he said, because dealer territories are fairly large.

"It's probably farther to go to the wrong dealer than to go to the right one. We will UPS a part out right to the customer; we'll drop-ship anything they want overnight. We've taken every step we can to see to it that that guy can get the parts as quickly as possible." ■

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

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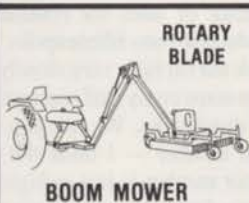
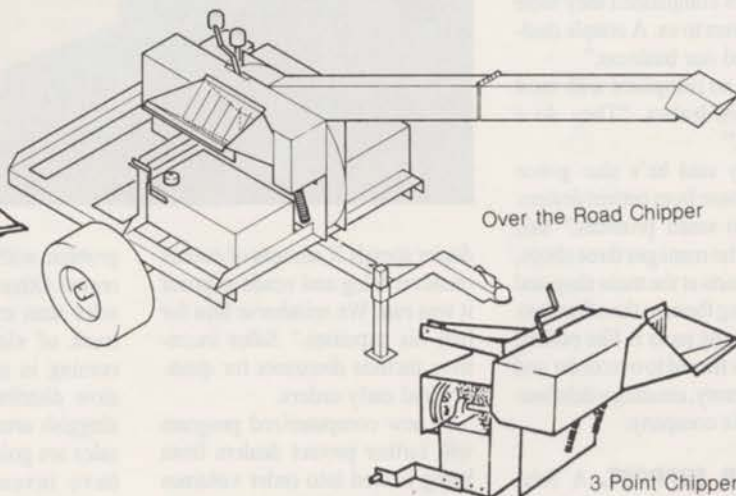
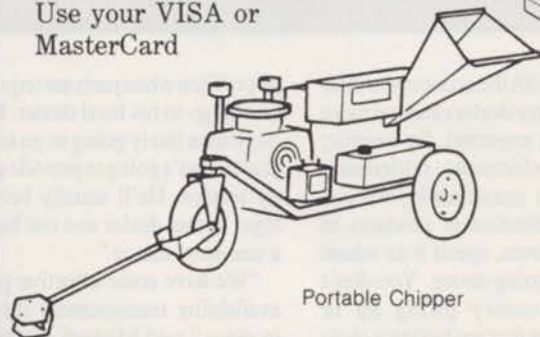
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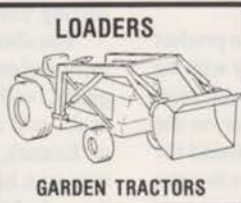
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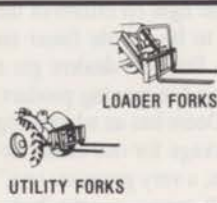
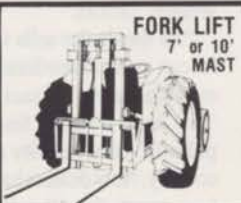
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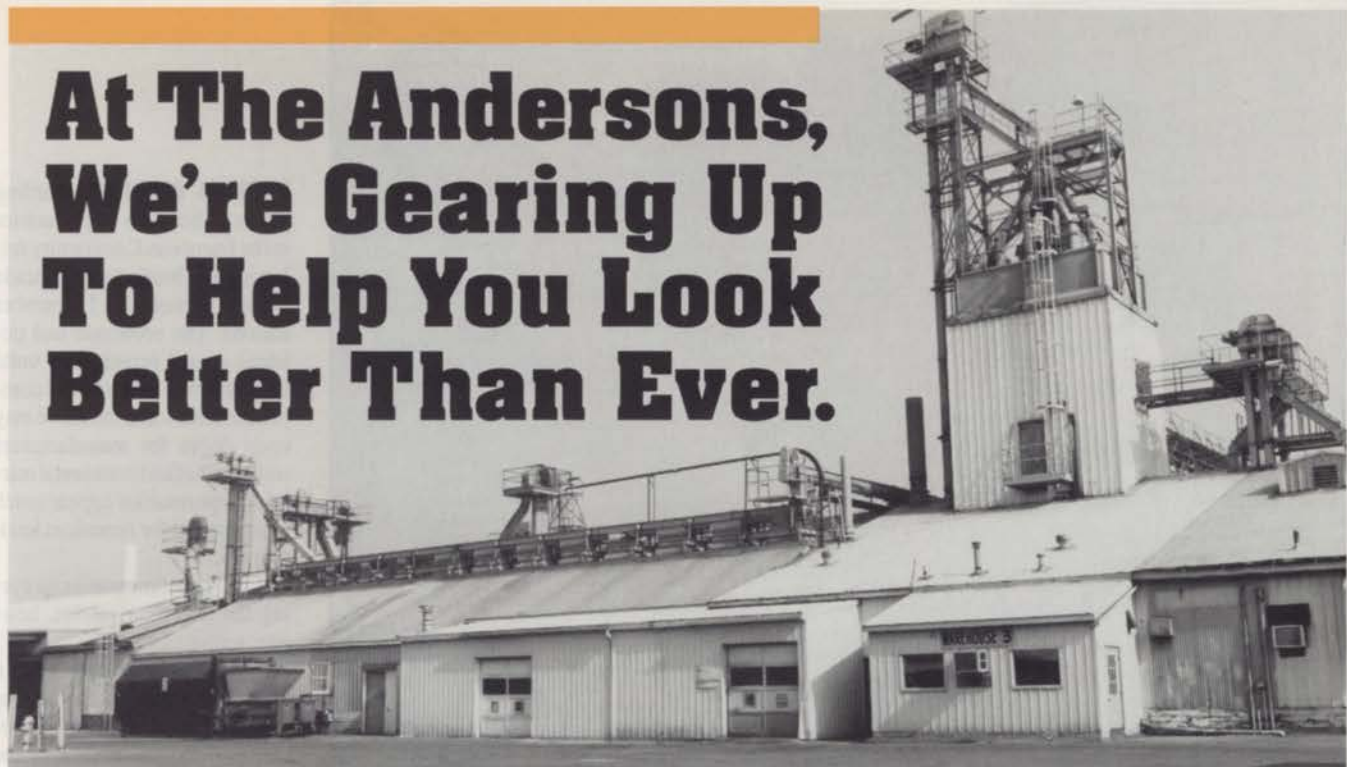


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Copenhagen, Denmark. Photo by Larry Heimann.

Tapping an Uncertain Market

The European Community finally is breaking trade barriers to invite competitive selling and to harmonize product standards. The accord opens doors for chemical and equipment manufacturers worldwide, but most likely leaves the western European landscaping market unchanged.

By Cathy Hoehn

RUMORS AROUND regarding potential business opportunities in the European Community following the break down of trade barriers between the 12 member nations. The economic and political accord promises to unite Europe into a tough world competitor. And while the move may open doors for manufacturers servicing turf and ornamental markets, opportunities appear much more limited for American landscapers.

A number of companies are eyeing the European market, however warily.

"The driving factor is, all of a sudden there's a lot of hype over golf and resort construction because of the unification of the European Community," said Bill Liles, business director for Ciba-Geigy's turf and ornamental division, Greensboro, N.C. "They're not producing as many crops, they have idle farmland and they're looking for uses and how to attract tourism. That's causing golf projects to grow and we want to be in on the growth trend. We want to evaluate and see what the future is."

Ciba-Geigy, an international pesticide manufacturer, sent a representative to France to evaluate turf and ornamental market developments worldwide.

"We think there are opportunities for U.S. manufacturers in selective areas," Liles said. "Right now we're looking at Japan, the Pacific Rim area, France, England, Spain. We need to learn what their expectations are for turf, what parts of our product line and services meet their needs. They do things differently in each country. We try to evaluate how we fit into that."

Early observations show the EC market appears receptive to American chemical and equipment manufacturers, but that commercial landscaping outside of the United Kingdom is almost non-existent, said Owen Towne, Ciba-Geigy's product manager assigned to study the European market.

"The potential for lawn care

and landscaping here is very low. But the potential for tools and equipment is here," he said. "My impression is that it would be very difficult for a lawn care company to come over here and find clients."

The United Kingdom offers some opportunity, he added. Commercial landscapers there contract for residential, commercial, industrial, sport club and government work.

For most of western Europe, however, lawn care plays second fiddle to floral gardening. "Cities really do a fantastic job with planting flowers, ornamentals and shrubs. If they have an area of expertise, it's maintenance of ornamentals and flowers, particularly annual flowers," Towne said. "For whatever reason, Europeans just appreciate flora culture more than Americans. Municipalities invest in new beds every three or four months."

Residents too enjoy planting and tending their own gardens. "People here, unless they are incredibly wealthy, don't really have lawns. Maybe a patch. People tend to plant rhododendrons, conifers, annual and perennial flowers, which they tend to maintain them-

selves. The larger-property owners hire gardeners. That's true almost everywhere.

"It really strikes you how much more they do here than in the U.S. to expose people to a pleasant environment. They don't have a lot of green space, so they do the most with what they have."

Limited lawn space makes private lawn maintenance companies unnecessary for residences, said Bryan Lucas of Bryan Lucas Landscapes in Coventry, England. As far as government work, "a lot of municipalities have a work force dedicated to maintaining landscape planting, flower beds, that sort of thing," Towne said. "But there really are no commercial companies involved."

MARKET POTENTIAL. A number of companies view the European landscape market as an untapped resource. Others say they just haven't heard enough about the potential there to find it inviting.

"I'm not opposed to doing business here. I've just always had the perception that there wasn't much opportunity there, or that the opportunities were being filled on a local basis," said Ron Smythe of Grassroots Landscaping & Irriga-



Lawn care in the EC plays a lesser role than floral gardening. This garden is located in Fano, Italy. Photo by Larry Heimann.

tion in Alberta, Canada. Smythe is considering landscape opportunities in Kuwait.

Towne concedes potential exists in the EC landscape market, but believes a company entering the market needs to be extremely energetic and committed.

"Some days are very frustrating, seeing all the potential. There are so many barriers to overcome," he said. "If you're going to become involved over here you have to commit for the long term. You can't just come in and six months later be successful. It's going to be a several-years project."

"Bureaucracy and regulations"

hinder foreign service operators, he said. "The U.S. is fairly streamlined compared to what goes on over here. People themselves are not opposed to Americans coming over and trying to create businesses. But some governments see it as a threat."

Golf courses by far hold the greatest turf maintenance potential, but there are only about 4,000 courses in all of Europe, according to Towne. "Therefore you have to look at Europe as a collective market."

Some industry observers say the region's economic slowdown has deterred growth in the golf indus-

(continued on page 44)

THE UK: A COMPETITIVE LANDSCAPING ARENA

CONTRACTORS IN THE United Kingdom share more extensive landscaping opportunities than in most of the European Community. The number of contractors there equals about a six-page listing in the Yellow Pages, said Bryan Lucas of Bryan Lucas Landscapes in Coventry, England.

Most companies consist of one- to three-men operations. There are only a few "quite big ones," usually garden centers that offer landscaping on the side. The landscaping market resembles that of the United States in that it's easy to enter. In England, no certification or licensing is required. People tend to pick up a job, finish it and move on to construction or something else, Lucas said.

The demand for landscape contracting in the UK, particularly in residential, is high. People, not just the wealthy, "want their gardens to look good. When the gardens are too big to do themselves, residents will call in a landscaper to cut their grass or redesign a patio or whatever," said Lucas.

Gardens tend to be smaller than in the United States. They mix lawns, borders, patios and gardens, and are enclosed by wood fences, perhaps 4 to 6 feet high.

"One thing I've noticed here (in the States) is the complete lack of privacy in the gardens. One garden joins another. There doesn't seem to be an official boundary between them," Lucas said. "In the UK,

virtually every garden is surrounded by a fence, hedge or whatever."

