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STRATEGIC ALLIANCES

*A new sense of urgency pervades
the green industry as it strives to break down
barriers and build cooperative ties.*

ALSO IN THIS ISSUE:

**1992 Equipment
Sales Forecast**

**Midrange
Truck Trends**

**New Product
Preview**

**Controlling
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"To be competitive in this marketplace, you have to cut operating costs without cutting service. Our customers are cost-conscious, so we have to manage our business better." George and Patricia Morrell own and operate one of Atlanta's largest landscape maintenance firms. They have owned Isuzu trucks since 1985.

"After the first two or three Isuzu trucks we were hooked. Our mechanics told us these trucks were simply built better. Our Chevrolets are about the same age and they're literally falling apart.



With Isuzu trucks we've had no major problems. The mileage is twice what we were getting with other trucks. And the employees aren't tearing them up. They're solid, quality trucks. The difference in initial cost is paid back ten times over during their life.

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Works for the Morrells.



Lawn & Landscape MAINTENANCE

VOLUME 12, NUMBER 11

NOVEMBER 1991

FEATURES

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Just last year, the industry was anticipating the success — or failure — of the Green Industry Expo. Today, the industry has much to reflect on, resulting in a giant step forward in cooperation.

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The survival of the servicing-dealer network and increased consolidation are vital challenges for the outdoor power industry.

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Drip irrigation is probably not used more extensively in the landscape industry because of a lack of experience and education.

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The pressure brought on by Oregon's recently passed field burning regulations heightens the immediacy for alternative solutions.

91 New Product Showcase

Manufacturers and suppliers are gearing up for 1992 with new product offerings.

Cover Photo: Bill Pappas,
Cleveland, Ohio.

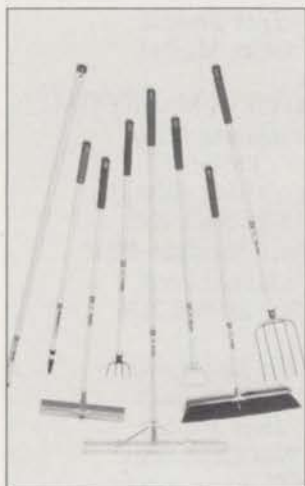


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SPECIAL REPORT: Composting in the '90s



This 16-page section presents information a landscape contractor can't afford to do without. In addition to unprecedented industry research, learn how two compost facilities got off the ground, what issues are affecting the disposal of yard waste and what equipment is needed to get started in composting. Pages 49-64



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Editor's Focus

IF THE SEVENTIES were considered the service decade and the eighties the quality decade, what designation will be hung on the nineties?

Originality, according to Mike Vance, keynote speaker at the American Society of Landscape Architects annual meeting.

Things that get built and sold won't be based on budgets, sales predictions and the like, but on old-fashioned originality, Vance said. Business consolidation, a slow economy and increased competition are elements everyone must deal with; so the firm with the most creativity is bound to come out ahead.

In most cases, original thoughts and ideas are strictly contained within a specific company. But on a different level, various segments of the green industry have banded together to instill a fresh outlook on this still-growing marketplace.

No longer content to wait in the wings and let their surroundings control their fate, a contingent of landscape contractors, nurserymen, grounds managers, landscape architects and others have formed a new inter-industry union prophetically called the New Alliance.

Initiated by the ASLA, the plan is to bring the entire green industry together for the purposes of increasing communications and developing national standards among various green industry segments. Their mission: What can they do to help the industry provide better goods and services as a whole?

On the surface, the plan sounds fairly simple. These groups are all part of the same industry, their products and services all interrelate and profitability is the main goal of each individual service area. So what makes the alliance distinguishable?

Until now, most individuals holding different responsibilities within the landscape puzzle concentrated mainly on the services which brought them revenue — which means they probably didn't give too much thought as to how other service areas linked with their own.

But if the new Alliance catches hold — as it has already shown it has the force to — it will open a new era of cooperation in the green industry.

The group has held several meetings in conjunction with industry trade shows, and the response has been phenomenal. More than 1,200 attended the New Alliance meeting hosted by the American Association of Nurserymen last summer in Orlando.

Subtle changes such as landscape con-



tractors and landscape architects visiting nurseries to view plant material, and growers developing better communications with distributors are areas which can and should improve.

Although a significant harbinger of the times, the New Alliance does not stand alone in its efforts. Progress can also be seen in other areas such as the cooperative growth experienced this year in the specialty pesticide industry. The Professional Lawn Care Association of America and Capitol Line, the Responsible Industry for a Sound Environment and the Coalition for a Sensible Pesticide Policy have all shown how industry controversies can be handled in a positive and proactive manner.

The industry has gone through a much-needed catharsis of sorts this year. When the subject of cooperation was first broached by LLM one year ago, not all industry representatives seemed receptive to the idea of combining efforts which at the time fell under each individual group's domain.

This year, the emphasis has shifted. Whether the impetus is increased governmental legislation, the poor economy or just intuition, it doesn't matter. What's important is that economies of scale, strength in numbers or plain old business smarts are beginning to cross real or imagined boundaries. Hats off to those who made this new direction take hold and to those who will strive to keep it going.

This month's special report, "Composting in the '90s," is another clear sign of the industry's need to pull together. Let us know what you think. — Cindy Code

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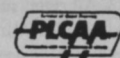
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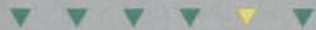
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USE READER SERVICE #29

Business Watch

IF THE AMERICAN PUBLIC is any judge of economic health, then current recessionary conditions are not likely to improve soon. According to the Consumer Confidence Index, a survey of 5,000 U.S. households, consumers are wary about the future (see chart). The monthly index, compiled by the Conference Board, fell for the third consecutive month in September to 72.7, down from 76.2 in August. The Conference Board also found that consumers are pessimistic on the business outlook. Nearly 40 percent rated the business climate as bad, and only 11 percent rated it as good. Better news comes from the National Association of Realtors. New home sales increased 6.7 percent in August to 540,000 homes. Housing starts also continued to improve at a slow, but steady rate. National figures reached 1.07 million in August, up 0.6 percent from July. Sales of existing homes, however, declined to 3.25 million in August. Retail sales in September increased 0.7 percent, the single largest monthly gain for the year.

CONSUMER PRICE INDEX*

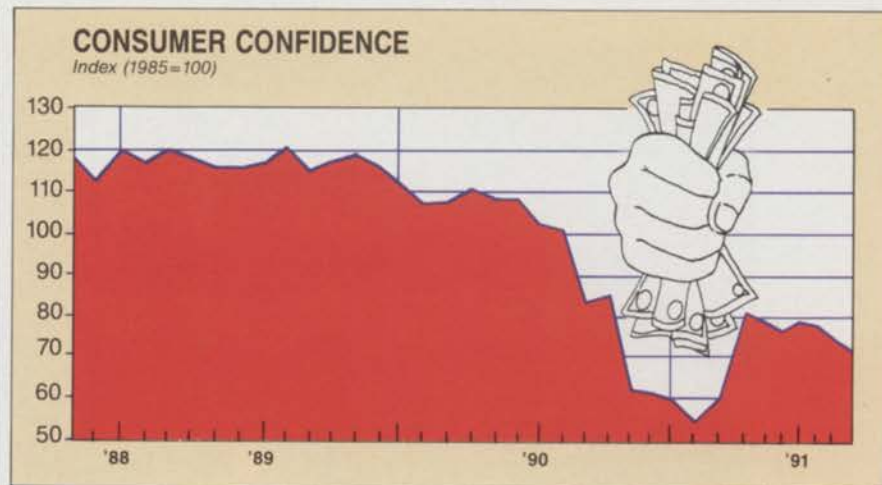
JUNE	JULY	AUG	SEPT.
+0.2	+0.2	+0.2	+0.4

*Percent change from preceding month.

RETAIL SALES*

JUNE	JULY	AUG	SEPT.
-0.1	+0.4	-0.6	+0.7

*Percent change from preceding month.



(Source: The Wall Street Journal)



(Source: National Association of Realtors)



(Source: National Association of Realtors)



REGIONAL REPORT: TEXAS

THERE'S SOME GOOD news and bad news for the Texas landscape market.

Maintenance accounts are generally up, but installation accounts — especially

in the commercial segment — are down.

Since the end of the Gulf War, residential construction has gradually returned to its former growth rate. But commercial construction remains sluggish.

Otis Hawkins, owner of Hawkins Nursery and Landscape Co., Dallas, said that this slowdown in commercial construction has forced increased competition in the residential landscape sector.

"There is not enough business to absorb the plant material that's being grown today," Hawkins said. "Inventory is high on certain items. Prices are still far too cheap compared to where they need to be. It has kind of become a cutthroat business."

Hawkins' firm has three divisions: wholesale growers, wholesale/retail yard and commercial landscape contracting. To remain competitive, Hawkins is "doing the same thing others are doing" — running specials on overstocked items and intensifying efforts.

Many areas of Texas are still grappling with a contentious, oil-based economy. According to Matt Wells, service manager for Lawn Doctor of Midland-Odessa, the local economy is oil-dependent, and the outlook is "not good." Wells contends that busi-

ness has slowed since 1985 when the price of oil dropped dramatically. Now, the company offers discounts and relies on advertising to attract new customers.

Eric Keesen, vice president of Allen Keesen Landscape in San Antonio, said that the local economy has been fairly stagnant for several years. "We think every year it's going to get better."

Keesen added that he has seen a slight increase in new construction lately, but "nothing yet to get too excited about."

The weather hasn't helped the San Antonio area either; the summer of '91 was unseasonably hot and rainy, he said. Worse, forecasts call for a severe winter.

On a more positive note, Keesen said, maintenance projects have increased steadily each year.

Maintenance projects are also up for Minor's Inc., Forth Worth. "For our segment, it's not too bad. There's not too much building going on, but we don't do much installation," said David Minor, president and CEO.

Dallas/Forth Worth recently was named the second most desirable place to do business in America (Atlanta was number one) by a survey of CEOs in *Fortune* magazine.

As for Minor's Inc.: "We're always looking ahead. We had an outstanding year in '91, and we're cautiously optimistic that we can continue our good fortune." ■

"For 25 Years We've Made Beautiful Music Together."

"Twenty-five years ago when I was just getting started in landscaping, I got my first Gravely. It was a two-wheel convertible and that tractor was my bread and butter. Today, I handle the landscaping at Opryland. And I need machines that jump curbs, get in and out of tight spots, and help do a million chores. I have a bunch of Gravelys — riders, walk-behinds, plus a lot of attachments. It's not just sentiment, either. Gravely makes my kind of equipment. Rugged machines that can run all

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USE READER SERVICE #39



News in Brief

NEWS DIGEST

Explosion Damages Lebanon Plant

The specific cause of a recent explosion and fire at Lebanon Chemical Corp.'s Lebanon, Pa., fertilizer manufacturing plant is still unknown. The blast damaged a section of the facility, but no one was hurt.

Plans to rebuild the ruined facility are currently under way. Changes at the site will provide even greater production capacity to meet customers' product requirements, according to Lebanon.

FIFRA Amendment Bill To Be Introduced

Rep. Charles Rose, D-N.C., is expected to introduce a bill amending the Federal Insecticide, Fungicide and Rodenticide Act in the U.S. House of Representatives.

The bill will likely contain language addressing a fast-track registration process for "safer" pesticides. The bill would also allow companies to have exclusive use of such new discoveries.

Improved Disease Diagnosis Available

Immunoassay tests now in relative widespread use agriculturally may also have a place in turf management programs.

Immunoassay tests employ antibodies that cause a color change or some other measurable reaction in the presence of the substance being tested for. These tests are quicker, simpler and usually less expensive than lab tests and don't require special training to use.

There are kits that can detect the Phytophthora organism in soil, and others that can detect Phytophthora, Pythium, Rhizoctonia and Sclerotinia in a variety of fresh plant tissue.

Legislation Gives Boost to Mulching

Chicago-area yard supply stores said interest in composting has tripled this year, according to a report in *The Wall Street Journal*.