The call for gardening services equals the need for lawn care, Lucas said. "In general, gardens in England are a lot smaller than in America. You're probably talking about an average garden being 30 to 40 feet long by about 20 feet wide, with 50 percent of that being grass. So you're talking about a lawn that is 20 feet by 10 feet."

Bryan Lucas Landscapes' services include design/build, mowing and maintenance. The company has mostly residential clients but also covers six commercial customers. This year Lucas picked up some work on repossessed properties. "It's land that nobody wants. We clean them up so they can be sold," he said.

Sports clubs hire landscape contractors, but the market is virtually closed. "There are only three or four companies considered big enough to do sports fields and they pretty well have got it covered," said Lucas.

Governments accept bids for mowing roadsides, parks and other public areas. "The job includes about five or six cuts a year, from March to September," he said.

Foreign companies trying to enter that market "have to be invited and need to have a contact to put their company forward as a tender," Lucas said. "Companies also need to be competitive, have their own machinery to undercut other companies. It's a cutthroat business."

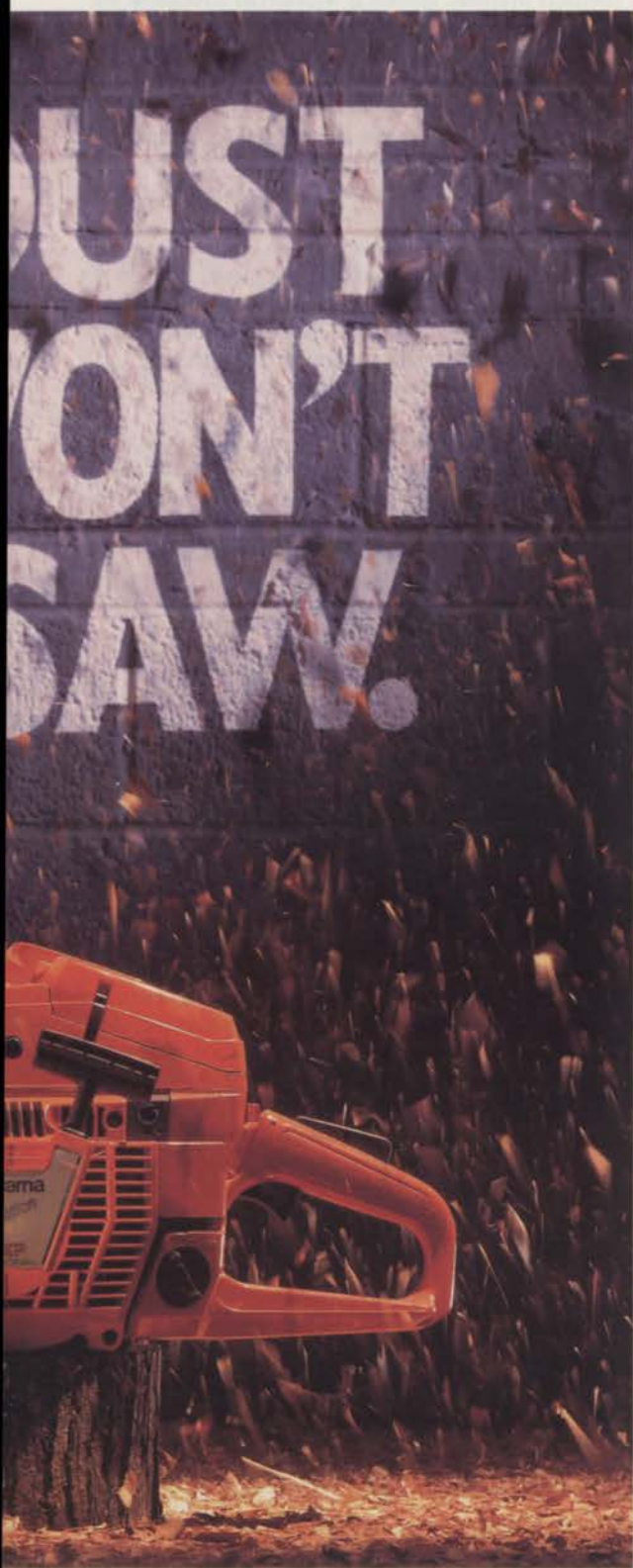
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USE READER SERVICE #24

try. The market exploded in the 1980s but developers lacked sufficient financial and long-term planning, causing many courses to fail. The growing standard of living may continue fueling the golf market, however.

The consolidation of the European market should remove some bureaucratic barriers to landscaping opportunities, but economists warn that some product standards, testing and certification requirements will remain intact. Towne predicts language will remain a barrier as well.

The EC nations plan to implement a unified biocide registration directive for non-crop products.

"We are trying as an industry to ensure that regulations are similar and that there are no more onerous requirements in the biocide directive than the crop directive," said Colin Dash of environmental and government affairs for DowElanco, based in England. "Right now we have to register products according to local rules. We must do certain biological and efficacy tests. We ensure that is done and then provide a sort of backup service once the product is going onto the market."

Government officials expect to effect the crop directive by July 1993, and a biocide directive for non-crops in 1994, Dash said.

EDUCATION NEEDED. Lack of education creates an additional setback in the turf and ornamental market. "It's safe to say there's a greater need for education on the role of plant production materials, how to manage turf, than there is in the United States," Towne said. "Management in Europe is not as sophisticated as in the U.S."

Ornamental expertise ranges from country to country, with Holland and the Netherlands being the world leaders in ornamental production, particularly in greenhouses.

"I think anyone that comes over here is going to have to be committed to a real educational effort because the end users just don't have the expertise," Towne said. "It reminds me of where Ciba-Geigy was in the U.S. 10 years ago. We weren't as actively involved in turf and ornamentals as we are today, for the same rea-

PURSuing LANDSCAPE OPPORTUNITIES IN KUWAIT

AS POLITICAL AND economic changes in Europe and Asia invite foreign investment, more American companies are considering bidding for landscape contracts overseas. Interest is widespread throughout the Pacific Rim, the Middle East, Australia and Japan. Each market holds its own set of barriers.

A few companies looking to take advantage of the half-billion dollar destruction to Kuwait's landscape after the Persian Gulf War have returned to the United States disappointed and empty-handed.

Ruppert Landscape Co., Ashton, Md., considered a proposal from a Kuwaiti company looking to form a landscaping consortium, said Ken Hochkeppel, branch manager. Kuwaiti law requires foreign companies to form a partnership with a Kuwaiti company that retains at least 51-percent control.

"I asked myself what we were doing venturing into the Middle East when we should be concentrating on national work," he said. "But the opportunity seemed great."

Ruppert joined four other companies -- two Kuwaiti, one Saudi and another from the U.S. -- in submitting a proposal to restore landscaping, repair irrigation structures and clean oil from plants. Ruppert had planned on the Kuwaiti partners pulling strings to obtain a large chunk of government work.

"That was the original plan of why we went over there. It basically dissipated. We looked at other options but none panned out," Hochkeppel said. He cited several obstacles to pursuing a landscaping contract in Kuwait, including the lack of plant material. "A lot of it is custom growing plant material which takes two to three years," he said.

Prices are very competitive, he added. "It's a whole different ball game where your labor costs fall and where plant costs fall. Plants generally are more expensive because they are coming from far away. Labor costs are very low -- 50 cents an hour. But then you have to pay for Visas, room, board, etc."

Risk is also a deciding factor. "The important thing is, as with any business, you want to have the right partners. As we would here in the States, we want to spend some time and know what their business philosophies are, what their goals are and how aggressive they're going to be in the marketplace and how they're going to manage the money and people," Hochkeppel said. "Instead, the general message was 'sign here and we'll talk about the details later.' That concerned me."

He contends that the potential for profit in Kuwait is limited. "It doesn't appear there's an excess of profits to be had. There's a lot of hard work that has to be done," he said.

Ron Smythe of Grassroots Landscaping & Irrigation in Alberta, Canada, cited similar difficulties. Smythe traveled to Kuwait in March to determine the feasibility of doing business there.

"There is potential. I know of at least two other North American contractors considering doing business there," he said. "It just depends on your personal tolerance of risk."

He said he was initially surprised at the elaborate tendering system. "They want to see that your past performance matches the type of work you bid on. The standards are tough at the bidding stage."

Smythe decided to "wait and see" how other companies fare doing business in Kuwait before taking the plunge. "It seems other companies are better suited to be guinea pigs than us in this situation," he said.

sons. There is potential here. The question is how do you capitalize on that potential."

Outside of Holland and the Netherlands, there isn't a sufficient level of training, Towne said. "A lot of trade magazines published in the U.S. make their way here, though, so people are getting informed. When I go to an ornamental grower like I did in Spain, they already know about Ciba-Geigy and our products. Their question is 'How do I get hold of your other products?'"

MANUFACTURERS' PRODUCTS.

Worldwide pesticide and chemical producers seem to be the manufacturers most interested in delving into the European turf and ornamental field. DowElanco recently targeted the United Kingdom, France, Italy, Spain, Germany, Scandinavia, Holland, Belgium and Luxembourg with three products: a herbicide called garlon

that "has been around for awhile and continues to build business steadily," said Dash; a herbicide called starane and an insecticide called Empire, both of which "are fairly new to the market but are doing well."

"There was skepticism at the start about whether the market existed here like in the U.S.," Dash said. "We still work through a dealer or national distributor."

The United Kingdom and France are most receptive to outside businesses, he added. Dash marked forestry, power line maintenance companies and pest control operators as typical end users. "Municipalities could be customers as well. But they have departments to look after things in a physical sense," he said.

Elanco's merging with Dow strengthened the company's presence in the non-crop, specialty market. "Special groups seem to be a growing business," Dash said.

Ciba-Geigy plans to determine what products to market after completing its evaluation of opportunities. "We foresee our products being used by municipalities in their maintenance of landscaped areas, by golf course superintendents and by some ornamental growers," Towne said.

"It strikes me that turf and ornamentals are really an international type business. The knowledge transfer is fantastic," he said. "But we still have some local challenges, regardless. People over here traditionally accept lower levels of plant quality in terms of landscaping and turf. Not because they want to; they just don't realize they don't have to. We have to show it's possible to have healthy turf, and that it's less costly to maintain healthy turf." ■

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

Record Crowd Attends 3rd Annual Green Industry Expo

Returning to the heart of the lawn and landscape industry, attendees turned out in record numbers for both educational conferences and a dynamic trade show.

By Cindy Code



GIE Executive Board members Daryle Johnson, Earl Wilson and Ron Kujawa cut the ribbon to the Green Industry Expo, above. Auctioneer Harry Collins solicits bids for an autographed Bobby Knight basketball, right.



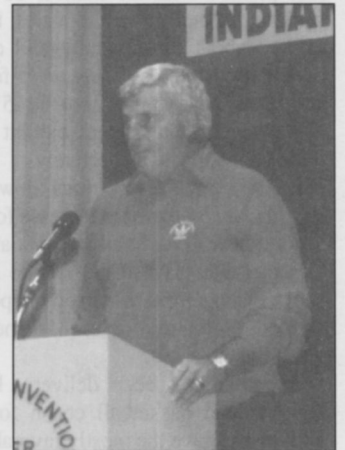
SOLIDIFYING ITS ROLE as the premiere national trade show for the lawn and landscape industry, the Green Industry Expo welcomed a record number of attendees to its third annual exhibition in Indianapolis.

Despite a slow economy, nearly 2,300 lawn and landscape professionals flocked to Indianapolis in November to be a part of a trade show featuring mowers, specialty pesticides, fertilizers, aerators, irrigation equipment and much more. The favorable attendance was said to be a result of a return to the Midwest — the heart of the lawn and landscape industry — and the relatively low cost of attending the show.

Record numbers also attended standing-room-only educational sessions and the keynote speech presented by Mr. Indiana himself, Bobby Knight.

Already beginning preparations for this year's show in Baltimore, Nov. 15-18, the Expo is a joint effort among the Associated Landscape Contractors of America, the Professional Lawn Care Association of

Jud Griggs, Stephen Hillenmeyer and Wayne Richards take part in a team building exercise during ALCA's Landscape & Grounds Maintenance Conference.



Indiana University Head Basketball coach Bobby Knight was the keynote speaker for the 3rd Annual Green Industry Expo. This year, all three sponsoring associations — ALCA, PLCAA and PGMS — joined together in one keynote address.

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comments reflected those of the emergence of the GIE show. "Winning is a matter of making adjustments," he said. "Even though you're competing against one another...the great ones can come together."

That's just what ALCA, PLCAA and PGMS did in the late 1980s to create and nurture the Green Industry Expo. Formerly two separate trade shows and conferences, the trio has captured the essence of the ever-diversifying green industry, a nuance not lost on those attending the dynamic show.

On creating a winning team Knight said: "It's better to study how to lose. If you identify why you got beat and eliminate those things, you only have one option left."

EDUCATION. Whether it was the current economic conditions, competitive pressures, a desire to diversify or growing pains, attendees swarmed to a variety of educational seminars sponsored by each of the three associations.

Although the conferences were sponsored separately by ALCA, PLCAA and PGMS, attendees were able to come and go freely between the sessions, reflecting the common interests among the memberships of the three associations.

The three conference tracks offered pertinent sessions relating to business growth, technical requirements, risk communications and legislative happenings. A number of

America and the Professional Grounds Management Society.

From the early morning peer sessions, to the trade show's sneak preview of the latest in industry innovations, to the challenging educational sessions, this burgeoning show had something for everybody.

Not only were the 255 exhibiting companies pleased with the number of attendees walking up and down the aisles, they were excited about the diversity and quality of potential customers. There were few empty booths and aisles throughout the 15 hours and 49,400 net square feet of exhibit time and trade show space, respectively.

Exhibit space reservations, down slightly in 1992, are predicted to increase for the Baltimore show where exhibit space can increase to more than 51,000 net square feet. GIE show management is already reporting increased reservations (over the same time last year) for the show.

The keynote speech, delivered by Bobby Knight head basketball coach for Indiana University, gave the mostly favorable crowd an insight into his controversial career both on and off the basketball court.

The keynote session was sponsored jointly by the three associations, a first for the Green Industry Expo. In the show's first two years, ALCA and PGMS sponsored one keynoter, while PLCAA held its own.

Fostering a winning ways theme, Knight's

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ment Institute, is launching its certified landscape professional exam to provide appropriate recognition to deserving people working in the landscape contracting arena.

ALCA's certification board of governors, who oversaw the development of the exam, said their objectives were to raise professional standards in the industry; encourage self-assessment by offering achievement guidelines; help identify those with acceptable professional principles and practices; and to improve performance within the industry by encouraging participation in professional development programs.

Four levels of certification will ultimately be available for all worker levels including the technician; the team leader/foreman/supervisor; landscape professional and a quality landscape operation, a combination of the three previous exams. Certification, if achieved, is valid for the individual passing the exam, not the entire company.

Content areas for the certified landscape professional exam include: business planning, accounting and management, 30 percent; health safety and human resources, 15 percent; production/operations and horticulture, 15 percent; risk, law and contracts, 20 percent; and sales, marketing, communications, and public relations, 20 percent.

Gary Thornton, chairman of ALCA's certification board of governors, said the ultimate goal of the exam is to "mean something

industry firms brought several members to the show to cover all of the educational opportunities.

(Audio cassettes of most educational sessions are available from the sponsoring associations.)

Learning also took place in the non-traditional sense through peer interaction roundtables. Leaving their competitive attitudes behind, lawn and landscape professionals have shown an increased desire each year in attending such sessions as the Breakfast with Champions, Winner's Circle and Head Start roundtables, offered each morning. New this year was the Ask the Experts panel held one evening after a full day of educational sessions and trade show hours. The room was jam-packed.

All of the roundtables were a success — most sessions ran over their allotted times — with lawn and landscape contractors genuinely interested in talking with peers and discussing and resolving issues.

"These sessions are great, especially for first-timers," said one of the show's attendees. "It's a great way to meet people and gain allies in the industry."

CERTIFICATION. Not only is education needed on an ongoing basis, so too is there a need for industry certification. The Associated Landscape Contractors of America, in conjunction with the Professional Develop-

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in the marketplace.”

A pilot exam (limited to 50 people) will be given on Feb. 4 in Tucson following ALCA's an-

nual Executive Forum. The exams are open to both members and non-members of ALCA.

For more information about the

certification program contact: ALCA, 12200 Sunrise Valley Drive, Suite 150, Reston, VA 22091; 703-620-6363.

SILENT AUCTION. A three-year favorite of the PLCAA is the Silent Auction. Professional Auc-

(continued on page 50)

THE POWER OF THE CONSTITUENCY

THE PROFESSIONAL Lawn Care Association of America's "Power of the Constituency" seminar at the Green Industry Expo packed a lot of punch into a few short hours.

One of the most vividly discussed seminars at the GIE show, the event featured a mock hearing for a proposed ordinance on posting, contracts and notification for pesticide applications. The hearing delivered a powerful message to the packed room of lawn applicators: Always be prepared.

"There's extreme pressure by environmental activists to effect pesticide use on lawns at the local and state level," said Tom Delaney, director of government affairs for PLCAA and "chairman" of the mock city council.

The number of ordinances and state laws being proposed is increasing, he added. Lawn care industry representatives need to be prepared, organized and consistent when responding during the hearing process on ordinances, state laws or regulations.

"Do your homework before going before the council," he said. "Find out why (the proposal) became an issue, what constituent is pushing for it and how the council members feel about it. Decide what kinds of handouts you want to have there, what companies are affected by it and who plays the main role in planning it.

"You have power being a constituent, but you don't know it unless you use it. If you don't flex your muscles and find out what power you have, it goes to waste. Don't sit out there and think things are done to you and you don't play a role in it."

The mock hearing opened with "Councilwoman" Forrester Potter of TruGreen proposing an ordinance "to reduce the incredible misuse of pesticides."

The alleged ordinance would have required written contracts including the applicators' name, address and telephone number, a diagram of the property to be treated, a list of all water sources on the property, proposed dates of application, pesticides to be used, an update of any products used not originally written in the contract and warnings of safety, health and environmental hazards.

The measure also would require applicators to post a sign 24 hours prior and for 72 hours after application. The 8-1/2- by 11-inch, pink sign must list in black lettering when the application was scheduled, the pesticides to be applied, warnings and the applicators' name and phone number. Additionally, the ordinance would establish a city registry for notification.

Tom Diederich from Orkin, Potter from TruGreen, Indiana Sen. Beverly Gard and PLCAA's Delaney made up the four-member city council panel. Nine lawn care operators from various states who had experience with hearings presented testimony.

Seminar attendees witnessed realistic portrayals of how a city council panel could browbeat those presenting testimony, by ignoring certain facts and concentrating only on their immediate concerns cultivated by media hype.

"What price would you put on our health compared to having a few weeds in our lawn?" Diederich asked John Buechner of Lawn Doctor, New Jersey. "We think these compounds are dangerous to our health, and if their only purpose is to kill a few weeds in the lawn, what price do you pay to kill a few weeds compared to the health of our citizens?"

Diederich continued to hackle those providing testimony, often exaggerating significance of newspaper stories that failed to present all the facts. He and other council members demonstrated how easy it is for city council members to distract those presenting testimony.

Terry Kurth, representing Lawn Care of Wisconsin, quoted a doc-

tor who said no evidence exists proving that turf applications of pesticides poison people coming into contact with it. Delaney cut into Kurth's testimony to ask if his company posts signs. Soon after, Diederich interrupted.

"I'm concerned about the registration of products you use. What is the current status of -- 2,4-D I think the compound is?" he asked benignly.

"I believe you're referring to 2,4-D," answered Kurth. "It is currently registered."

"Isn't it under some kind of scrutiny or re-registration?"

"Periodically they can come up for re-review. And it, along with some other products, are in the process..."

"So a lot of your products aren't registered?"

"I don't think that's the case..."

"Well, if they have to be re-registered and they're not, how can they be registered? Do you believe the government's role is to take care of those who can't take care of themselves?...That's what we're trying to do here."

Andy Hines of Shrub & Turf in Florida, presented the opposition's view lightheartedly.

"My name is Andy Hines and I represent the Coalition of Concerned Citizens Against Everything Wrong in Society," he began his introduction.

The whole lawn care industry is unnecessary, he said. It's just so "rich people can have green yards with no weeds. We don't need that." He added that concerns about the environment are underwritten by chemical companies that want to sell their products.

"If you pass this law, you will be a step ahead of everyone of us," he told the council members. "If you don't pass it, and you have to suffer through environmentally irresponsible applications that endanger the environment, we at the Coalition will take out an ad in the Daily Liberal and tell everyone you voted to poison our children and our old people and we don't appreciate it."

Sen. Gard responded, "When you get up in the morning and the sun comes out, do you think you ought to turn on the radio and hear an announcement that says 'Beware the sun's out today and it's hazardous to your health, so you better take protection from the sun?'"

"We're working on that," breezed Hines.

In the seminar's wrap-up, seminar attendees shared their own experiences presenting testimony.

"You need to have a lobbyist," said a representative of the North Carolina Turf Association. "They won't listen to you unless you have one. We had to hire a lobbyist and it's costing us about \$20,000 a year. It doesn't work how I thought it worked."

"There are two kinds of lobbyists," explained Delaney. "One who tracks for you what's going on. The other, which you pay more money for, that actually lobbies for you."

Another alternative is establishing a good relationship with a state senator "who can do the tracking for you, if you have a limited budget."

Sen. Gard concurred. "The best time to catch us is at home, when we're not in session," she said.

Others in the industry noted the controversy stirred at hearings by environmental groups bringing children in wheel chairs, 2,4-D cans and other dramatic visual aids.

"What we found out was that truth had no bearing on the matter," said one attendee. "They brought up a 10-year-old label, a six-foot, laminated label of herbicide made 10 years ago and said that was what we were using. It doesn't have to be true. They get up there and say it, and the media picks up on it." — *Cathy Hoehn*

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(Afternoon Workshop)
Feb. 5, Provo, UT
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(Evening Seminar)
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Green Industry Expo

(continued from page 48)

ioneer Harry Collins was back to auction off the booty from 44 participating companies. Collins, is also a lawn care operator with Total Lawn Care in Tupelo, Miss.

More than 300 people attended the auction raising more than \$17,000 to support PLCAA's issues management and public relations funds.

Auctioned items included a range of things from cases of fertilizer and pesticides to autographed Pete Rose baseballs and autographed Bobby Knight basketballs to greeting cards and blowers.

OUTDOOR DEMO. Another activity for conference and show attendees included the popular outdoor equipment demonstration.

Held on an unusually cold Indianapolis morning following the trade show, attendees had the opportunity to get hands on experience with equipment and gain field knowledge of various products.

Exhibitors indicate that the outdoor demo often helps make the final sale, particularly for equipment. "They can read all about the product in literature, but testing it is another story."

The author is Editor/Co-Publisher of Lawn & Landscape Maintenance magazine.

PLCAA UNVEILS NEW LOGO

THE PROFESSIONAL Lawn Care Association of America unveiled a new logo during its annual conference in Indianapolis.

The logo is composed of three rows of three slightly "S" shaped blades of grass in shades of green and lavender. The abstract design can be seen as grass plants waving in the wind, or as a stylized "E" for the environment. The logo coordinates with a new theme: Make your greens come true.



The logo was developed as a public relations committee project and funded by member company Sandoz.