Shutting off public landfills to yard waste has put professionals and individuals alike in a composting frame of mind.

The Reading, Mass., public compost center drew some 400 car deliveries one day last fall, and the University of Missouri Extension has distributed more than 89,000 "Don't Bag It" pamphlets.

Identifying Real Risk vs. Hypothetical Risk

AMERICANS WANT assurances that everything they eat and everything that happens in their environment, whether near or far, is safe.

But the question isn't really whether it's safe or not, since few things in life can really be safe. The question should be, is it safe enough, according to Dr. C. Everett Koop, former U.S. Surgeon General speaking at the 1991 Pesticides in Perspective Media Forum held recently in Indianapolis.

Sponsored by DowElanco, Indianapolis, the forum brought together 45 leading print and broadcast journalists whose audiences total 25 million people.

"As in all other public health questions, we need a better understanding of real risk and hypothetical risk. The risk, for example, of you being killed by an automobile is much greater than any hypothetical risk of a pesticide," Koop said. "Your chances of being killed by a car are 1 in 6,000. By focusing on hypothetical risk like a pesticide, not only do people find their anxiety levels elevated, but it affects everything else they could be doing more readily, more legitimately and with greater effect."

If individuals want to increase their chances for good health, Koop suggested the following: don't smoke; if you drink alcohol, do it in moderation; never drive if you've been drinking; wear your seatbelt, front and back, whenever you get in a car; protect your home against fire, use a smoke alarm; have a doctor check your blood pressure and your cholesterol if it hasn't been done in five years; exercise appropriately to your age and your physical condition; eat a balanced diet; avoid high fat intake, but on the other hand don't concentrate on it so much that you become a food nut.

ACCIDENTAL DEATHS DUE TO PESTICIDE POISONING

On average, there are only 10 deaths per year from accidental or occupational exposure to pesticides, compared to over 17,000 deaths from handguns.



Number of Accidental Deaths Per Year

Motor Vehicles	51,000
Handguns	17,000
Swimming	3,000
Aspirin	200
Scholastic Football	23
Pesticides	10

Source: National Center for Health Statistics

California Green Industry Records New Growth

California's lawn and garden industry continued its steady growth, posting sales of \$4.4 billion during 1990. This represents a 4 percent increase over the previous year, and 21 percent of lawn and garden sales nationally, according to the California Association of Nurserymen.

"This is a resilient industry when you consider the adversity we've faced during the past few years," said Ralph Klages, president of CAN. "We're now in the middle of a fifth year of drought and an economic recession, yet business continues to grow."

The impact of last December's freeze which caused significant damage to nursery

stock did not affect 1990 sales. CAN said retail nurseries are benefitting from the freeze during 1991 since many California homeowners are replacing valuable landscape that they lost.

Ironically, the lingering recession has helped keep the state's lawn and garden industry in the black.

Du Pont Modifies Benlate Label

All ornamental uses as well as all dip, drench, container and greenhouse uses of Du Pont's Benlate and Tersan WP (wettable powder) fungicides have been deleted from their respective product labels in the United States.

Introducing
DIMENSION®
Stay a step ahead



...by stretching your application time for crabgrass treatments.



Break-through chemistry allows preemergence and postemergence crabgrass control.

New DIMENSION® turf herbicide helps you take your busiest season in stride. Break-through chemistry makes Dimension the only herbicide on the market with both preemergence and postemergence activity. This wider application window gives you up to 13 weeks to apply Dimension, instead of the normal five to seven.*

No other herbicide gives you so much flexibility. With Dimension, you'll have more time to serve more customers — more efficiently.

Season-long crabgrass control with one application.

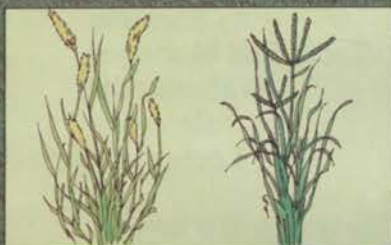
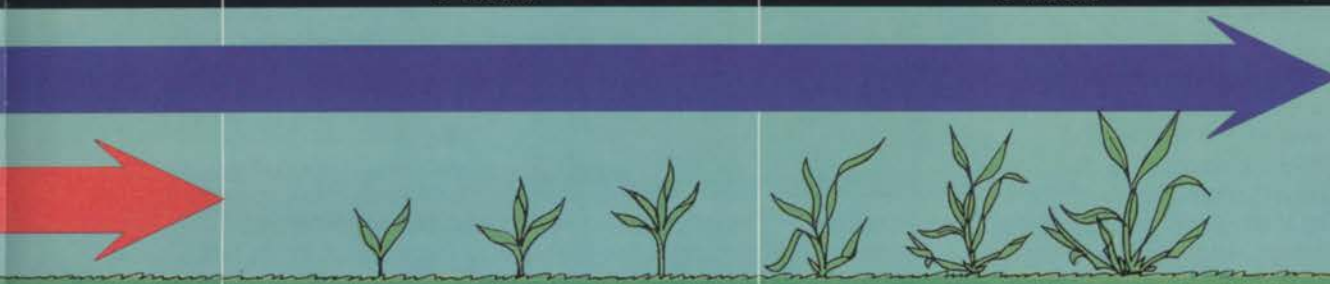
Advanced chemistry also makes Dimension the first turf herbicide to allow true season-long control of crabgrass. Unlike competitive products, Dimension keeps working, month after month. So you won't have to waste time on re-treatments to maintain great-looking turf. Plus, you'll have happier customers and fewer call-backs.

*Based on a single application. **For control of tilled crabgrass, tank mix Dimension with Acclaim® or MSMA.



POSTEMERGENCE-PRE-TILLERED
3 weeks

POSTEMERGENCE-TILLERED**
3 weeks



Foxtail

Goosegrass



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Oxalis



Controls more than crabgrass.

Dimension herbicide doesn't stop with crabgrass. Its broad-spectrum activity targets a variety of annual grasses and broadleaf weeds. This control includes foxtail, goosegrass, spurge and oxalis.



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Easy on turf, permits fall overseeding.

A wide variety of cool- and warm-season turfgrasses show exceptional tolerance to Dimension. When used according to label directions, this herbicide does not cause injury to turf or a reduction in turf quality. You can also overseed with confidence three months after an application of Dimension.

Low rates, easy handling.

Dimension does not require you to put down as much herbicide as you would with other pre-emergent herbicides. That means there's less material to mix. And there's no settling in liquid fertilizer.

You'll also like the fact that Dimension is compatible with all common herbicides, insecticides and fungicides. And, unlike other postemergent products, it is not affected by temperature at application time. In addition, Dimension does not stain.

Join the professionals who have stepped up to Dimension.

David Hanus
Herwald Lawn Care
Bryan, TX



"Dimension works very well for me on crabgrass, mainly because it is flexible. The wider window allows us to visit a customer in March or April with a one-time application and get lasting control. Having that flexibility is a big benefit."



Mike Kowalchuk
Owner
Gro-Control Inc.
Westland, MI

"I like Dimension because there is no staining and it mixes easily. Also, you can spray it late in Round 1 and kill any emerged crabgrass, while putting a barrier down for the rest."

Randy Zweifel
President and Owner
Lawn Managers
St. Louis, MO



"We used Dimension on lawns with crabgrass in the two- and three-leaf stages and were very pleased with the results. The one application eliminated the existing plants while keeping the new ones from emerging. It's nice to have the option of applying a product with both preemergent and postemergent activity."



Ray Sammis
Technical Manager
Professional
Grounds
Lorton, VA

"The worst time of the year for every LCO is the spring burst; trying to get the pre-emergent down with a very narrow window. Dimension doubles that window. It takes you out of the push, saves you overtime and saves wear and tear on your equipment. It literally takes the pressure out of the chemical maintenance program."

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³Acclaim is a trademark of Hoechst AG.

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The company decided that it didn't make good business sense to remain in these areas because of small market potential.

In most cases, alternative products are available and the industry shouldn't experience a significant disruption from the decision. Du Pont added there are no further plans to make any changes in the registered uses of the product.

The American Association of Nurserymen and other national grower groups are exploring alternative options with pesticide manufacturers and researchers. To date, possible alternative fungicides include Topsin® M (Atochem N.A.), Domain® (Grace-Sierra) and Cleary® 3336 (W.A. Cleary).

Questions related to the label changes can be answered by calling Du Pont at 800/253-5225.

RISE Solicits Funds For Local Defense

Since the Supreme Court's summer ruling giving municipalities the right to invoke restrictions on the use of pesticides, several cities around the country are considering such ordinances.

GREEN NOTES

The Ohio Lawn Care Association will hold its first annual meeting during the Ohio Turfgrass Conference in Cincinnati, Dec. 2-5. A short reception for those attending the meeting will follow. Members and non-members are encouraged to attend. OLCA was formed in Spring 1991.

Ruppert Landscape Co. is the recipient of six grand awards from the Landscape Contractors Association environmental awards program. All six awards were for commercial projects. The LCA represents contractors in the Washington, D.C., metro area.

Greenscape Inc., formerly based in Fayetteville, N.C., moved its corporate headquarters to the Metro-Raleigh area. Greenscape employs more than 80 people in two branches and provides design-build services in landscape construction, maintenance and irrigation throughout the Raleigh and Fayetteville areas.

Pennington Enterprises Inc. is building a new forest products and soil amendments plant near Madison, Ga., for basic ingredient manufacturing, processing and packing of pine bark nuggets and mulch, Cypress mulch, composted cow manure, peat moss, potting soils, play sand and decorative rocks.

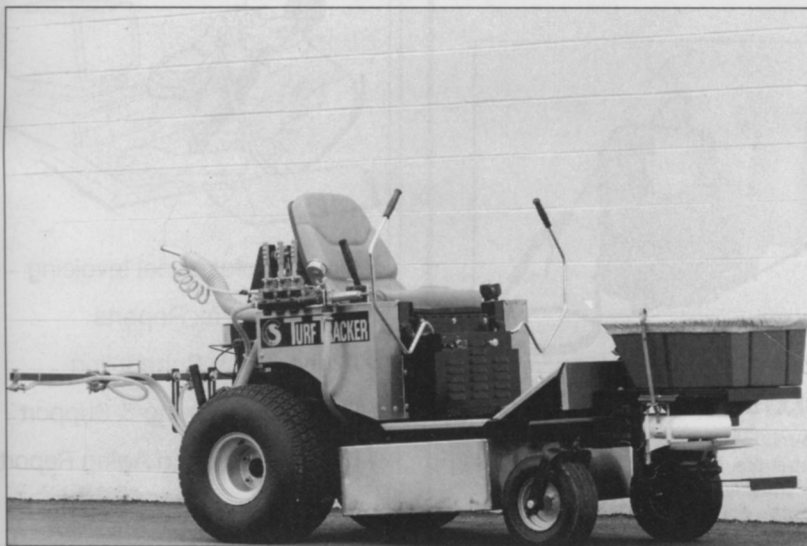
The Missoula (Montana) City Council passed a restrictive posting ordinance which covers virtually all outdoor pesticide applications including residential properties, parks, nurseries, rights-of-way, utilities and so on, within town limits.

While it can't fight all local ordinances,

the Responsible Industry for a Sound Environment has chosen to take on the city of Missoula because it is the first public referendum since the Supreme Court ruling, and can be used as a precedent in other areas.

A victory in such a public referendum

SS8030 TURF TRACKER



Our zero-turning radius Turf Tracker is designed for use on residential and small to mid-size commercial properties. Completely maneuverable, it allows you to treat in the tightest areas and still cover up to 40,000 sq. ft. in under 6½ minutes.

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will indicate that the public does not want these restrictive regulations. A local campaign committee, to which RISE will contribute, has been developed and registered in Montana.

The committee has retained a local campaign agency, Sage Public Relations, to design and implement the effort. The campaign will cost \$20,000 to \$30,000 and will be funded with local, state and national contributions. About 30 percent has already been committed.