"After 13 years we felt it was time to update our association's logo to better symbolize our harmony with environmental concerns," said Ann McClure, PLCAA executive vice president.

PLCAA will phase in the new logo and slogan over the next year. Early appearances will be in television public service announcements promoting mowing safety and the recycling of yard waste.



The Liquid Pulse injector from Rogers Innovative was exhibited at the Outdoor Demo. It aerates and shoots chemicals and fertilizers, among others, into the rootzone.

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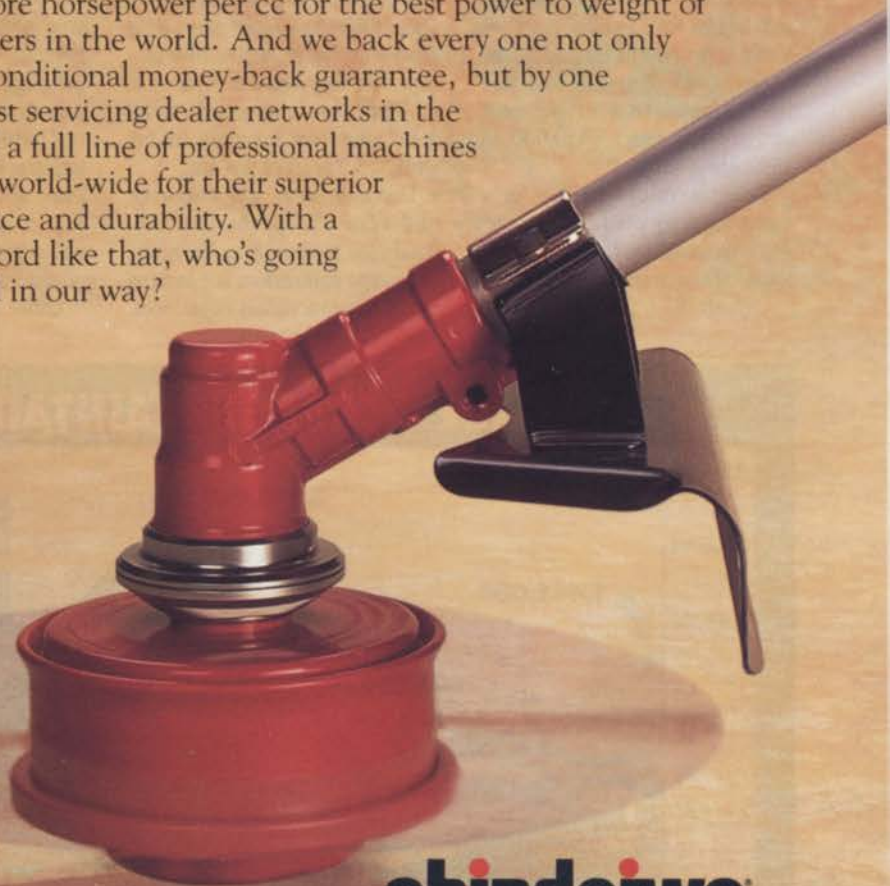
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USE READER SERVICE #66

Survey: Contractors Optimistic About Business Future

Our 1993 market trends survey revealed a lot of statistics about the professional lawn and landscape industry. Perhaps most important is the enthusiasm with which our readers look to the future.

By Cindy Code

THE AVERAGE LAWN and landscape professional has been in business for 11 years, employs about seven people (including the owner), adds between four and five seasonal workers per year and reports about \$450,000 in 1992 gross sales.

Those were the findings of a recent industry market trend survey conducted by *Lawn & Landscape Maintenance* magazine.

Overall, 83.6 percent of those

responding to our market trends survey said they are optimistic about their businesses' short-term economic future, while 16.4 percent said they are not. Likewise, 89.7 percent are optimistic about their long-term business future, while 10.3 percent are not.

Diversification, the buzzword of the late 80s and the early 90s, continues to mount as lawn and landscape contractors are earning income from a variety of services.

Based on overall dollar volume, those responding to the survey reported earning about 29 percent of their revenue from mowing, 14.4 percent from landscape installation, 8.2 percent from turf fertilization, 7.3 percent from landscape design, 6.3 percent from pruning and trimming, 5.5 percent from irrigation installation and 4 percent from pesticide applications to turf.

Other sources of revenue, in

about equal amounts, stem from irrigation maintenance, sodding, seeding, aeration, fall cleanup, snow removal, turf renovation and pesticide applications to trees and ornamentals.

Reported revenues covered a wide spectrum from small and specialty firms to large and multi-branch firms.

The majority of respondents, 25.9 percent, estimated 1992 gross sales to reach between \$100,000 and \$249,000; 19 percent between \$250,000 to \$499,999; 18.4 percent between \$50,000 and \$99,999; 17.7 percent less than \$50,000; 9.5 percent between \$1 million and \$2.49 million; and 7.5 percent between \$500,000 and \$999,999.

Two percent of the survey respondents are expecting 1992 gross sales to reach more than \$5 million.

Single-family homes and commercial/industrial properties are the mainstay of the professional contractor with 49.7 percent of revenues coming from single-family accounts and 31.7 percent stemming from commercial/industrial accounts. About 9.9 percent is the result of work on multi-family accounts and 8.7 percent stems from government/institutional.

The average landscape contractor maintains single-family properties totaling 32.5 acres, multi-family properties totaling 11.7 acres, industrial/commercial properties totaling 47 acres and government/institutional properties totaling 7.6 acres.

Projected across the entire readership of *LLM*, landscape contractors maintain nearly 4.3 million acres per year.

As for future plans, those responding to the survey reported growth plans in a number of areas including chemical pesticide applications, irrigation installation and maintenance and tree and shrub care.

Of those currently offering irrigation installation services, 54.1 percent said they expected sales revenues to increase in 1993

(continued on page 56)

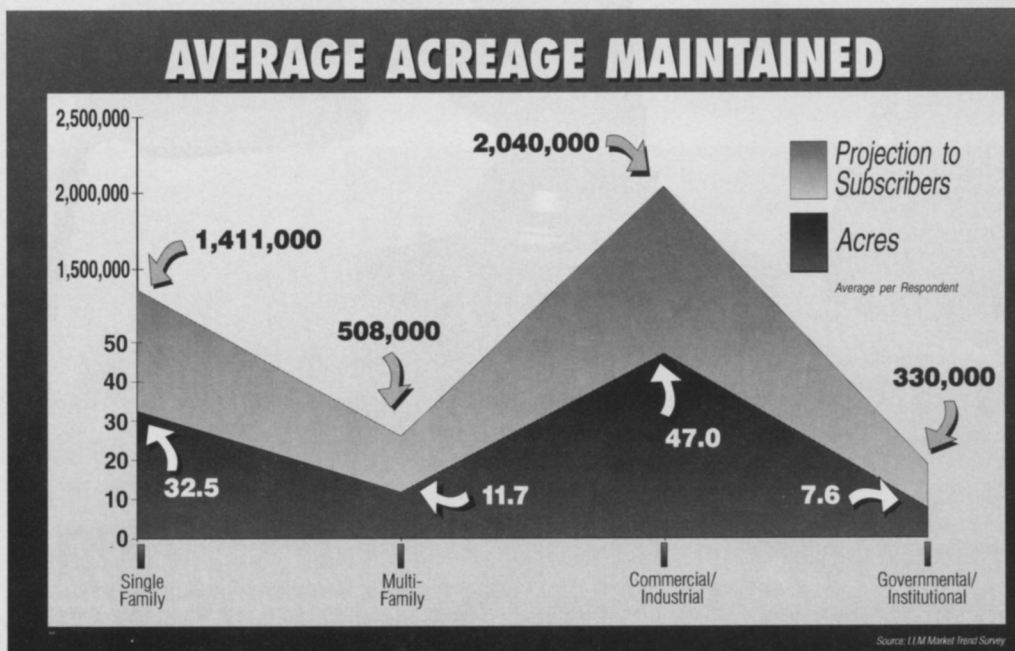


Figure 1

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Market Trends

(continued from page 52)

and 67.7 percent said it will continue to increase through 1997.

Likewise, with irrigation maintenance. Nearly 56 percent said they expected sales revenues to increase in 1993 and 65.5 percent said maintenance revenues would continue to increase through 1997.

When in use, mulching mowers are popular. While 77.1 percent of the respondents said they do not use mulching mowers, those that do — 22.9 percent — said they use them on 68.5 percent of their accounts.

Computer software programs are big when handling accounting and payroll functions and are becoming more popular for estimating, bidding, routing and design. A little more than 30 percent of respondents, however, said they do not use computers.

Overall, 45.5 percent of the respondents said they have seen demand for customer services increase, 23.9 percent said demand has decreased because customers have less money to spend on their landscape, while 30.6 percent said demand has remained the same.

About 43.4 percent of lawn and

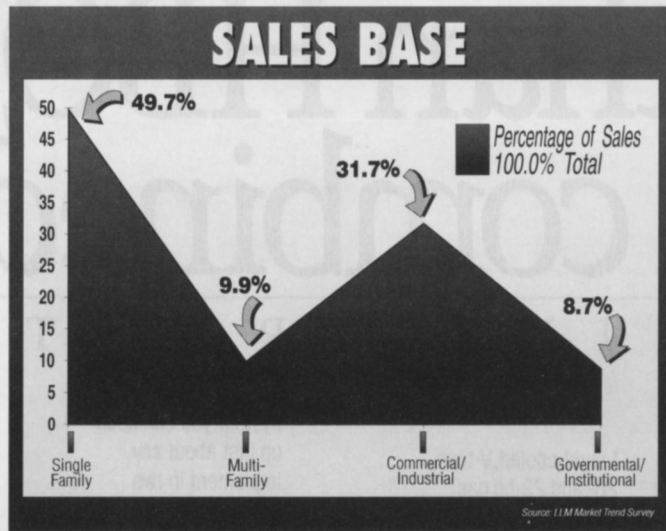


Figure 2

landscape professionals responding to the market trends survey said they did not belong to a trade association, but of those who do, a lot of overlap exists between membership in local, state and national associations.

In our related 1993 buying intentions study, statistics, projected across the entire readership of LLM, show lawn and landscape maintenance contractors plan to spend more than \$2.5 billion on product purchases in 1993.

And purchases are only part of the formula. Revenues from the lawn care industry today amount to more than \$2 billion serving an industry of more than 10 million customers. The lawn and landscape contracting industry represents about a \$17 billion industry and is comprised of more than 40,000 contractors.

Largely responsible for this continued growth is the advent of diversification. As the diversification trend continues to spread,

so does the strength and perceived credibility of the lawn and landscape market force.

Because the buying habits of the traditional customer changed, so too must the lawn and landscape maintenance contractor. Customers are generally no longer interested in contracting with one lawn care firm for pesticide and fertilizer applications, with another firm for mowing/maintenance services and yet another for tree and shrub care. They are interested in a full-service lawn and landscape firm.

Large lawn care and landscape firms will continue to thrive in the 1990s as will small, specialty firms, but the mid-sized firms will face the greatest challenge of dealing with federal regulations, decisions to expand or remain the same size and customer education.

The market is far from saturated. Millions of acres in both residential and commercial property are not yet treated and/or maintained. As the market continues to expand, so too will sales and purchases.

The author is Editor/Co-Publisher of *Lawn & Landscape Maintenance* magazine.

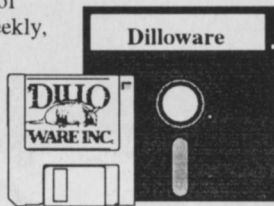
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TURFGRASS ECOLOGY AND MANAGEMENT

CHAPTER 1: Climate, Weather and Turfgrass

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CHAPTER 4: Water, As a Resource

CHAPTER 5: Physiological Responses to Temperature

CHAPTER 6: Soil – The Anchor in Ecology

CHAPTER 7: Population Dynamics

CHAPTER 8: Intraspecific Competition

CHAPTER 9: Interspecific Competition

CHAPTER 10: Disturbances . . . Predators

The Making of Turf Cultivars

A general understanding of the basic steps in turf breeding programs will help distinguish the advantages and disadvantages of today's cultivars.

By Patricia Sweeney and Karl Danneberger

THE TERM CULTIVAR can take on slightly different meanings depending on the turfgrass species.

In general, the term refers to a reproducible collection of cultivars sharing a number of important agronomic characteristics such as drought resistance, shade toler-

ance or attractive appearance. The genetic similarity of the members of a cultivar, however, may range from one in which every individual is genetically identical to a population, or synthetic variety where no two plants are genetically the same.

Cultivars need to be tested under various conditions to determine their performance. Here, a number of turfgrass species and cultivars are being tested for shade tolerance.



The mode of reproduction and preferred method of propagation for a species determines whether a genetically identical cultivar or a synthetic variety is commercially available.

Reproduction in grasses may be classified as sexual or asexual. Sexual reproduction refers to the production of progeny via the union of male and female gametes. Unless the male and female are homozygous, various combinations of genes will occur in the progeny as a result of the cross. Species that reproduce sexually may further be subdivided into those that are predominantly cross pollinators and those that naturally self pollinate.

In asexual reproduction, no new gene combinations occur and all offspring are identical to the parent plant. Asexual reproduction can occur through vegetative propagation (sprigs, stolons, rhizomes or runners) or via apomixis. Apomixis is the production of seed without the union of the male and female gamete. The seed produced by apomixis is genetically identical to the female parent.

Each type of reproduction (sexual vs. asexual, cross vs. self pollination, apomictic vs. vegetative propagation) lends itself to a different plant breeding strategy, and

ultimately to either a cultivar of identical individuals or a population of visually similar individuals that are genetically unique.

A general understanding of the basic steps in a turfgrass breeding program including creating variability, selecting superior genotypes and increasing the selected genotypes will assist in understanding the reasons for the differences between the two types of cultivars, and the advantages and disadvantages of each.

CREATING VARIABILITY. Turfgrass breeders use a number of methods to create variability.

Historically, variability existed in natural populations of turfgrass allowing breeders to select superior genotypes such as Baron and Merion Kentucky bluegrass cultivars from old established turfs. Although the collection of superior naturally occurring genotypes is still an important aspect of production, traditional breeding programs usually consist of making crosses within a species.

Planned crosses between selected genotypes, current cultivars and improved populations are used to create variability.

Variation may also be created by making interspecific crosses. These crosses between related species are more difficult to make and often result in sterile progeny. Several bermudagrass cultivars including Tifway, Tiffine and Tifgreen, are the selected progeny of a cross between *Cynodon dactylon* and *C. transvaalensis*, two different species of bermudagrass. Since these cultivars are propagated vegetatively, sterility is not a problem. In fact, a lack of seed heads or production of non-viable seeds by the sterile plants is an advantage.

Mutations sometimes result in improved characteristics. Au Centennial is a vegetatively propagated centipedegrass cultivar that originated as a single mutated plant. It is likely that Tifdwarf bermudagrass occurred as a natural mutation in Tifgreen.

(continued on page 60)



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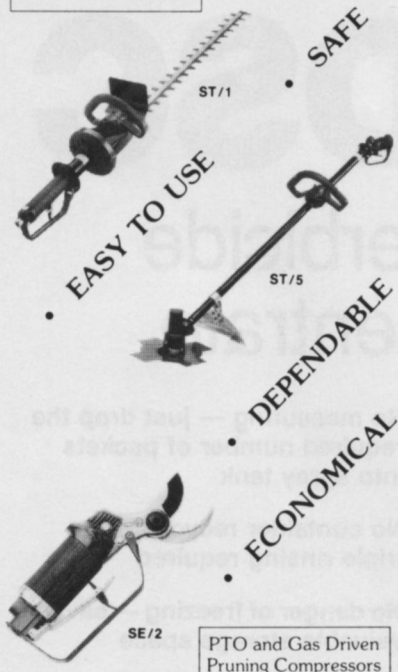
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USE READER SERVICE #45

Turf Cultivars

(continued from page 58)

Currently, new molecular genetic techniques have the potential to increase variability by incorporating genetic material from unrelated species into turfgrasses. Recombinant DNA, as the transferred genes are referred to, may be used to add herbicide, disease or insect resistance to a species.

For example, the Bt gene, originally isolated from the bacteria *Bacillus thuringiensis*, could be inserted into a turf species and confer resistance to a number of insect pests.

The second step in most breeding programs is the selection of superior genotypes. Some selection may occur naturally in old turf populations where certain genotypes thrive under specific conditions. More often, plant breeders select superior individuals from a population that resulted from a planned cross of parents with superior traits.

The initial selections are tested in a number of environments prior to the release of a cultivar. Progeny testing is necessary if the genotype of the selected plant cannot be reproduced exactly, and is not ultimately the product sold.

SELECTED GENOTYPES. Finally, the selected genotype must be increased for sale to the consumer. The entity that can be reproduced and increased as well as easily propagated is important in determining which cultivars are produced and sold.

Since asexual reproduction produces progeny that are genetically identical to the parent, any single-selected plant can be increased for

sale via vegetative propagation or production of apomictic seed. Thus, turf cultivars that are propagated vegetatively or via apomictic seed usually consist of a single genotype.

On the other hand, the production of seed from a sexual cross results in a number of different genotypes among the progeny unless both the male and female parents are homozygous. In species that are predominantly self-pollinating, homozygosity is relatively easy to achieve and maintain. Many turfgrass species are cross pollinators, however, and their achieving homozygosity is impractical and uneconomical.

Since a single superior heterozygous genotype cannot be reproduced exactly via sexual reproduction, several superior genotypes are selected and intermated to form a synthetic variety. A synthetic variety consists of a number of unique individuals that share many characteristics of the selected parents. Although any individual in the population cannot be reproduced exactly by sexual seed production, the population itself, with its unique proportion of genes, is reproducible by intermating the original parents or vegetative clones of the parents.

Most turfgrass species have some form of both sexual and asexual reproduction and theoretically could be sold as genetically uniform vegetatively propagated cultivars or as seed propagated synthetic varieties.

Each method of propagation has its own strengths and weaknesses. The ease and cost of establishing a uniform turf as well as the inherent characteristics of a species are considered

(continued on page 62)

CULTIVARS

Common Name	Genus Species	Propagation Methods of Improved Cultivars		Interspecific Hybrid
		Seed		
		Synthetic	Apomictic	
Bermudagrass	<i>Cynodon dactylon</i>	X		
	<i>C. dactylon</i> X <i>C. transvaalensis</i>			X
St. Augustinegrass	<i>Stenotaphrum secundatum</i>			X
Centipedegrass	<i>Eromochloa ophiuriodes</i>			X
Japanese Lawngress	<i>Zoysia japonica</i>	X		X
	<i>Z. japonica</i> X <i>Z. tenuifolia</i>			X
Mannilagrass	<i>Z. Matrella</i>		X	X
Kentucky Bluegrass	<i>Poa pratensis</i>			
Perennial Ryegrass	<i>Lolium perenne</i>	X		
Annual Ryegrass	<i>L. multifolium</i>	X		
Tall Fescue	<i>Festuca arundinacea</i>	X		
Hard Fescue	<i>F. longifolia</i>	X		
Red Fescue	<i>F. rubra ssp. rubra</i>	X		
Chewing Fescue	<i>F. rubra ssp. commutata</i>	X		X
Creeping Bentgrass	<i>Agrostis palustris</i>	X		
Colonial Bentgrass	<i>A. tenius</i>	X		

Figure 1.

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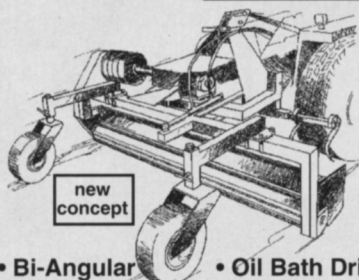
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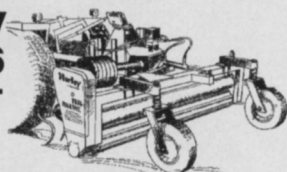


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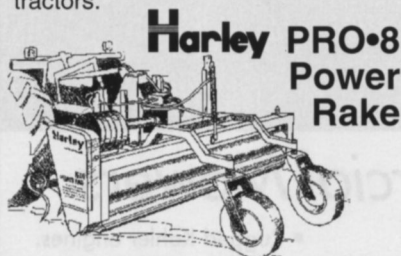
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USE READER SERVICE #46

Turf Cultivars

(continued from page 60)

in determining the preferred type of propagation.

Sometimes the relative importance of the factors change and the preferred method of propagation changes accordingly. For example, creeping bentgrass is now primarily sold as synthetic varieties. In the past, vegetatively propagated varieties were sold.

SYNTHETIC VARIETIES. The cost of establishment by seeding is usually lower than establishment via vegetative propagation. Creating variability is easy in species that cross-pollinate naturally.

The need to produce sexual seed, however, makes breeding more time consuming. For example, since the progeny of a cross is not identical to the heterozygous parents, the progeny must be grown and evaluated after the superior parent has been selected. This requires more time than testing the superior parents. In addition, the seed yield of the parents as well as the performance of the progeny must be considered.

Seed of cool-season grasses that will ultimately be established in the East is often grown in the Pacific Northwest. Therefore, the variety must perform well in both environments and care must be taken so that natural selection pressures in the seed production environment do not cause undesirable genetic shifts in the population.

Although production of a seed propagated synthetic variety is the primary means of propagation in a number of species, other alternatives are often used for species that have poor seed production (St. Augustinegrass), poor seed germination (zoysiagrass) or in sterile interspecific cultivars (Bermudagrass).

Most turfgrasses that are sold as seed are synthetic varieties. Kentucky bluegrass, a species that produces apomictic seed, is an exception.

VEGETATIVE & APOMICTIC VARIETIES.

Vegetative propagation is the favored method of propagation in species that spread by aggressive stolons and rhizomes: St. Augustinegrass, buffalograss and zoysiagrass. In contrast to species that reproduce via sexual reproduction, only the selected parents need to be evaluated.

Since production of seed is not necessary, sterile interspecific cultivars may be propagated. The genetic uniformity of a cultivar is an advantage in breeding and in establishing a uniform turf, but in some instances, the lack of genetic diversity could be a liability as the uniform cultivar has less ability to withstand disease, insect and environmental pressures. The bunch grasses: tall fescue, many of the fine fescues and perennial ryegrass, reproduce vegetatively by tillers and do not spread aggressively enough to ensure a uniform turf. Therefore, these species are usually propagated by seed.

Apomictic seed production allows the combination of the advantages of asexual vegetative propagation with the lower cost of seed establishment. Unlike sexual seed production, the progeny produced by apomictic seed are identical to the female parent and progeny testing is not necessary. A single superior plant can become a cultivar and produce a uniform turf.

Overall, one might conclude that turfgrass cultivars are a "mixed bag." The terms zoysiagrass and fine fescue include a number of species. A cultivar may consist of a cross between two related species. It could be a synthetic variety and be composed of many unique genotypes, or it could be a single genotype.

Although it is by no means all inclusive, the table below may help in understanding the relationships between some of the turfgrass species and their associated means of propagation.

Sweeney is a post-doctoral research fellow working with Danneberger, a professor in the department of agronomy, at The Ohio State University, Columbus, Ohio.

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Identical alleles at a locus.
Different alleles at a locus.
A cross between two different species.
The particular place that a gene occupies on a chromosome.
A spontaneous change in the genetic make up of an individual.
Offspring, descendants.
DNA formed by splicing the DNA of one individual into that of another.
Pollen from the same plant fertilizes the egg.