But a victory won't come easy as the Montana Public Interest Group in cooperation with the National Coalition Against the Misuse of Pesticides is developing a support program to pass the measure.

Although the local committee has raised funds from a broad coalition, RISE members are being asked to support the effort. The organization is suggesting that each basic manufacturer consider a contribution of \$2,000 and formulators consider a \$1,000 contribution. Distributors are also encouraged to contribute. Donations of any amount are appreciated.

Checks should be made payable to "RISE — Missoula Initiative" and mailed to: NACA/RISE Program, Dept. 5050, Washington, D.C. 20061-5050.

Mitsubishi Agrees to Engine Rebuilding Deal

Mitsubishi Fuso Truck of America entered into an agreement with Springfield Manufacturing Corp. as the exclusive remanufacturer of its engines. SRC will repair and rebuild engines to factory specifications in supplying the nationwide Mitsubishi Fuso Truck dealer body.



SRC of Springfield, Mo., is known for its outstanding service work rebuilding medium- and heavy-duty diesel engines for U.S. truck OEMs. Mitsubishi Fuso Truck of America is the first Pacific Rim truck manufacturer to announce an engine rebuild program in the United States.

All parts used in the remanufacture of the engine are supplied by Mitsubishi to ensure that the rebuild quality is maintained according to OEM specifications.

PLCAA Unveils New Leadership

New officers and nominees for three vacant director positions for the Professional Lawn Care Association of America have been announced for 1992. They are:

Bob Andrews, The Greenskeeper, Carmel, Ind., president; Ed Coia, Lawnmark, Hudson, Ohio, president-elect; John Robinson, Green Drop Lawns, Calgary, Alberta, Canada, second vice president; Patrick Norton, Barefoot Grass, Columbus, Ohio, secretary/treasurer; and Neal DeAngelo, Lawn Specialties, Hazleton, Pa., immediate past president.

Peter Machin from The Andersons, Maumee, Ohio, and Dave Duncan, Monsanto, St. Louis, Mo., will serve as associate directors.

Six nominees for the three director slots include: Richard Ficco, Partners Quality Lawn Service, South Easton, Mass.; Nor-

(continued on page 14)

BIRCHMEIER SPRAYERS FOR THE PROFESSIONAL



STANDARD BACK PACK

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The summer drought of 1991 caused mandatory water restrictions for Tidewater, Virginia. Irrigation of turfgrass with city water was prohibited. Recognizing the importance of a deep root system to summer stress, we had incorporated IronROOTS® into our spring and summer monthly fungicide program. By the end of summer, it was clearly evident that all 5,000,000 square feet of our premium tall fescue lawns had not only endured the stresses of the drought in a healthy condition but were darker green in color. Best of all, we had a visual edge over the competition. ROOTS™ was a key element to the success of our summer turf program, especially under the oppressive heat and humidity of the long Virginia summer.

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*ROOTS and IronROOTS are trademarks
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USE READER SERVICE #32

News

(continued from page 12)

man Goldenburg, Service Master/Tru Green, Miami, Fla.; Thomas Murrill, Chem-Lawn, Columbus, Ohio; Douglas Smel-lage, Lawns of Dallas, Dallas, Texas; Lou Wierichs, Service Master Fox Cities, Ap-pleton, Wis.; and Joe Williams, Lawn Mas-ter, Pensacola, Fla.

New board members will be announced at PLCAA's annual meeting in Tampa this month.

Minneapolis Considers Pesticide Restrictions

The Minneapolis Environmental Commis-sion is considering several proposals af-fecting pesticide use in that city.

Among the most burdensome are re-commendations to limit the retail sale of pesticides to persons who have completed a certified education program; require pri-vate as well as commercial pesticide ap-plier to post warning signs; require pesticide retailers to post descriptions of chemical composition and health and en-vironmental effects; require pesticide re-

tailers to accept waste pesticides and manufacturers to pick up and dispose of them; and require all persons planning to use pesticides to give advance notice to vulnerable persons.

A proposed measure will be sent to the Minneapolis City Council for approval.

Vigoro Goes For the Gold

Vigoro Industries Inc., a producer and distributor of fertilizers and related lawn and garden products, is an Official Spon-sor of the 1992 U.S. Olympic Team.

It is said to be the first time that a com-pany in the lawn and garden industry has joined the ranks of America's leading bu-sinesses including Anheuser-Busch, Coca-Cola and Reebok.



As a sponsor, Vigoro will have exclu-sive rights in the lawn and garden industry to use the famed Olympic symbol in ad-

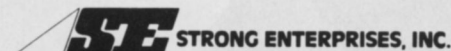
vertising and marketing programs.

Vigoro has guaranteed a minimum total contribution of \$250,000 to the United States Olympic Committee, with a goal of raising \$1,000,000 on their behalf.

Each bag of Vigoro product purchased between now and the conclusion of the 1992 Olympic games will result in an ad-ditional financial contribution to the USOC.

PGMS Nominates Officers, Directors

Nominated officers for the Professional Grounds Management Society are: John Abernethy Jr., cemeteries and grounds superintendent of Lenoir, N.C., president; John Michalko, superintendent of land-scaping and grounds, Case Western Re-serve University, Cleveland, first vice president; Bob Rubel, Rubel's Landscape Services, Fort Worth, Texas, second vice president; Steve Chapman, grounds man-ager, Digital Equipment Corp., Salem, N.H., treasurer; Gary Dickinson, senior groundskeeper, Blue Cross/Blue Shield, North Haven, Conn., northeast regional director; Steve Wharton, Steve's Land-



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USE READER SERVICE #41

scaping Co., Fort Worth, Texas, southwest regional director; Edwin Fenwick, Ned's Lawn and Tree Service, Boulder, Colo., and Bradley Ziemann, grounds manager, Federal National Mortgage Assoc., Washington, D.C., directors-at-large.

Officers and directors will be announced at the Green Industry Expo.

Recertification Credits Offered at OSU Seminar

The Ohio State University lawn care seminar will be held Jan. 29-30 at the Holiday Inn on the Lane, Columbus, Ohio.

The seminar will emphasize the principles of agronomy, entomology and plant pathology and is designed for lawn care operators, landscape maintenance supervisors and their employees.

Attendees will earn recertification credits from the Ohio Department of Agriculture for licensed pesticide applicators. Registration fee is \$135. Enrollment is limited.

For course content information, contact Sue White, 614/292-7457; for registration, contact the Department of Conferences and Institutes, 614/292-4230.

Can Athletic Turf Stand Up To Pounding?

In an effort to establish standards for natural grass on athletic fields, Dave Minner, turf researcher at the University of Missouri-Columbia, pounds and rips natural grass turf, using machines that would make a couple of 300-pound tackles proud.

"We want safe, tough turf," Minner said as he watched a Brinkman traffic simulator, better known as "the iron football player," tear with its cleated rollers.

"This machine simulates a couple of hefty linemen going at each other," Minner said. "It tells us what type of grass systems are tougher and are less likely to blow out as players make their sharp cuts and turns."

A machine measuring surface traction and a "vibration analyzer" reporting how hard the ground is are also being used in the study.

"We have the grasses. Now we're looking at the best ways to manage those grasses and the best kind of 'soil' that will make the turf stand up to the pounding of athletes while saving wear and tear on their joints."

Newer football fields have high sand content to provide good drainage. But the sand is somewhat unstable — especially if the grass is worn thin.

"We are now adding synthetic fibers to make the sand more stable and to reduce divots, rips and tears," Minner said.

"On fields that have heavy clay soils, we are using synthetic fibers and chopped rubber tires to increase resiliency and to reduce wear."

One of his goals is to find fibers that can fortify the strength of a healthy grass root system.

One of the products he studies is crumb rubber — old tires chipped into one-fourth-inch crumbs — that improves drainage, reduces compaction and provides surface cushion. The fibers and mesh element reduce shearing of the surface and provide improved footing for quick turns.

"Sports-turf management could become the United States' third million-dollar turf-grass industry," Minner said. Golf course and lawn care industries have already made the billion-dollar mark.

He estimated 9,000 sports fields in Missouri schools and parks could create many markets for turf management techniques. ■

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USE READER SERVICE #43

Industry Viewpoint

CAPITALIZING ON THE GREEN MARKETING REVOLUTION



Nuzum

PUBLIC concern about the environmental safety of lawn care services has recently been heightened, and there is no reason to expect the public spotlight to shift. In fact, most green industry experts predict increased public scrutiny. But rather than look at environmental attention as a threat to business, lawn maintenance providers should capitalize on the new marketing opportunities it creates.

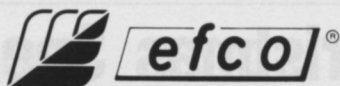
Professional contractors should start by

understanding who the new "green" consumer is. Studies show that people who will actually change their buying habits because of environmental concerns fit the same profile as the traditional lawn care customer. They are generally well-educated, upper-income suburbanites, often in two-career families with little time to devote to lawn maintenance.

Many of today's consumers want to do their part to "save the earth," and are becoming increasingly conscious about new products and services available to them without sacrificing performance or convenience. As an option for these customers, professional lawn maintenance operators

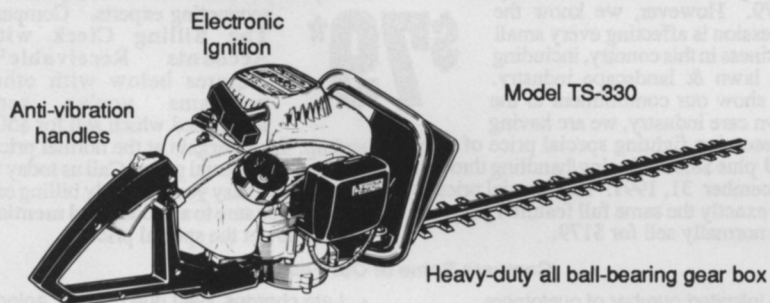
may think about offering organic-based programs as an alternative service category that is both timely and potentially lucrative.

UNDERSTANDING TERMINOLOGY. Lawn maintenance operators who are mindful of current marketing trends will strategically position an organic-based program as a new choice for customers. Positioning organic-based programs as "new" rather than "better" avoids comparisons with conventional products and programs. It also does not undermine the customers' trust in the professional service that they have been receiving.



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USE READER SERVICE #45

Organic-based programs featuring the use of organic and organic-based "bridge products" can be introduced as the latest development in professional lawn service. With recent advances in fertilizer research and development, bridge products combine the advantages of natural, organic materials and moderate amounts of synthetic nutrients to form an "organic-based" fertilizer.

An *organic-base fertilizer*, as defined by a pending American Association of Plant Food Control Officials labeling rule is: "A fertilizer containing a minimum of 50 percent by weight of natural fertilizer materials and 50 percent by weight of primary nutrients which are derived from those organic fertilizer materials."

Related definitions may be useful to help develop a clearer understanding of other products and programs. Other definitions currently pending official approval from the AAPFCO include:

Natural organic fertilizer: Materials derived from either plant or animal products containing one or more elements (other than carbon, hydrogen and oxygen) which are essential for plant growth. These materials may be subjected to biological degradation processes under normal con-

ditions of aging, rainfall, sun-curing, air drying, composting, rotting, enzymatic or anaerobic/aerobic bacterial action or any combination of these.

These materials may not be mixed with synthetic materials or changed in any physical or chemical manner from their initial state except by manipulation such as drying, cooking, chopping, grinding, shredding or pelletizing.

Natural inorganic fertilizer: A mineral nutrient source that exists in or is produced by nature and may be altered from its original state only by physical manipulation.

Natural fertilizer: A substance composed only of natural organic and/or inorganic fertilizer materials and natural fillers.

Natural base: A fertilizer containing a minimum of 50 percent by weight of natural fertilizer materials.

Organic base: A fertilizer containing a minimum of 50 percent by weight of organic fertilizer materials.

Natural base fertilizer: A fertilizer containing a minimum of 50 percent by weight of natural fertilizer materials and 50 percent by weight of primary nutrients which are derived from natural fertilizer materials.