SPRINKLER HEAD SELECTION AND PLACEMENT

Trees, shrubs, ground covers and turf all have different watering requirements. Consequently, the best type of equipment should be selected for specific applications.

By Larry Keesen

ASK YOURSELF THIS question: "Am I really doing the best design I can for my client and can I improve what I'm doing?"

Most landscapers and irrigators can improve their design methods and should strive to do so on a continuing basis. It will come as no surprise to you that almost every landscape irrigation project takes place in a complicated area. Because of the nature of the landscape — the slopes, narrow strips, obstructions and small areas — there are specific difficulties in every turf irrigation design.

Sprinkler head selection and proper placement is the single most important aspect of an efficient water conserving irrigation system. If you're designing and/or installing an irrigation system you could be held liable if the system is not designed properly.

*Photo: Matt Shooner,
Focal Point Communications, Cincinnati, Ohio*

THE FIRST STEP in selecting heads and determining appropriate placement involves gathering the necessary information to make intelligent decisions. Below is a checklist to help with this process.

HEAD SELECTION. The best type of equipment should be selected for specific applications. First determine the available operating pressure range for sprinkler heads. Do not use an operating pressure which is within 5 PSI of the lowest available operating pressure. The water purveyor may decide to change the site pressure in the future, or population growth may increase demand while reducing pressure.

If a site has 75 PSI static pressure at its low end and the high point on the site is 23 feet higher, 10 PSI will be lost in efforts to raise water to that point, leaving 65 PSI. Subtract 20 PSI for system pressure losses and only 45 PSI is available at the base of the head.

The shape and size of the irrigated area should be analyzed next. If the site is a small residence with many confined areas, use a small radius rotor with an operating pressure of 25 to 30 PSI for areas that are wider than 15 or 20 feet. For areas that are less than 15 feet wide, small spray heads operating at the

same pressure are adequate. If there are a lot of trees in the turf area, pop-up spray heads may be more effective.

If the site is a large park of 20 acres, with 65 PSI static pressure and 20 lbs. of pressure loss, a 45 PSI limits the radius of coverage to 60 feet with a 40 PSI operating pressure.

The head operating pressure should be 10 PSI below the minimum available pressure or 35 PSI. If the system static pressure is above 70 PSI with little elevation change, install a pressure regulating valve immediately downstream of the backflow preventer to protect the equipment.

Diameters of up to 120 feet are my choice for most commercial projects. When the diameter increases beyond that the water trajectory is higher resulting in too much wind drift. The operating pressures must be above 70 PSI (requiring at least 90 PSI of static pressure) to spray that distance.

In most cases, a pumping system or a booster pump is needed to obtain these high pressures. Even with pumps it is better to keep the operating pressure lower to conserve energy over the long term. Avoid booster pumps because of the maintenance and energy costs.

Low angle nozzles may be considered

Different watering requirements should be specified for shrubs, ground covers and gardens. Ensure coverage, but avoid runoff.

for the top of slopes, low overhead clearances such as mature trees or bridges and in high wind areas. If there are slope conditions, check valves in the base of the head are essential to preventing low head drainage.

Trees, shrubs, ground covers, rose gardens and turf all have different watering requirements. The sprinkler application rate must be low enough to avoid runoff (although repeat cycles can be used to control this), yet high enough to complete the irrigation within the required operating window. (See the August 1992 issue for more information on calculating precipitation rates).

Bubbler heads are great for rose gardens and other planting areas, but be cautious. Bubbler head areas must be relatively flat or erosion problems can occur because of the high application rate on a small area.

Two months ago I evaluated some landscaped medians where the shrubs were irrigated by stream bubblers. The median was several hundred feet long with a 20-foot drop from one end to the other. Soil erosion became a real problem when the bubblers first operated, so the contractor changed the stream bubblers to part circle nozzles to reduce the flow rate. This median is still a major problem, resulting in runoff and water coming up through the concrete expansion joints in the street. A better choice would have been drip irrigation.

SPRINKLER HEAD LAYOUT. The purpose of an irrigation system is to apply the

CHECKLIST FOR SELECTING AND PLACING HEADS

- Potential water resources.
- Available site utilities and static pressure.
- Landscape planting plan or aerial photograph.
- Topographical plans.
- Site usage (athletic areas require more water).
- Maintenance considerations and level of commitment.
- Irrigation operating window.
- Crop cover/soil characteristics.
- Prevailing wind conditions and historical ET data.





water as uniformly as possible (see the October 1992 issue). Most manufacturers recommend a spacing of 50 percent of the effective diameter of the head. Specific heads may provide a higher uniformity at ranges from 40 percent to 60 percent depending on the individual head distribution profile, wind conditions and spacing configuration.

Spacing for any head should be no greater than the manufacturer's recommended spacing with some adjustment for wind conditions.

There are three basic spacing configurations: triangular, square and rectangular. Rectangular spacing works best when prevailing winds (5 mph or higher) come from a constant direction. Triangular spacing is the most efficient for large area irrigation, but for the average site, square and triangular spacing provide the same uniformity. Square spacing is best suited for geometric areas with 90-degree angles.

After proper head selection comes layout. The irrigated area should be bordered, and a head or heads should be selected so they do not overthrow the area. Using a compass to draw the radius of spray, visualize the area of coverage for each head. The radius line depicts where heads may be spaced in relationship to one another.

If there are 90-degree corners, start by placing quarter arc heads, always avoiding half heads spraying over the corner. Measure the distance between the two quarters and choose a spacing that divides equally by the measured distance, and is equal to or less than the selected spacing. Or, if it is better suited, pick a different head radius.

If distance is 265 feet and head radius is 35 feet, head spacing is 33.125 feet. If the perimeter is circular or curved, measure the length and calculate as shown above. Place part circle heads around the entire perimeter and avoid

overthrow beyond the perimeter.

After placing all the heads around the perimeter, position full circle heads inside the area from edge to center. If coverage problems crop up in odd areas, use part circle "back-up heads" where another row of full circle heads may not fit. These back-up heads are placed to water areas not adequately covered by other sprinkler heads.

Avoid diffusing spray patterns to reduce the coverage; it distorts sprinkler patterns and lowers uniformity.

OBSTRUCTIONS. An obstruction is anything which interrupts the spray patterns of an irrigation system such as trees, fences, light fixtures and telephone pedestals. In situations such as these, smaller radius heads may be used to water around all sides of the obstruction. The more barriers such as mature trees, buildings, picnic tables, etc., and the shorter the area width, the smaller the radius should be resulting in closer spacing and more heads.

SLOPES. Irrigating slopes presents difficulties such as controlling pressure because of elevation changes, maintaining high uniformity and minimizing runoff.

The uphill radius for a head with a 25 degree trajectory on a 2:1 slope is reduced by 30 percent and increases about the same on the downhill side resulting in an egg shaped pattern. To correct this problem, shift the rows of interior heads up the hill.

These problems can be resolved somewhat by setting heads on the slope at an angle halfway between vertical and perpendicular to the slope. For example, on a 2:1 or 50 percent slope with a 26-degree angle, the head tilts at a 13-degree

The tree trunk is obstructing the sprinkler head, making it difficult for the water to evenly cover the turf.



angle. If the head tilts any closer to vertical, erosion can occur.

Setting heads at the appropriate angle allows more water to go farther up the slope. For every 1 percent increase in slope above 10 percent, or 10:1, the spacing across the slope should be reduced by 1 percent.

A 50 percent slope, or 2:1, results in a 40 percent reduction in spacing across the slope. A 30-foot radius head should be spaced at 18 feet across the slope with 26 to 30 feet between the rows depending on if the spacing is triangular or rectangular.

When spacing heads on a flat plan surface, you must calculate the surface along the angle of the slope. To do this, use the formula in the gray box in the next column.

The heads placed at the bottom of a hill or slope need to be valved separately. This ensures that less water will be applied to lower levels of the slope. Some water will always run off and irrigate the bottom of the hill. Mid-point on the slope will need a moderate amount of water; therefore, these heads should also have their own

zone. Finally, heads placed on the hilltop water the longest because this section has no runoff from above, and is exposed

$A^2 = B^2 + C^2$
 B = Distance of slope on plan sheet
 C = Rise in slope
 For example, the plan dimension across a 2:1 slope measures 80 feet.
 $A^2 = 80^2 + 50^2$
 $6,400 + 2,500 = 8,900$
 (square root is 94.34 = A^2)
 The distance across the slope face is 94 feet.

to more sun and wind, thus increasing the water evaporation rate. In addition, low precipitation rate heads improve irrigation efficiency, and heads with a lower angle of trajectory will increase the uphill and reduce the downhill radius, improving sprinkler performance. Install lateral pipe horizontally on the slope to avoid major pressure variations.

INTERFACING ROTORS WITH SPRAYS. Rotor heads and pop-up spray heads have different application rates and must be bordered by both types to maintain good uniformity. Too often contractors space the

full circle rotor head and the full circle pop-up spray at the rotor head radius. The effective radius of coverage for a single head is 2/3 of its effective radius. Always draw an imaginary line between the two types and border the line with both.

Public safety also needs to be considered. Heads should always retract to ground level, and spray heads in shrubs and ground cover should be 6- or 12-inch pop-ups placed below sidewalk level, away from pedestrian traffic and snow removal.

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narrow strip as an area which is less than 7 to 10 feet wide. I dislike strip sprays because they tend to shoot up high in the air resulting in more wind drift. If the area is more than 6 feet wide, you can use strip heads, with their specially designed nozzles which provide rectangular, rather than circular coverage.

If your area is less than 6 feet wide, eliminate turf in favor of tree and shrub planting which can be watered by drip irrigation.

Medians should be irrigated using the same principles as narrow strips. In cold climates, where sand is used to provide traction over snow cover, a 6-inch high pop-up head should be placed along curb edges. The sand will cause rapid turf buildup along median edges.

Small, irregular areas produce difficulties in head spacing. In some cases, you may have to use pop-up spray heads with a 5-foot or 8-foot radius nozzles.

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

IRRIGATION QUESTIONS

1. If the minimum available operating pressure at the head is 50 PSI, would a head with a 40 PSI operating pressure be appropriate?
2. What are the three basic spacing configurations?
3. When is it appropriate to use bubbler heads?
4. How much is a 15-foot head spacing reduced across a 3:1 slope?
5. What is the single most important aspect of an efficient irrigation system?
6. What is the surface distance along a 2:1 slope when the plan distance is 100?

Answers appear on page 81 of January LLM.



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COMING
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Selective Predators... Pests

Ed. Note: The following text is a short excerpt from the soon-to-be published book: TURFGRASS ECOLOGY AND MANAGEMENT. In this installment, the cultural intensity of a turf defines a pest. This is obvious in comparing a high maintenance ecosystem such as a creeping bentgrass putting green vs. a highway roadside. Look for more excerpts from the book in future editions of Lawn & Landscape Maintenance magazine.

IN AN ECOLOGICAL sense, stability is indicated by the tendency of the species to remain at the same frequency. The stability is provided by an intricate system of checks and balances. In a natural ecosystem, competition between organisms provides a "stable state."

In other words, pests reach a balance with their surroundings that allows for some damage, but unchecked pest growth resulting in excessive damage is highly unlikely. A pure ecologist has no favorites; pests do not exist. All organisms have a place within an ecosystem even if two or more organisms share the same "rung" on the ladder. In turf, a pest is defined as an organism that disrupts the aesthetic or functional characteristics of the turf.

The cultural intensity of a turf defines a pest. This is most obvious in comparing a high maintenance ecosystem such as a creeping bentgrass putting green vs. a highway roadside. In the putting green situation where a uniform,

one grass species (monoculture) is desired, the number of organisms perceived as pests (weeds, pathogens, insects) increases. In a roadside situation where a turf cover is desired, but the species makeup is secondary in importance, the actual number of organisms that are pests may actually be greater than on the putting green, but the expectations of low maintenance turf is less. As a result, the number of pests are minimal to non-existent. The first step in developing a pest management strategy is to determine the expectations for a turf, and then the organisms considered to be pests.