Use of standard terminology when

referring to any lawn maintenance program will help foster better relations for the industry, and help eliminate confusion regarding misleading claims and unclear jargon such as "non-toxic," "safe" and "healthy."

The Professional Lawn Care Association of America recommends that lawn maintenance companies consistently and carefully use standard language in all communications with customers, the media and other audiences.

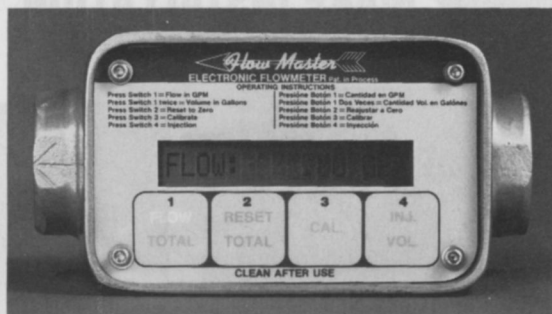
GETTING THE WORD OUT. Now that organic-based fertilizer programs are available, lawn maintenance professionals have the opportunity to deliver these benefits to their customer base desiring alternatives.

Look to manufacturers, industry organizations and trade publications for promotional ideas and materials including fliers, brochures, articles, newsletters and even billing inserts.

You can also tap into the PLCAA's National Lawn Care Month in April with promotional activities, including presentations to civic groups and garden clubs which will help pass along your news. — *J. Mark Nuzum, president of Harmony Products, Chesapeake, Va.*

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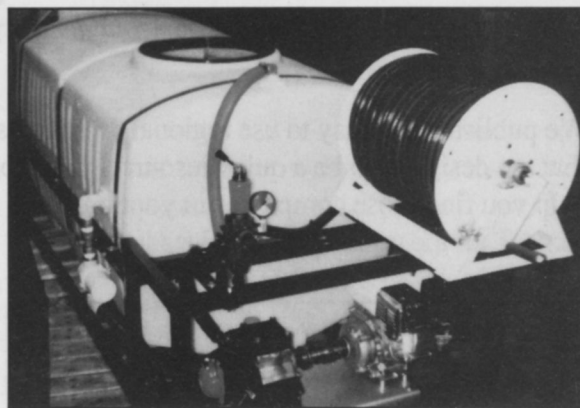
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"EVERYTHING FOR THE LAWN MAINTENANCE INDUSTRY"

USE READER SERVICE #47

Association News

THE REGISTRY RESORT in Naples, Fla., will host the second annual Executive Forum, sponsored by the **Associated Landscape Contractors of America**.

The forum, held Jan. 26-29, provides business leaders from throughout the landscape contracting industry with the opportunity to network and learn from the successes and experiences of their colleagues. Targeted discussion groups will encourage large and small businesses to share ideas and discuss business trends.

This year's forum will focus on quality management systems. Attendees in each group come from companies of similar size and income and can share strategies for an improved bottom line.

Reservations are available now. Special rates will be given to those registering before Jan. 1.

The San Diego Zoo, Southern California Edison and *Sunset* magazine are this year's recipients of the **California Landscape Contractors Association** Landscape

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Enhancement Awards. CLCA honors those companies that most successfully enhance the environment through landscaping.

The awards will be presented during CLCA's annual convention Nov. 15 at the San Diego Hilton Beach & Tennis Resort. Winners will also be announced for the 36th annual Trophy Awards Program, which is expected to draw more than 200

entries in 28 categories — 20 in landscape installation and eight in maintenance. Additionally, eight special awards are given for best overall projects.

The 1991-92 *Directory and Buyer's Guide* is now available from the **Oregon Association of Nurserymen**. The 29th edition includes more than 13,000 plant, product

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and service listings from Northwest growers and from North American industry companies.

The 362-page book is divided into two main sections: a directory of members and a buyer's guide. The directory section lists OAN members and chapters as well as Northwest university, extension and agricultural personnel. It also features expanded national nursery association and related society reference pages.

The buyer's guide section contains plant listings from Northwest nurseries, and supplies and service listings from manufacturers. All information has been updated for this edition.

The book is available by mail for a \$5 fee to cover postage and handling. There is no charge for the book if obtained in person at the OAN office or at trade shows.

Educational sessions and workshops have been announced for the **Ohio Turf Foundation's** Conference and Show, in Cincinnati, Dec. 2-5.

A full day of education will be devoted to lawn care, including new chemical herbicides, the timing of applications and the effect of post-herbicide irrigation.

The weather's influence on insect control strategies will also be discussed, as well as factors affecting the off-target movement of pesticides. Additionally, a regulatory activity update and suggestions for dealing with the public will be shared.

Four educational sessions are also planned on budgeting. "What Gets Cut," presented by Ed Wandtke, considers budgeting during lean times. Another workshop takes participants through proper bidding procedures.

Finally, nine workshops and symposiums stressing group participation are planned on such diverse topics as employee motivation, plant selection, organic fertilizers and composting.

Frank Kearney of Downham Nursery Co., Ontario, Canada, has been elected the 17th president of the **Horticultural Research Institute**. Kearney and other officers were elected recently during the HRI Board and Trustees meeting at the American Association of Nurserymen's 116th annual Convention & Nursery Industry Exposition in Orlando, Fla.

Robert Moore, Monrovia Nursery Co., was voted vice president; and Richard VanLandingham, Wight Nurseries, Cairo,

Ga., was voted treasurer.

Newly elected to HRI's executive committee is Patricia Bigelow-DeCiccio, vice president of Bigelow Nurseries in Northboro, Mass. Tom Pinney Jr., Evergreen Nursery Co., Wis., became HRI's immediate past president.

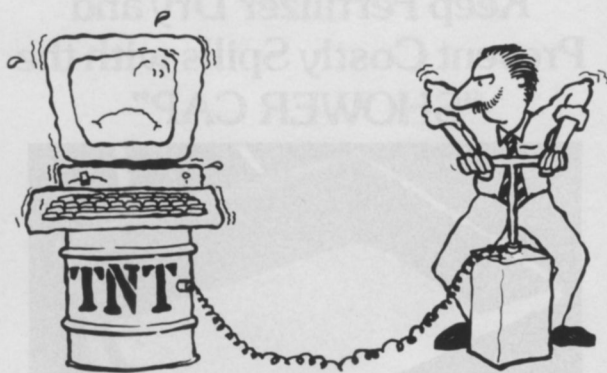
The HRI is the research division of the AAN.

"Balancing the Scales" between the environment and the economy is the theme of the sixth annual **Desert Turfgrass and Landscape Conference and Show**, which is slated for Caesars Palace in Las Vegas, Dec. 11-13.

More than 1,100 lawn and landscape maintenance contractors attended last year's show, and sponsors hope to top those figures this year.

A variety of educational sessions will run concurrently during the three-day conference and focus on turf, maintenance and landscape construction and design. Topics include "Preemergent Herbicides for Landscape Maintenance," "Maintaining School Athletic Fields" and "Winterizing the Landscape."

The annual awards luncheon is Thursday, Dec. 12. ■



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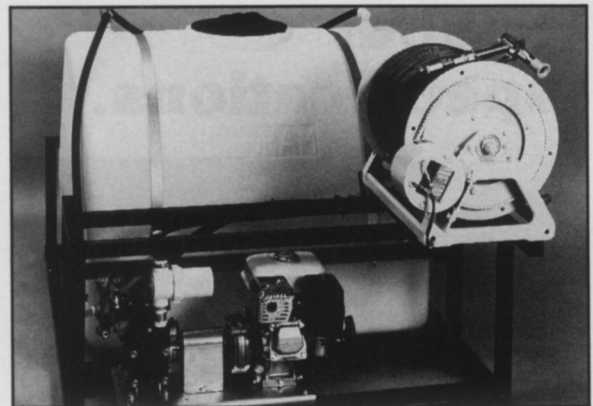
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"EVERYTHING FOR THE LAWN MAINTENANCE INDUSTRY"

USE READER SERVICE #52

USE READER SERVICE #53

Irrigation News

Plan Ahead For Certification Testing

INTERESTED IN irrigation certification? Better plan ahead. Several steps are required before an individual becomes a Certified Irrigation Contractor.

Certification programs were established by the The Irrigation Association Certification Board of Governors to promote national recognition of irrigation specialists. The exams are designed to meet standards of validity, reliability and difficulty. Certification indicates an individual has:

- a minimum of three years of irrigation-related experience
- successfully passed a series of written examinations covering both general irrigation subjects and specialty areas
- and has agreed to follow a specific code of ethics established by the Certification Board of Governors.

The IA certification is a three-step process that begins with application. Applica-

nts must meet the requirements of at least one year of work experience in an irrigation-related field. The IA will send exam registration information upon acceptance of the application.

Step Two is the irrigation industry examination, and registrants must submit their registration forms at least 60 days before the scheduled examination date. A passing score on the general exam is required to move onto the final step.

Step Three is the certification exam. This requires the completion of Step Two; and a minimum of three years documented irrigation-related experience, or a minimum of two years irrigation-related experience and 60 points, awarded from various college and university courses, manufacturer's courses and IA-approved short courses.

Fee requirements, application information and all other requirements can be obtained from Denise Harlow, Irrigation Association, 1911 N. Fort Myer Drive #1009, Arlington, Va. 22209; 703/524-1200.

Program Honors Water Management

Eight landscape and irrigation projects have been recognized as the first recipients of the National Care Awards, a program designed to recognize outstanding achievements in water management. Rain Bird introduced the program earlier this year.

Winners include:

- Busch Gardens, Tampa, Fla.: Owner/Developer and Landscape Architect, Busch Gardens; Irrigation Designer, Delta Corp.; Irrigation Consultant, Frank R. Morrison Inc.
- City of Fort Collins (Utility Service Center), Fort Collins, Colo.: Owner/Developer, City of Fort Collins; Landscape Architect, Cityscape Urban Designs Inc.; Irrigation Designer, Aqua Engineering.
- City of Pueblo (Parks and Schools), Pueblo, Colo.: Owner/Developer, Land-

(continued on page 22)

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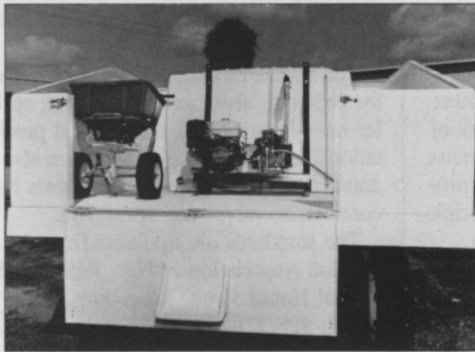
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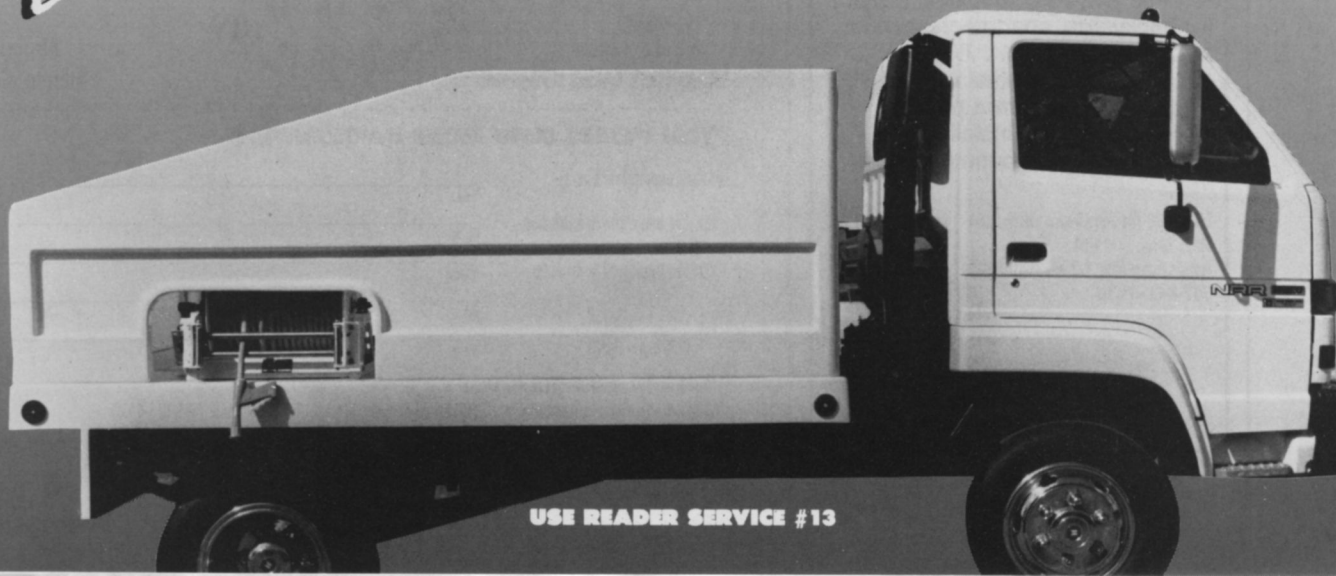
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USE READER SERVICE #13

Irrigation News

(continued from page 20)

scape Architect and Irrigation Designer, City of Pueblo.

- Coto de Caza, (master-planned community), Orange County, Calif.: Owner/Developer, Coto de Caza, Ltd.; Landscape Architect and Irrigation Designer, Clark and Green Associates.
- IBM Office Complex, Austin, Texas: Owner/Developer: Prentice Properties/IBM; Landscape Architect, CRSS Architects Inc.; Irrigation Designer, Irrigation Technologies Inc.
- Smithsonian Institute, Washington, D.C.: Owner/Developer and Landscape Architect, Smithsonian Institute; Irrigation Designer, Eastern Irrigation Consultants.
- Tatum Ranch (master-planned community), Phoenix, Ariz.: Owner/Developer, SunCor Development Co.; Landscape Architect, C.F. Shuler Inc.; Irrigation Designer, Coates Irrigation Consultants Inc.
- Weston (master-planned community), Fort Lauderdale, Fla.: Owner/Developer, Landscape Architect and Irrigation Designer, Arvida/JMB Partners.

Entries are reviewed twice a year by an independent panel of irrigation profession-

als from the academic and non-profit communities. This year's judges were:

Gary Robinette, director of the Landscape Architectural Program at the University of Texas at Arlington; Robert Walker, P.E., professor in the Agricultural Engineering Department at California State Polytechnic University in San Luis Obispo; Douglas Welsh, Ph.D., extension horticulturist at Texas A & M University in College Station; William Winslow III, associate professor of landscape architecture at Kansas State University in Manhattan, Kan.; and Raymond Uecker, FASLA, executive director of the National Xeriscape Council in Roswell, Ga.

The award program is not a competition. Any project that meets the program's established criteria is eligible for an award. That criteria includes the proper use of water management products, thoughtful and appropriate system design to meet a site's individual requirements and use of water management schedules and programs.

For more information on the award program or criteria, contact Rain Bird Sprinkler Mfg. Corp., Commercial Division, 155 North Grand Ave., Glendora, Calif. 91740, Attn. Care Award Program; or call 800/458-3005.

Women Honored For Excellence

The YWCA of San Gabriel Valley has selected eight Rain Bird employees as "Women of Achievement."

Honorees include: Jenny White, Vickie Richardson, Katherine Plisko, Leslie Collins, Judy Jaranek, Barbara Joyce, Bonnie Thomas and Kerrie Gross.

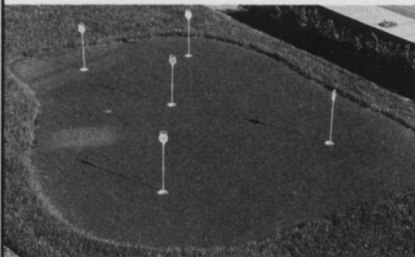
Irrigation Design Standards Offered

The Irrigation Association of New Jersey has compiled minimum design standards for water conservation in landscape and irrigation systems.

The standards detail design requirements for pressure, separate zoning areas, sprinkler head location and spacing and precipitation rates. Plan requirements are also detailed, as are equipment standards for controllers, valves and sprinklers.

The standards are available from the Irrigation Association of New Jersey, 285 School House Road, Jamesburg, N.J. 08831; 908/521-2333. ■

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Landscape News

EAR PROTECTION LEADS TO FEWER JOB-RELATED INJURIES

SO OFTEN WE hear things we don't want to hear — a clap of thunder signaling a storm, the phone call that could be bad news or the screaming of a siren.

But what if we couldn't hear those sounds at all? Living in a world without sound can be difficult — and even dangerous.

Having a healthy set of ears in most jobs is imperative. Employees who are protected from job-related noise have fewer injuries. But a worker who can't hear certain sounds may not be able to hear a worker's cry for help or a piece of faulty equipment — sounds that can determine a worker's safety.

It has been proven that prolonged ex-



When exposed to loud noise on the job, ear protection is vital.

posure to noise above 90 decibels can cause hearing loss. So regulations have been set up to protect the hearing of

workers exposed to loud noises.

According to regulations issued by the Occupational Safety and Health Administration, an employer must administer a continuing, effective hearing conservation program whenever employee noise exposures exceed an eight-hour, time-weighted average (TWA) sound level of 85 decibels.

Today, more than 20 million Americans are exposed to hazardous noise on and off the job. But The Davey Tree Expert Co., Kent, Ohio, stresses health and safety as top priorities.

Davey provides educational programs, ear protection and audiometric testing for all workers exposed to loud noise. Cor-

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- **CERTIFICATION** — You can become a Certified Grounds Manager by receiving a voluntary peer review of acceptable competence.
- **AWARDS** — Members are recognized for outstanding achievements in grounds management in the Annual Grounds Maintenance Awards Contest.
- **NEWSLETTER** — A newsletter is mailed monthly to keep members current on the affairs of the Society and the latest developments critical to successful grounds management. Personnel and position vacancy notices are also listed to create employment opportunities.
- **SURVEY INFORMATION** — The Society conducts research on operational practices. These surveys are made available to members only.
- **GUIDELINE PUBLICATIONS** — AVAILABLE FREE TO ALL MEMBERS:
 - *Grounds Maintenance Estimating Guide* — To assist you in total cost job estimating.
 - *Grounds Maintenance Management Guidelines* — Now available to assist you in management.
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Clip and Mail to: **PROFESSIONAL GROUNDS MANAGEMENT SOCIETY**
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porate Risk Manager Ron Cole said the intent of the hearing conservation program is to spot a potential problem before a person has an irreversible hearing loss.

"An older employee with a hearing loss at the high end of the frequency may not hear their spouse or the phone at a frequency of 3,000 Hz," Cole said. "When workers say that noise doesn't bother them — well, they just don't hear it anymore."

It is important to understand how the ear works in order to discover how hearing loss occurs. The ear lobe collects

sound energy and funnels it to the eardrum and the middle ear, where it changes from mechanical vibrations and enters the fluid-filled inner ear. Thousands of hair-like nerve cells transform the mechanical energy into electrical impulses that the brain interprets as sound.

There are two kinds of hearing loss. Conductive loss — mechanical loss — can be caused by a variety of traumas to the ear, such as childhood diseases or a ruptured eardrum. With conductive hearing loss, there is a possibility hearing can be

recovered through surgery.

But sensorineural loss — electrical loss — is caused by unprotected exposure to loud noises. It may take years to develop a noise-induced hearing loss, but once it's gone, it's gone forever.

A temporary, noise-induced hearing loss occurs due to temporary exposure to noise above 90 decibels. A person who has just attended a loud rock concert may know the sensation of a buzzing in the ears and muffled sounds. But a person who has not used hearing protection and has been exposed to loud and prolonged noise above 90 decibels will experience a permanent hearing loss.

The hair-like nerve endings on the inner ear become damaged and cannot bounce back to the normal receptor position, like blades of grass that have been stepped on repeatedly. A permanent, noise-induced hearing loss is not medically recoverable.

Davey's hearing conservation program, which has been in effect since 1984, is designed to protect the hearing of Davey employees. The first part of the program involves awareness and education. Workers are taught the proper use and care of ear protection and the dangers of noise through on-site training by their supervisors and supplementary newsletters.

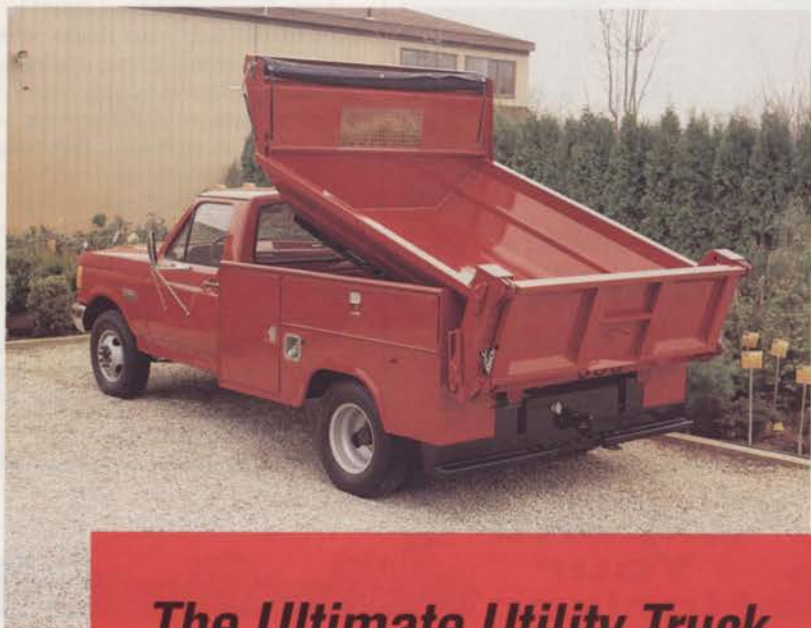
They learn to protect their hearing all the time — not just when they are at work. The employees watch an instructional video to learn how hearing loss occurs and how it can be avoided.

The second part of the program is testing the workplace by a sound level meter, which determines the noise level in the work area. Individual noise dosage on the job site is computed by the dosimeter, which acts like an ear. The dosimeter calculates the noise exposure over the entire work shift.

Workers who are exposed to noise levels at or above 85 decibels for eight or more hours must wear hearing protection, either ear plugs or ear muffs. These types of ear protection are not designed to totally eliminate all sound — they just reduce the noise to a safe level while providing the ability to communicate.

The final step of the hearing conservation program is establishing an employee's baseline hearing with an audiogram to determine if a hearing problem already exists. High Point Audiological Associates of High Point, N.C., has the capacity to test 24 employees an hour, four at a time in their mobile unit.

The results of the baseline tests are analyzed and then compared to future annual audiograms. A standard threshold shift has occurred when the hearing threshold has changed by an average of 10 decibels or more in either ear at 2,000, 3,000 or 4,000 Hz. ■



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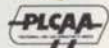
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STRATEGIC

Just a year ago, the industry was anticipating the success — or failure — of the allied trade show hosted by three national associations. Today, the lawn and landscape maintenance industry has much to reflect on resulting in a giant step forward in cooperation.

By Cindy Code

*That's one small step for a man, one giant leap for mankind.
— Neal Armstrong. 1969*

WHEN NEAL ARMSTRONG made this pronouncement 22 years ago as he first stepped onto the moon, he knew he was entering uncharted territory. His mission opened the door for the future of space exploration.

A little closer to home are the dramatic developments unveiled in the green industry in the past year. The steps taken and doors opened are just a beginning, but important advancements for the future of the landscape infrastructure.

Since the initiation of the Green Industry Expo, a national trade show linking the Associated Landscape Contractors of America, the Professional Lawn Care Association of America and the Professional Grounds Management Society, the three groups have shared a tumultuous, but decidedly beneficial relationship leading to countless opportunities.