PEST MANAGEMENT STRATEGIES. Over the years a revolution in the quality and quantity of managed turf has occurred. In the early part of the 20th century, turf quality was governed in large part by the weather, luck and the ability of a manager through cultural practices to minimize pests.

With the discovery of DDT in 1939 quickly followed by the hormone 2,4-D in 1944, a revolution in chemical control of pests occurred. With these and other discoveries the use of pesticides during the 1950s and early 1960s skyrocketed. But as with the concern worldwide over the environmental impact of DDT, pesticide usage on turf raised concerns of pest resistance and contamination. From this increased attention came the concept of integrated pest management (IPM).

In strict terms, pest management is an ecological matter. (Flint and van den Bosch, 1981) In attempting to minimize turf damage from pests, whether by cultural or chemical methods, it should be done with minimal disturbance to the ecosystem. The essence of IPM is to provide the desired quality with minimal ecological, economical and sociological consequences. From a practical point of view, IPM consists of

monitoring the pest and developing management strategies against those pests. Monitoring environmental conditions is critical. This requires the turfgrass manager to identify the pests of concern, determine the level of pest intrusion and monitor weather conditions where appropriate (i.e., are conditions favorable for pathogen infection) and then correlate these two together to develop an effective management program.

Resistant cultivars and cultural measures will always be the backbone of pest management. Biological agents are being tested but results are currently inconclusive. Thus, along with resistant cultivars and cultural measures, pesticides will continue to be important to the production of high quality turf for the near future.

Resistant cultivars have proven means of reducing disruptions due to many diseases. Resistance to melting out, stripe smut, red thread and powdery mildew have extended the range and survivability of Kentucky bluegrass. Blending is a popular practice for the purpose of increasing the genetic diversity of the turfgrass population. The logic here is that if one cultivar falls prey to a disease, the remaining cultivar(s) will fill in. Selection of the proper blend is paramount to achieving the desired result. For example, Vargas and Turgeon (1980) found that blending a susceptible Kentucky bluegrass cultivar with a melting-out resistant cultivar, did not result in dominance by the resistant cultivar. They postulated that the susceptible cultivar allowed for an inoculum buildup, adversely affecting the resistant cultivar. However, over a longer period and less intense disease pressure dominance may prevail.

Many cultural controls reduce the risk or level of disease. These practices may consist of proper watering, fertilization or mowing. Cultural practices act to reduce inoculum levels and/or slow down the development of the

pathogen in the infected plant.

PESTICIDES. Pesticides are compounds that kill pests. Pesticides are derived from a number of sources including botanical, microbial, synthetic and non-synthetic compounds.

Strictly speaking, organic compounds include carbon and can be of biological or non-biological origin. These compounds had broad-spectrum activity in controlling multiple pests. The botanical pesticides are derived naturally from plants and are used in the area of insect control. Microbial pesticides are compounds derived from microbial organisms. Biological controls include using parasites, predators or pathogens to contain pests. Biological control agents are not widely used for weed or disease control. However, research at Cornell University (Nelson, 1990) has shown some beneficial suppression of dollar spot and brown patch with certain composts and organic fertilizers. This may be due to the presence of antagonistic organisms. And as previously mentioned in Chapter 6, some antagonistic organisms may prove to be effective biological controls for some turfgrass diseases.

Milky Spore disease, caused by the bacteria *Bacillus popilliae*, can be an effective biological control agent of Japanese beetles. The bacteria is consumed by the grub and multiplies, literally filling the grub and causing death. After death, the spores are released making them available in the soil for other grubs. Several disadvantages to Milky Spore are that it is only effective on Japanese beetle grubs and it requires a few years to build up to an effective dose in the soil. However, once populations are established, yearly control will be achieved without subsequent applications. Recently, variable results with the Milky Spore disease has been reported.

An exciting new biological

(continued on page 82)

People

JEFF KLINGENBERG joined Farmers Marketing Corp. as research geneticist. Klingenberg's experience includes buffalo-grass research and development, breeding, management and environmental impact research of other turfgrass species.

Rain Bird announced the following promotions and additions to its staff: **Dan Simler** now serves as district manager for the contractor division's mid-Atlantic territory; **Doug Parker** joined the company as product coordinator of the same division and will assist in all aspects of new product development for the valve and controller lines; **Rick Malkin** was promoted to commercial division product manager; **Costanza Genoes Zerbi** became turf marketing coordinator, and will develop sales and advertising literature, analyze sales data, implement promotional programs and develop training and technical material; **Dale Bray** was named senior project engineer for the commercial division; and **Ted O'Miela** joined the company as quality manager for T.H. Molding.

Sta-Rite Industries promoted **David Byrd** to sales manager of the Eastern region for the Water Systems Group. Byrd, who has worked for Sta-Rite for more than 10 years, is responsible for sales in New York and New England.

The Professional Business Group of The O.M. Scott & Sons Co. recently expanded its marketing department, promoting **Robert Eichenberg Jr.**, who previously served as senior technical representative, to commercial marketing manager, and appointing **Paulette Grimme** as assistant marketing manager. Grimme was formerly a sales consultant for American Business Equipment.

Dan Damron joined Aquatrols as technical sales representative. He serves turf and ornamental professionals and distributors in 10 South Central states.

AgriDyne Technologies Inc. promoted **Dr. Timothy Wood** to vice president of research and development. Wood formerly was director of research and development.

DK GreenCycle appointed **Dr. J. Clark Gregory** as director of development, as



Eichenberg



Damron

well as president of DK GreenCycle Southeast Inc.

Aquapore Moisture Systems named **Kerry Tillman** manager of marketing communications and **Kay McCardle** customer service manager. Tillman is responsible for public relations and advertising; McCardle's role is to expand and manage customer services.

David Whitney joined Febco as sales manager overseeing sales activities of 14 representatives.

Miles Inc. promoted **Allen Haws** to director of specialty products in its agriculture division. Haws formerly held the title of business manager of the same department. ■

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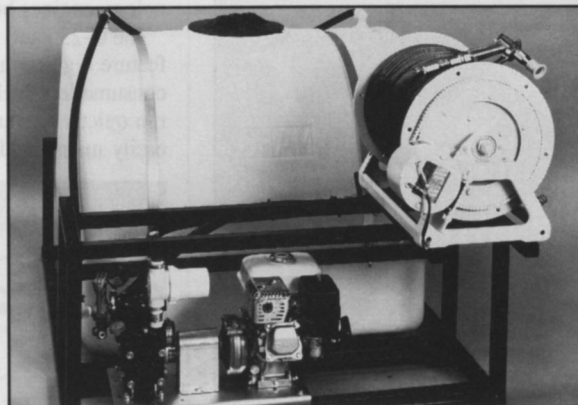
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Products

Scag Power Equipment Inc. has added a zero-turn radius rider to its line of commercial riders and walk-behinds. Driven by twin hydrostatic transmissions, the compact Scag SSZ "Super Z" features an electric blade engagement clutch, taper roller bearing spindles and a 5-gallon gas tank.



Planned engine options include 16-h.p. and 18-h.p. Briggs & Stratton and Kohler models. The SSZ weighs 750 pounds and provides forward ground speeds from 0 to 6.8 mph.

Circle 125 on reader service card

Tecumseh Products Co. introduces a 15-h.p. overhead valve engine for lawn tractors and rear-engine riding mowers. The engine offers greater fuel efficiency, up to a 25 percent increase over L-head designs, and increased horsepower per cubic inch of its 29.9-cubic-inch displacement.



The 15-h.p. OHV features a cast iron cylinder sleeve for long-life durability and a rotary high pressure oil pump with a 54-ounce oil capacity for cooler running.

The OHV engine is specially balanced so operators feel all the power without the vibration.

Circle 126 on reader service card

A midsize, heavy-duty clearing saw is available from **Husqvarna Forest & Garden Co.** The model 235R saw cuts

grass and brush along roads, parks and gardens. Its high-torque transmission provides maximum performance at lower rpms, resulting in a cooler engine and extended engine life. The 15.65-pound 235R is driven by a powerful 36 cc engine; recommended maximum engine speed is 11,000 rpms.

Even though this model is lighter, it can carry interchangeable tree and brush cut-

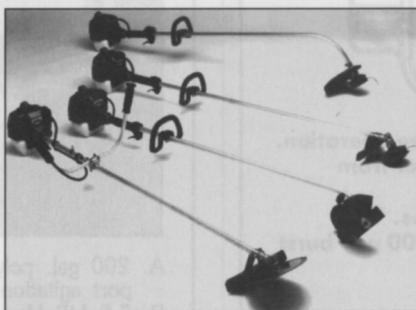


ting blades normally found on larger saws.

Circle 127 on reader service card

Shindaiwa offers two hand-held edgers and two brushcutters for landscaping and commercial use. The LE-230 edger delivers 1.1 h.p. while the LE-250 pumps out 1.2 h.p. Both models have advanced-technology engines built for long life.

The C-230 and C-250 brushcutters feature high-torque pro-tuned engines that consume less fuel than many brushcutters, run quietly and emit less exhaust. Both are easily maintained, straight-shaft units. All



internal parts are quickly accessible.

Circle 128 on reader service card

Neary's 500 series, the latest addition to the company's line of reel mower sharpening equipment, offers three-way ridged mounting, streamlined setup and true cylindrical sharpening.

The 500 SR features adjustable 145-

degree, relief grinding capabilities to help reduce drag between the reel and bedknife. The relief grinding feature can be added to a machine at any time. If increased production and computer-assisted sharpening accuracy are needed, upgrade to the 500 ASR with automatic control.

Circle 129 on reader service card

Trip-Trak, a microprocessor-based vehicle-activity reporting system from **Service Instrument Inc.**, monitors vehicle usage patterns which can improve safety, customer service, driver accountability, cost accounting and maintenance scheduling.

Trip-Trak determines when the vehicle stops and starts by monitoring time, vehicle speed and mileage. It records the distance between stops, maximum speed for each leg of the trip and the time and duration of each stop. Trip-Trak's memory stores the information for up to 750 consecutive stops or 99 days.

A built-in thermal printer produces a report with the above information on demand.



It also can generate a report pinpointing maximum speed traveled and the exact time at which it occurred, and a profile on vehicle speed for the last two minutes of operation.

Circle 130 on reader service card

Ames Lawn and Garden Tools offers its 1993 full-line catalog and winter tools catalog which illustrate more than 600 hand tools and other lawn and garden products.

The 87-page line catalog features an index for major product groupings that includes cultivators and weeders, grass shears, pole tree trimmers, rakes, shovels, scoops, ice scrapers and specialty snow tools.

Both catalogs contain sections devoted to Ames' impact merchandising materials such as wall display modules and tool displays. The full-line catalog also contains a seven-step section titled Planning Your Way To Greater Profits.

Circle 131 on reader service card

(continued on page 74)

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Products

(continued from page 70)

The Professional Business Group of O.M. Scott & Sons has improved two control products with a biodac carrier. The products, Turf Weedgrass Control and Pythium



Control, are part of the Scott ProTurf line.

Turf Weedgrass Control, made with Scott's pendimethalin technology, provides weed control for cool- and warm-season grasses. The product manages both grassy weeds (crabgrass, foxtail, goose grass, barnyard grass, fall panicum and Poa annua) and broadleaf weeds (cudweed, chickweed, hop clover, henbit, oxalis, evening primrose,

spurge, knotweed and purslane.)

Pythium Control prevents and controls Pythium blight and damping-off in established and newly seeded turf. It can be used on bentgrass, Kentucky bluegrass, perennial and annual ryegrass and Bermudagrass. In addition, it allows for seeding program flexibility.