Whatever the force behind this and subsequent cooperative events, the green industry has taken a giant leap toward increased understanding and harmony. Inter- and intra-industry cooperation such as national coalitions; alliances between and among national, state and local associations; and efforts to promote the value of the landscape; have taken on a consistent rather than sporadic nature. And the industry has a lot to show for its grass roots efforts:

The New Alliance: Attempting to shed the widely held dis-

ALLIANCES

regard various industry practitioners have held for one another, a group of landscape contractors, landscape architects, growers, arborists and managers developed a new alliance with cooperation its mission. This long-awaited understanding is intended to result in increased communication and national standards among various green industry segments.

Responsible Industry for a Sound Environment: One year after its inception, RISE boasts a membership of more than 50 corporations and associations and represents a cross-section of the industry from the manufacturer all the way to the associations representing the end users.

ALCA/AAN link: Earlier this year, ALCA and the American Association of Nurserymen announced a plan to unite legislatively — an agreement which has AAN providing legislative consulting services for ALCA. When lobbying on the Hill, AAN now speaks on behalf of ALCA's 1,200 members, as well as its more than 3,000 members.

The two groups recently held a joint legislative day in Washington, D.C., which drew double the crowd anticipated.

GIE Commitment: After ironing out their differences, ALCA, PLCAA and PGMS came to terms on an agreement that will keep the show going through 1994.

Coalition for a Sensible Pesticide Policy: RISE and 19 other associations formed a steering committee within days of the Supreme Court ruling, which in essence gave municipalities the right to enact their own pesticide restrictions. What resulted

was CSPP, one of the largest industry coalitions with about 140 national, state and regional associations representing thousands of businesses.

Capitol Line: About 15 PLCAA member companies and PLCAA itself all contributed to the hiring of a lobbying group on Capitol Hill to represent the interests of the chemical lawn maintenance industry. In addition to seeking an answer to the Supreme Court ruling, PLCAA (through Capitol Line), the National Pest Control Association and others are striving for a workable solution to the lawn care bill proposed last spring by Sens. Joseph Lieberman, D-Conn., and Harry Reid, D-Nev.

Urban Land Institute Study: Patterned after a Dallas/Fort Worth-area survey investigating why firms select one office complex for leasing over another, a new nationwide study will attempt to validate the value of landscaping as it relates to commercial real estate values.

The impressive list goes on. In a day and age when the Berlin Wall came down and the Communist Bloc continues to dwindle, the green industry managed a few coups of its own.

Few can disagree with the value of this cooperation, but what prompted it? Until now, various green industry segments had been content to practice their individual services on their own. So again, what spurred the industry into action?

"Alliances and coalitions are the only way to go," said Norman Goldenberg, chairman of PLCAA's and NPCA's respective legislative affairs committees. "We're seeing a tremendous

amount of cooperation; it's been a long time in coming."

Goldenberg said the wave of unity never took place before because the industry never coalesced in its efforts. The groups weren't hostile toward one another; nothing ever brought them together.

"We have a lot of common problems as well as challenges and opportunities. We concluded it's the only way to have a bright future and address the problems the best we can," said Joel Albizo, director of public relations for AAN. "Associations are a lot like businesses. We're responsive to the needs of the marketplace — a changing marketplace at that."

"There's no obstacles as to how far we can go (with cooperation)," said Ann McClure, executive vice president of PLCAA. "Challenges will present themselves as we go. Everything is doable, we just have to find a way to do it."

That's promising news particularly in a dynamic industry stressed by environmental and economic change. Over the next few years, these developments are sure to shift an already evolving marketplace. Just four years ago, attention to environmental issues was gaining momentum, but had not yet peaked. Today, environmentalism is a mass movement, according to a 1990 Roper report.

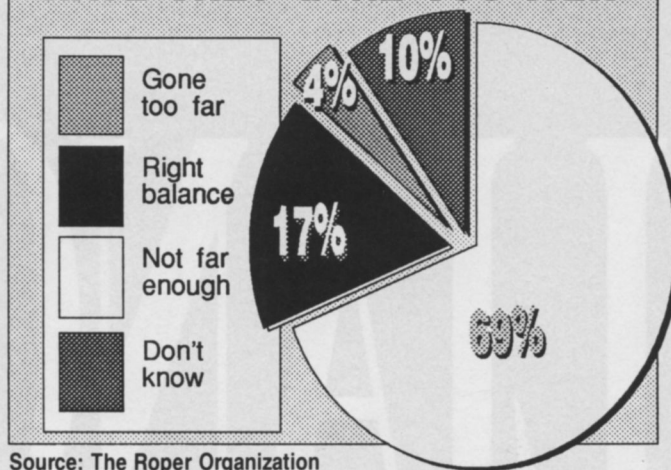
In its study, Roper found that most Americans place the environment high on the national agenda of public problems. About 78 percent of the public, up from 56 percent in 1987, believes that the nation should make a major effort to improve the quality of the environment. This increase of 22 percentage points is by far the biggest change in public opinion of all issues measured by Roper.

Americans' strong support for greater government intervention is further indicated by their willingness to see specific pro-environmental regulations enacted despite personal inconvenience or extra cost.

This change reflects growing public anxieties and is a good indicator to landscape professionals to heed, and better yet, take advantage of the green marketing revolution.

But remember, all customers are not alike. While public anxieties may be rising, public involvement in a range of environ-

ENVIRONMENTAL LAWS AND REGULATIONS: HAVE THEY GONE TOO FAR?



Source: The Roper Organization

mentally friendly programs — and a willingness to make personal trade-offs to improve the environment — is said to be relatively low.

Some people are actively pursuing a wide range of environmentally friendly practices while others are waiting to support them or convert to green products when the time is right.

As the issues, people and products making up the landscape profession continue to shake out, a united front within the various segments of the green industry will only serve to strengthen the individual players as well as the overall impression of the entire service industry.

"Just five years ago, things like the New Alliance wouldn't have

PGMS recently developed an alliance with the Midwest Association of Physical Plant Administrators for a two-day educational conference next summer. The Midwest group is one of six such regional organizations across the country. If all goes well, similar arrangements might be worked out with other regions for future educational opportunities.

NEW ALLIANCE. Impressive by all standards, not to mention surprising, is the new affiliation between an assortment of green industry groups whose desires to break long-established barriers have brought them together.

Initiated by the American Society of Landscape Architects, and whole-heartedly endorsed by

"Challenges will present themselves as we go. Everything is doable, we just have to find a way to do it."

been possible," said Debra Dennis, executive director of ALCA. "Various associations are now lending themselves to openness.

"Egos are not a problem, everyone benefits no matter what size your organization is. Whenever we can coordinate projects, just like GIE, everyone benefits, especially the membership."

Allan Shulder, executive director of PGMS, agreed, saying the industry has taken a positive step forward, progress he hopes will undoubtedly continue.

ALCA, AAN, PGMS and others, the group is actively pursuing a national set of standards linking the landscape contractor, property manager, grower, landscape architect and irrigation contractor — a potpourri of anyone and everyone who is involved in the landscape process.

The New Alliance was formed about 18 months ago to help the industry increase professionalism and profitability. It's also an opportunity to share frustrations, problems, remedies and solutions

common to the green industry. If all goes according to plan, national standards that help define quality and professionalism, both at the personnel and materials level, will be developed.

A common theme stemming from panel discussions held at AAN's national convention and last month at ASLA's national meeting, is that landscape architects, project managers and maintenance contractors can't do business without one another — so why not work together? Landscape architects need a better understanding of what's happening during installation and maintenance, landscape contractors need a better understanding of nursery considerations and so on.

Professionals need to discover ways to help one another provide better goods and services. For instance, if landscape architects and landscape contractors visited their local growers, they would gain a better understanding of what to specify and how far in advance to order material.

In addition, the grower needs to communicate to potential specifiers and buyers what will be available and when.

"The fact that we can get up here and discuss our differences is a coup in itself," said Dennis McCloskey, AAN vice president. "We all have these pet things that we think will make our business more profitable. But we know we can't do everything at once. We need to concentrate on things we can do."

Communication, education and the design process are central issues. A number of recommendations were formulated by the group, including:

- Schools on all levels should begin cross education to support professional partnerships in the green industry.

- Schools and associations should review recommended curriculum established by industry associations.

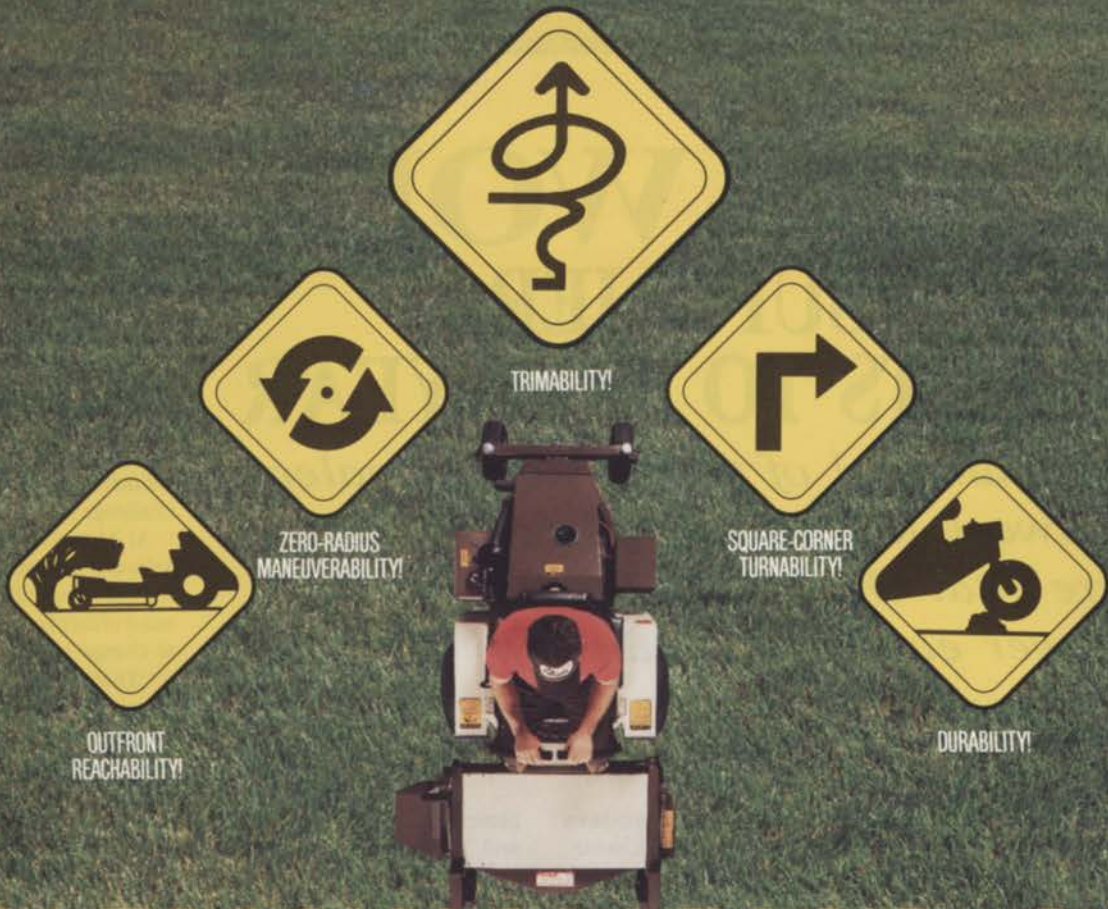
- The education of public officials is critical.

- Green industry businesses need to educate the public about the ramifications of the design and installation of plant material.

- The green industry needs to begin preparing people for the environmental changes arising over the next 10 years.

- Business projects need to in-

(continued on page 100)



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USE READER SERVICE #26

SALES WOES TURN SUPPLIER SIGHTS TO NEW YEAR

The survival of the servicing-dealer network and increased consolidation are vital challenges for the outdoor power equipment industry.

By Julie A. Evans

DESPITE A LINGERING recession and a year of less than remarkable sales achievements, manufacturers of outdoor power equipment are optimistic about 1992 sales to the landscape industry.

Lawn & Landscape Maintenance magazine recently surveyed major manufacturers in the commercial landscape market and found that 84 percent anticipate increased sales in 1992, as compared to 1991.

Much of the optimism stems from an anticipated upswing in the country's economic outlook. In fact, the economy ranked highest among factors influencing sales in 1992. However, other factors, such as new product introductions, business restructuring and intensified marketing efforts, are also expected to clear the muddy sales outlook.

"The economy is relatively flat across the board, but it would be unusual not to see a jump start in the economy, being that next year is election year," said Dennis Dix, executive director of the Outdoor Power Equipment Institute, Old Town Alexandria, Va. "Companies seem to be lean in personnel and inventories have been reduced, so anything the government does, industry should be in a good position to capitalize on those incentives."

Bob Brophy, manager, lawn care sales for Cushman, Lincoln, Neb., said that most companies are planning for increased business in 1992, but cautioned that the business climate remains soft. In response to market conditions, the commercial equipment market is seeing increased consolidation, and smaller businesses are finding it more difficult to remain competitive, he said.

"The smaller companies are finding it harder and harder to find a niche to fit into. The larger com-

panies are filling them," Brophy said. "In the '90s, the larger companies are going to be like an umbrella covering all aspects of the business, with very few niches left unaddressed. The smaller manufacturers are getting absorbed by the bigger ones."

John Smith, president of Exmark Manufacturing, Beatrice, Neb., also noted a trend toward industry consolidation. "Due to the glut of competition, it appears all segments of our industry — manufacturer, distributor, dealer

and commercial user — are experiencing the challenges associated with overcapacity," he said.

"Developing appropriate business strategies and tactics to maintain growth and profitability through a resulting period of consolidation will be the number one challenge for most businesses."

Al Money, vice president of sales and marketing for the Buntion Co., Louisville, Ky., expects many of the players in the industry to change in upcoming years.

"There are several manufacturers competing for a small amount of business. Only a few players are going to be able to withstand the challenges," he said. "Housing starts are down, major portions of the country are experiencing bad economic times, warehouses are clogged.

"There are too many manufacturers trying to sell too few units. They can only go to a price war so far before they start shooting themselves in the foot."

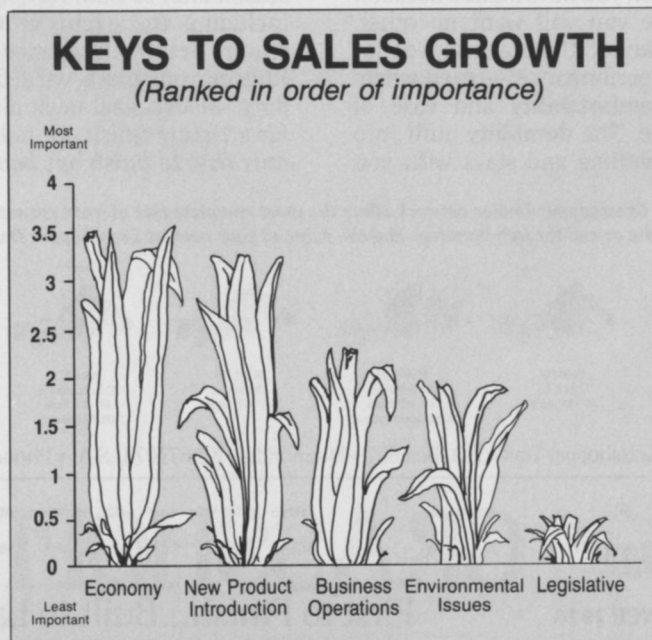
Money said that diversification is one answer to remaining an industry leader.

"Creative marketing" and personalized service are also answers to economic survival, especially as manufacturers and dealers face competition from mass merchandisers, said Chris Sharp, manager, dealer and special markets for Yazoo Manufacturing Co., Jackson, Miss.

"Small business are having a hard time making money. We're seeing changes in how goods are distributed and how businesses conduct themselves in a profitable manner," Sharp said.

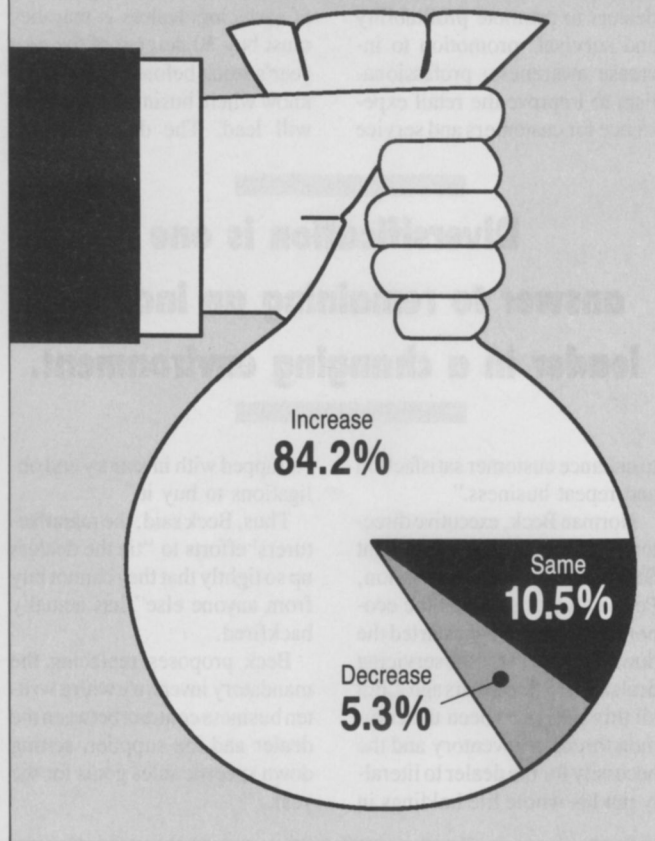
"Creative marketers will be the ones who are successful. They take themselves and their product and market them as value."

COMMERCIAL GROWTH. Small businesses are not the only ones streamlining operations and examining marketing strategies. Larger companies are trying to maintain and improve market share, as the commercial equip-



1992 SALES PROJECTIONS

(Expected change from 1991)



ment segment becomes an increasingly lucrative outlet for their goods.

According to a report just released by Business Trend Analysts, a market research firm in Commack, N.J., total sales for lawn, garden and snow equipment are expected to reach \$5.7 billion in 1991 and grow to \$10.8 billion in 2000. Sales of equipment to the commercial market accounted for \$729.7 million in 1991, and could reach \$1.8 billion by 2000, according to the study.

Although the consumer segment clearly accounts for the majority of sales of lawn and garden equipment, manufacturers who cater to both markets are finding the commercial segment increasingly attractive. In fact, nearly 100 percent of survey respondents expect the commercial segment to grow faster than the consumer segment.

BTA statistics support this position. The firm projects that commercial equipment sales will expand at an average rate of 10.5 percent from 1991 to 2000, as compared to 7.3 percent for consumer equipment sales.

The firm further projects that the commercial market will expand its market share from 14 percent to 17 percent.

For the landscape contractor, these statistics could translate into dollars and cents. Enhanced service, competitive pricing and

improved product offerings may result, as manufacturers scramble for a piece of the profit pie.

ENVIRONMENTAL CONSIDERATIONS. The environment continues to influence equipment sales to the commercial market, for better or for worse. According to BTA, sales are expected to increase for waste reduction products, such as mulching mowers, chippers and shredders and irrigation systems.

"The equipment segment is going to benefit as they incorporate more legislation that requires any

means of mechanical grooming that enhances the growth of grass rather than chemical controls," noted Brophy.

On the other hand, sales of certain gas-powered equipment could be hurt by increasing environmental regulations, such as emissions and noise standards. The jury is still out as to what extent such regulations will have on sales; however, many manufacturers believe that prices could increase on those products to compensate for costly emissions-reducing technology (see *LLM*, July, 1991).

Manufacturers appear to be taking environmental concerns very seriously and are introducing new products to meet changing needs.

For example, 56 percent of survey respondents said that mulching mowers will account for a significant portion of their businesses' sales in the future. Nearly 70 percent expected mulching mowers to be a significant part of sales for the industry.

Dick Tegtmeier, owner/CEO of Encore Manufacturing, listed grass clippings disposal as one of the most pressing concerns for the lawn and landscape maintenance industry, including manufacturers. "For the commercial cutter, new laws will force a major renovation of mowing with mulchers or another means of disposing of the massive tons of clippings," he said.

Bob Walker, president of Walker Manufacturing Co., Fort Collins, Colo., also targeted grass clippings disposal as an industry concern. "The biggest challenge is the grass clippings disposal issue. Mulching mowers are only a partial solution, and landscape contractors are facing a big challenge in adapting their operations to fit their local situation such as availability of composting and alternate disposal sites."

Not all manufacturers, however, agreed that mulching mowers will address the industry's

U.S. MANUFACTURERS' SALES OF LAWN, GARDEN AND SNOW EQUIPMENT BY MARKET SEGMENT (\$ MILLION)

YEAR	CONSUMER EQUIPMENT	AVERAGE ANNUAL % CHANGE	COMMERCIAL EQUIPMENT	AVERAGE ANNUAL % CHANGE	CONSUMER WATERING PRODUCTS	AVERAGE ANNUAL % CHANGE	CHAIN SAWS AND HAND TOOLS	AVERAGE ANNUAL % CHANGE
1982	\$2,248.3	—	\$237.8	—	\$423.6	—	\$438.4	—
1987	\$3,983.3	12.1	\$514.6	16.7	\$641.8	5.8	\$495.2	2.5
1991 E	\$3,760.2	-1.5	\$727.7	9.1	\$654.3	0.5	\$605.3	5.1
2000 P	\$7,109.2	7.3	\$1,799.0	10.5	\$1,098.1	5.9	\$827.9	3.5

E = Estimate P = Projection

Source: Business Trend Analysts

clippings disposal needs. Terry Richards, product manager/power tools, for Stihl, Virginia Beach, Va., said that in the long-term, "consumers will realize that mulching mowers don't really work."

Richards said that mulching mowers have several limitations. First, mulching mowers are difficult to use on wet grass. Also, the customer has to mow more frequently because the mulching mower is less effective with longer blades of grass, he said.

The solution may lie in improved technology, he said.

SERVICING DEALERS. When LLM survey respondents were asked to list challenges facing the lawn and landscape equipment market, many flagged the continuance of a healthy servicing-dealer network as an area of concern. Servicing dealers, it seems, are becoming an endangered species.

"Servicing dealers are going out of business at an alarming rate," said Joe Fahey, manager, dealer development and research for American Honda Motor Co.,

Duluth, Ga.

He cited three areas in which manufacturers need to work with dealers to promote profitability and survival: promotion to increase awareness, professionalism to improve the retail experience for customers and service

hock to buy next year's inventory."

Beck explained that the primary reason for the dwindling number of servicing dealers is that they must buy 80 percent of the next year's stock before they actually know where business conditions will lead. The dealer is then

"Once goals are set down, the dealer no longer needs that inventory because it's going to move if he meets his goals. 'If you don't perform, we get rid of you. If you do, we protect you.'"

Beck said that his association which represents 2,000 servicing dealers, has come up with recommendations for the written contract, but so far, no manufacturers are biting.

"We feel that two parties doing business with a firm goal can do business without being choked. The problem is, who's going to hold the inventory?"

But inventory is not the only problem that servicing dealers face, according to Beck. He said that competing dealerships are harmful to the dealers' community status.

"When a dealer is taking on a brand of product, he is recognized in his community as the agent. He makes an investment in that brand. But without a contract, the distributor or the manufacturer attempting to get more market share will open competing dealer-

(continued on page 38)

to enhance customer satisfaction and repeat business."

Norman Beck, executive director for the National Equipment Servicing Dealers Association, Peoria, Ariz., said that the economy and the drought started the downward trend for the servicing dealer two or three years ago. "But all through it has been the common thread of inventory and the necessity for the dealer to literally put his whole life holdings in

"strapped with inventory and obligations to buy it."

Thus, Beck said, the manufacturers' efforts to "tie the dealers up so tightly that they cannot buy from anyone else" has actually backfired.