Circle 132 on reader service card

The 60-inch flail mower from **Excel** features heavy-duty construction for cutting on rough terrain and fine/medium cut blades for fine turf.

The 3-1/2-inch cuttershaft spins in a reverse rotation to provide a high-quality cut. By installing optional dethatching blades, operators can dethatch their turf to get a jump on the growing season. Cutting heights range from a quarter-inch for de-



thatching to 4 inches.

The flail mower deck is available with Hustler tractor models 4200, 4300, 4400 and 4500.

Circle 133 on reader service card

Most Dependable Fountain Co. introduces a hose bibb outdoor plumbing access-
(continued on page 76)



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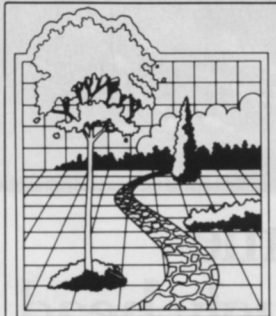
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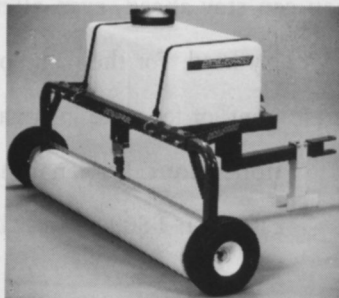
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(continued from page 74)

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JAN. 21-23 Idaho Horticulture Convention and Trade Show, Boise Centre on the Grove, Boise. Contact: Idaho Nursery Assoc., 2104 Floating Feather Road, Eagle, ID 83616; 800/INA-GROW.

JAN. 21-24 1st Turfgrass Management/Park Maintenance Training School, Hilton Hotel, Albany, N.Y. Contact: NYSTA, 800/873-TURF or 518/783-1229.

JAN. 25-28 Central Environmental Nursery Trade Show and The Ohio State University Nursery Short Course, Columbus Convention Center and Hyatt Regency Hotel, Columbus. Contact: ONA, 2021 East Dublin-Granville Road, Columbus, OH 43229; 614/431-2452 or 800/825-5062.

JAN. 27-29 Wyoming Groundskeepers and Growers Association Annual Conference and Trade Show, The Casper Events Center, Casper, Wyo. Contact: Bruce Potter, 307/637-7060 or Chuck Kostboth, 307/265-1870.

JAN. 29-30 Jacksonville Horticultural Trade Show, Jacksonville Agricultural Fairgrounds. Sponsored by Northeast Florida Nurserymen and Growers Association and Professional Landscape Services Association. Contact: Terry DelValle, 1010 N. McDuff Ave., Jacksonville, FL 32254; 904/387-8850.

JAN. 29-FEB. 26 Professional Landscape Management Program: Focus on Shrub Identification, Lancaster, Pa. Sessions occur on Fridays only. Contact: H. Bruce Hellerick, Penn State Cooperative Extension, 1383 Arcadia Road, Rm. 1, Lancaster, PA 17601-3149; 717/394-6851.

JAN. 31-FEB. 3 ALCA's Executive Forum, Sheraton Tuscon El Conquistador Resort. Contact: ALCA, 12200 Sunrise Valley Drive, Suite 150, Reston, VA 23091; 703/620-6363.

FEB. 1-26 34th Annual Turf Managers' Short Course, University of Guelph, Ontario, Canada. Contact: Ursula Rodrigues, 519/767-5000.

FEB. 2 Annuals Plant Program, sponsored by the Ohio Cooperative Extension Service, Tom's Country Place, Avon, Ohio. Contact: Charles Behnke, 42110 Russia Road, Elyria, OH 44035; 216/322-0127.

FEB. 3-4 The Ohio State University Athletic Field Short Course, Holiday Inn on the Lane, Columbus. Contact: The Department of Conferences and Institutes, 2021 Coffey

Road, Columbus, OH 43210-1086; 614/292-4230.

FEB. 3-4 Southern Illinois Grounds Maintenance School, Gateway Convention Center, Collinsville, Ill. Contact: Ron Cornwell, 200 University Park Drive, Edwardsville, IL 62025; 618/692-9434.

FEB. 3-5 American Sod Producers Association's 1993 Midwinter Conference and Exposition, The Fairmont Hotel at University Place, New Orleans, La. Contact: ASPA, 1855-A Hicks Road, Rolling Meadows, IL 60008; 708/705-9898.

FEB. 3-5 Mid-America Green Industry Convention, sponsored by the Professional Lawn Care Association of Mid-America, Hilton Plaza Inn, Kansas City, Mo. Contact: Olivia Golden, P.O. Box 35184, Kansas City, MO 64134; 816/765-7616.

FEB. 4 Northeastern Pennsylvania Turfgrass and Grounds Maintenance School, Mt. Laurel Resort, White Haven, Pa. Contact: Lisa Chrytser, Penn State Dept. of Agronomy, 814/865-2543.

FEB. 4-7 Landscape Management Clinic, Louisville, Ky. Contact: American Association of Nurserymen, 1250 I St., NW, Ste. 500, Washington, DC 20005; 202/789-2900.

FEB. 5-7 South Carolina Horticultural Industries Seminar & Trade Show, Columbia Marriott and State Fairgrounds, Columbia, S.C. 803/223-7278.

FEB. 8-9 28th Annual Shade Tree Symposium, sponsored by Penn-Del Chapter/International Society of Arboriculture and Penn State University Cooperative Extension, Lancaster Host Resort and Conference Center, Lancaster, Pa. Contact: Elizabeth Wertz, P.O. Box 293, Bedminster, PA 18910; 215/795-2096.

FEB. 9-13 NAA, Annual Meeting and Management Conference, Don Cesar Hotel, St. Petersburg Beach, Fla. Contact: NAA, The Meeting Place Mall, Route 101, P.O. Box 1094, Amherst, NH 03031-1094; 603/673-3311.

FEB. 11 Urban Tree Conference, University of Florida Cooperative Extension Service Auditorium, Sanford, Fla. Contact: Uday K. Yadav, 407/323-2500, ext. 5559.

FEB. 12-14 7th Annual National Symposium For Landscape Professionals, Rockville, Md. Contact: Environmental Design, P.O. Box 15121, Chevy Chase, MD 20825; 301/495-4747.

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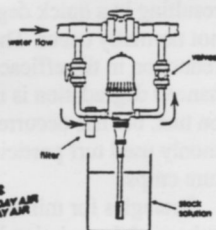
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Answers to questions on page 67

1. Yes
2. Triangular, square and rectangular.
3. In relatively flat planting beds.
4. 23 percent resulting in a spacing of 11.55 feet across the slope.
5. Sprinkler head selection and placement.
6. 111.8 feet

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Book Excerpt

(continued from page 68)

control for insects is the use of certain non-pathogenic nematodes that infect a range of turfgrass insects. These nematodes promise to be a future means of insect management. (Shetlar et al., 1988)

SYNTHETIC PESTICIDES. Synthetic compounds are man-made products, and have received the greatest attention in pest control. Synthetic compounds have been developed to control insects, weeds and pathogens with a great deal of success. (See Appendix for listing of chemicals.) Synthetic pesticides by their nature are relatively non-selective. In other words, pesticides are lethal to both target and non-target organisms. Beneficial predators may succumb to the same fate as their turf-destroying cohorts.

Pesticide effects on soil organisms is variable depending on the organism. Research has shown a 60 percent reduction in insect populations following an insecticide application to a Kentucky bluegrass lawn. (Cockfield and Potter, 1983) In highly maintained turfs in which pesticides and fertilizers are used, predatory insects are less diverse and abundant than in untreated sites. (Cockfield and Potter, 1985; Arnold and Potter, 1987) Beneficial insect predator populations can be suppressed for a significant period of time. (Cockfield and Potter, 1984)

Pesticides may alter the growth of turfgrass plants and increase the severity of pests not targeted. Certain herbicides may reduce root growth, shoot growth and enhance thatch formation. In addition, certain herbicides have been shown to slightly increase the severity of brown patch and dollar spot on bermudagrass and Pythium blight on perennial ryegrass. (Karr et al., 1979) Smiley (1981), in a review on pesticide non-target effects, reported greater incidence of the patch diseases and stripe smut with bandane applications.

Pesticides may act directly by influencing the capacity of the pathogens for growth or host resistance or the balance between pathogenic fungi and other organisms. (Smiley, 1981) Fungicide applications to control one pathogen may enhance the severity of others. Benzimidazole fungicides are used on a wide spectrum of pathogens. However, these fungicides have little activity on *Pythium* spp., increasing the potential for Pythium blight in situations where benzimidazole fungicides are overused. (Warren, et al., 1976) Similar effects were found where the severity of red thread on perennial ryegrass was increased with repeated applications of benomyl. (Dernoeden et al., 1985)

Not all non-target effects are detrimental. Fungicide applications have been reported to increase quality of perennial ryegrass and Kentucky bluegrass. (Dernoeden et al., 1985; Kane and Smiley, 1983) Fungicides used to control red thread and stripe smut also indirectly controlled crabgrass. (Dernoeden, 1989; Dernoeden and Krouse, 1990) Certain sterol inhibiting fungicides have also been said to enhance seedling root and shoot growth. (Goatley and Schmidt, 1990) On Kentucky bluegrass sod, the sterol inhibiting fungicides propiconazole and triadimifon enhanced post-transplant rooting and sod strength. (Goatley and Schmidt, 1991) This stimulation effect is most likely rate dependent since Kane and Smiley (1983) have reported suppressed root and shoot growth with similar fungicides at higher rates.

Pesticide effects on soil microorganisms is of minor importance. (Greaves, 1987) Recent research on sequential pesticide applications has shown that the effects on the microbial population are short-lived. (Schuster and Schroder, 1990) Soil microorganisms play a beneficial role in the breakdown of pesticides. With numerous chemicals they are able to take toxic materials and break them down into harmless compounds. The structure of the compound does influence the breakdown rate. For instance, 2,4-D is rapidly broken

down, but the addition of a chlorine molecule (2,4,5-T) is resistant to microbial breakdown for a longer period of time. If microbial breakdown of a pesticide is too rapid causing a reduction in efficacy, enhanced degradation is occurring.

A pesticide that is applied repeatedly causing a comparatively rapid decomposition rate than the same pesticide applied on a non-repeated site, is said to have enhanced degradation. In soils where enhanced degradation has been detected, what is occurring is that microorganisms have found a means of using a pesticide molecule as a source of carbon resulting in a quick degradation that would not normally occur. The result is a substantial reduction in the efficacy of the product. Enhanced degradation is not widely documented on turf, but has occurred with some commonly used turf pesticides on other agriculture crops.

Strategies for minimizing the likelihood of enhanced degradation involve using good management practices such as:

- * Cultural practices to minimize the need for pesticide use. This includes practices such as proper nitrogen programs to minimize common turf diseases and maintaining a high density lawn to reduce the probability of weed invasion.

- * Pesticides applied sparingly, only when needed. This can include checking for the presence of an insect before spraying, or spraying for disease only when environmental conditions are favorable.

- * Applying pesticides only at proper rates, and looking out for formulation effects. Research shows herbicides formulated as a granular are less susceptible to degradation than liquid sprays. (Osgerby, 1973)

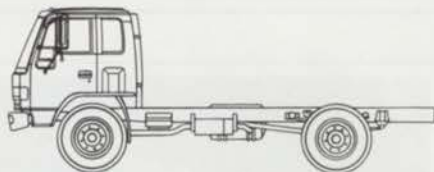
In summary, synthetic pesticides are a significant component in high maintenance turfgrass situations. Efficient use of these compounds can result in an aesthetic and functional turf. However, overuse or incorrect application rates can lead to detrimental non-target effects. ■

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