Beck proposes replacing the mandatory inventory with a written business contract between the dealer and the supplier, setting down specific sales goals for the year.

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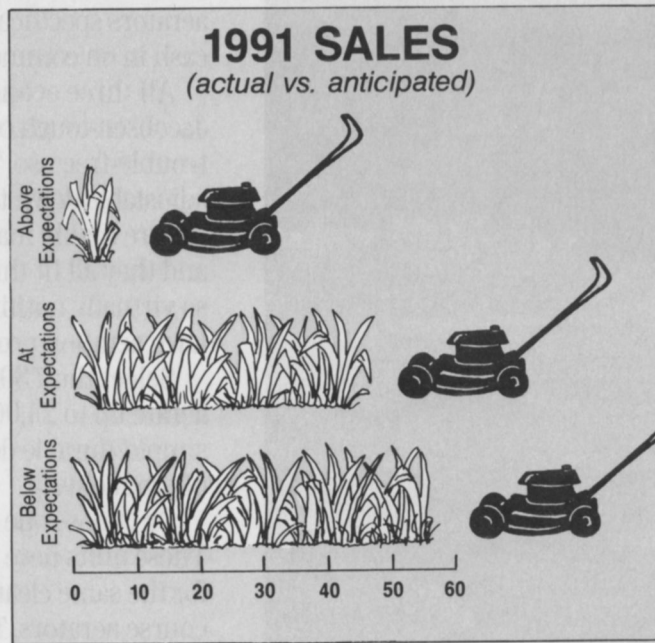
Sales Woes

(continued from page 36)

ships in that area. And this dealer who has made the investment is no longer recognized as the dealer in the area," Beck explained. "But if we had contracts, that dealer could be told that he's either not performing or could increase his performance before another dealership opens, or be given the opportunity to recognize that there is room for another dealership."

Beck said that the landscape contractor is in a good position to start doing business with the servicing dealer, who has quickly found the need to expand servicing capabilities to attract this market.

"In the past, many dealers weren't anxious to do business with landscapers because they (landscapers) needed immediate service. They needed charge accounts and equipment that small dealers normally don't handle. Now, the servicing dealer recognizes the need to expand his servicing facilities so he can expand sales opportunities."



Bunton's Money said that the solution to the servicing dealer's woes is a regional two-step distribution between the manufacturer, distributor and dealer.

In addition, Money said, manufacturers should give distributors a large geographical territory so

that dealers aren't stacked up against each other.

"Too many manufacturers are trying to set up dealerships across the street from each other. It forces the dealer to sell at cost and he's not making any profit," he said.

"What we're trying is a part-

nership between the dealer, the distributor and the manufacturer so that each one of the players is making a decent profit."

Two-step distribution is relatively new for Excel Industries, Hesston, Kan., according to Dave Welfelt, general sales manager. The company is expanding its efforts in this area because it has found the need for more localized distribution. In the process of seeking out new dealers, the company has found that the more financially stable servicing dealers are those with the largest percentage of commercial clientele.

"The dealers who have made a shift away from consumer to commercial are the ones remaining in business," he said.

Welfelt also acknowledged that high inventory is the "first thing that can cause a dealer to get into financial trouble. Also, mass merchandisers have put a lot of pressure on servicing dealers."

OTHER CONSIDERATIONS. Manufacturers and users of power equipment have both been squeezed

(continued on page 101)

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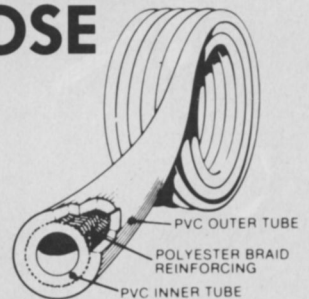
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SPECIALTY PESTICIDES: TACKLING A CHANGING ENVIRONMENT

Pesticide marketers and users are getting together on marrying application economies with concern for the environment.

By Bob Gitlin

BASIC PESTICIDE manufacturers and formulators in the specialty pesticide industry have faced hard facts and have been diligently working on more environmentally benign substances.

In commercial and residential environments, where customers are beginning to demand such alternatives, lawn and landscape maintenance contractors stand to benefit.

Faced with geographical differences, varying product desires and a recession which lags on — all which must be considered when marketing product — specialty product manufacturers have remained surprisingly optimistic.

David Duncan, manager of government affairs for Monsanto, St. Louis, Mo., this summer secured federal approval for a new pre- and postemergent herbicide called Dimension. "It is a new chemistry," he said, "which goes a long way to doing what the public is asking of us."

Despite its high unit activity (concentration/potency), Dimension poses no correlative threat of toxicity, he said. "Instead of 10 to 12 pounds of active ingredient per acre, we're looking at a quarter or half pound." The "user-friendly" pesticide controls annual grasses like foxtail, goose grass and crabgrass, and some broadleaf weeds.

Such innovations are heartening to government regulators and manufacturers scrambling to follow new regimens.

But even the environmentally conscious Duncan admits there's no replacement for 2,4-D. For postemergent broadleaf pests like clover and dandelion, much-maligned 2,4-D is the only thing that works. While there some day may be an alternative to 2,4-D, work continues in other areas, following new environmentalist mandates.

Mike Shaw, product development manager for turf and ornamentals at DowElanco, Indianapolis, Ind., is banking on non-phenoxy-based Confront to satisfy the needs of those applicators, particularly in more sensitive areas.

"The trend to more targeted applications — more spot treats — has been going on for years," Shaw said, "but the overall pesticide market continues to grow in the turf and ornamental business. The lawn care market is relatively flat, but it's still fairly steady. Our new products use existing chemistries. You won't see a lot of new chemistry marching into the marketplace in the next 10 years.

"There's more emphasis on products for beds and weed control, because hand weeding is expensive."

What does enter the fray is the tall marketing hurdle of development costs which must be passed on to the customer. A manufacturer spends from seven to 12 years, on average, and between \$30 million and \$50 million to bring a new pesticide to the marketplace.

Big breakthroughs in pesticide application will come in improve-

ments in formulation and application technology. The industry has room for efficiency improvements in such areas as reducing or targeting pests and reducing drift.

"Let's face it," Shaw said, "a lot of what we're doing out there is the same thing we did 20 years ago: throwing it out of rotary spreaders and backpack sprayers."

O.M. Scott & Sons, Marysville, Ohio, formulates mostly preemergent herbicides for lawn and landscape contractors. Among its postemergent product sales are herbicides containing 2,4-D. O.M. Scott also serves that market with a gamut of insecticides. And finally, turf growth regulators have opened up a growing market.

"TGRs are a big interest area," said Ron Gagne, commercial sales manager. "They're getting better accepted by the fine-turf grower."

Drought has hurt sales of pesticides to lawn maintenance operators in a number of areas across the United States not accustomed to being parched, like the Midwest, he added. "The homeowner's not going to pay for applications you can't water on top of."

O.M. Scott is negotiating with several manufacturers for new chemistry, including non-synthetic pesticide alternatives.

Sales of insecticides and fungicides to the lawn maintenance market have taken a decidedly different turn in recent years, according to Dan Meek, Midwest area manager, Mobay Corp., Kansas City, Mo.

"Lawn care people are all talking about how the trend is toward doing more curative treatments and fewer preventive," he said. "Don't treat until a pest is present — that's the motto."

Insecticides followed by fungicides represent the largest share of Mobay products to the lawn and landscape industry including Of-tanol, a subsurface insecticide primarily for grub control; and Dyllox, a turf insecticide for control of cutworms, sod webworms and white grubs.

ALTERNATIVE PRODUCTS. A long-time manufacturer of biologicals is Ringer Corp., Minneapolis, Minn. Its operation has recently swollen with the acquisition of Safer Inc., and a renewed interest in naturally based products, which have actually been around since the '70s, according to Scott Boutillier, commercial marketing director for Ringer.

Ringer also manufactures and markets insecticidal soaps to the lawn and landscape maintenance market.

The soap cuts the wax cuticle on soft-bodied insects. "Without that waxy cuticle on their exoskeleton," said the former entomology major, "they can't maintain their water balance, so they desiccate — dry out."

This innovation, Aphid-Mite Attack — made of potassium-based long-chain fatty acids — works on aphids, mites and other soft-bodied insects.

It's not known whether Ringer's Grub Attack, removed voluntarily from the market earlier this year, will be ready for the spring of '92.

Naturally based products are generally thought to cost more than synthetics, and are able only to target single pests rather than offer broad-spectrum control.

Boutilier counters: "If you have broad-spectrum infestation of aphids, mites, scales and mealybugs, you can take our soap and whack the whole gang. If you look at an integrated pest management approach to the use of insecticides, you never really want to use a broad-spectrum product anyway. You want to use products targeted for only the pests you have; you don't want to whack the beneficials like spiders, praying mantises and ladybird beetles."

What explains biologicals' greater cost?

"Their active ingredients tend not to be residual products," Boutilier said. "They have to be applied with a bit more frequency. Their timing of application tends to be a bit narrower than a standard, synthetic, traditional chemical insecticide. You have to monitor the pest populations more carefully — which in my mind is a very good thing, because then you're only applying when and what you need to."

This is in tune with today's move away from preventive, blanket applications toward targeted, curative applications. Using biologicals as "breathers" for synthetic pesticides can intensify

efficacy; overuse of any chemical insecticide unwittingly "selects" for insects that can withstand the attack, breeding resistance that increases from generation to generation, he said.

Ongoing research into alternative products will yield a number of new products in years to come. More recently, however, Ciba-Geigy this year is making its move into alternative products with the introduction of Exhibit, a biological for insecticides. The active ingredient is worms — nematodes, to be exact.

These microscopic worms seek and destroy certain insects, inflicting them with infections that prove terminal. Through a special formulation, they are packaged

immobilized in a gel. This keeps them alive, but unable to wriggle themselves to death of fatigue.

In the field, the operator adds water to the gallon container, which appears nearly empty, but contains 250 million nematodes. The user also adds an activator, which releases the worms from the gel. Finally, the mix is poured into a spray tank and spraying can begin.

Ciba-Geigy has an agreement with Biosys, a biological manufacturer for the consumer market, to market this insecticide to the professional market.

This year, Ciba-Geigy has taken advantage of lingering drought situations. Weather conditions have exacerbated disease prob-



Despite a changing environment and diverse customer needs, specialty pesticide manufacturers are optimistic about their future.

lems, but have favored Ciba-Geigy fungicide products, the largest selling products for the firm, according to Doug Houseworth, manager of technical support.

"The drought has affected lawn care sales significantly in the Midwest, particularly insecticides," Houseworth said. "If you've got brown turf, you're not going to spend money on an insecticide application to keep it green. On the other hand, if there's plenty of water and the turf is green, and then that turf starts to die because of grubs, you'll move to protect it. But most Midwest turf contains fescues;

under dry hot conditions they'll go dormant."

Drought conditions or not, professionals are learning to apply pesticides sparingly, following IPM concepts that may have originated long ago, but not fully realized until recently.

"The term integrated pest management is being thrown about quite a bit," said Andy Seckinger, CHIPCO product manager at Rhone-Poulenc, Research Triangle Park, N.C. "I got a degree in pest management 15 years ago. Believe me, IPM is no new idea."

Another misconception, he said, is that IPM means abdicating synthetics in favor of biologicals.

(continued on page 44)



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(continued from page 41)

"All it means is that you examine the system, decide what your 'economic threshold' is — what level of damage can you tolerate — and look at all available options to take care of the problems so it does not go above that threshold," he said.

"That may include biologicals, like using Japanese beetle traps around certain ornamental areas. It may include cultural, such as aeration or spiking the soil. It may include 'chemical' controls as well."

Rhone-Poulenc is, in fact, in the process of developing "biorational" — the term EPA uses and favors — alternatives to traditional synthetic pesticides.

One Minnesota businessman is experimenting with his own alternative products at the same time he maintains properties. Organic Lawn Care Products provides the products and Organic Lawn Care service attends to the customers. Both are headed by Mark Miles.

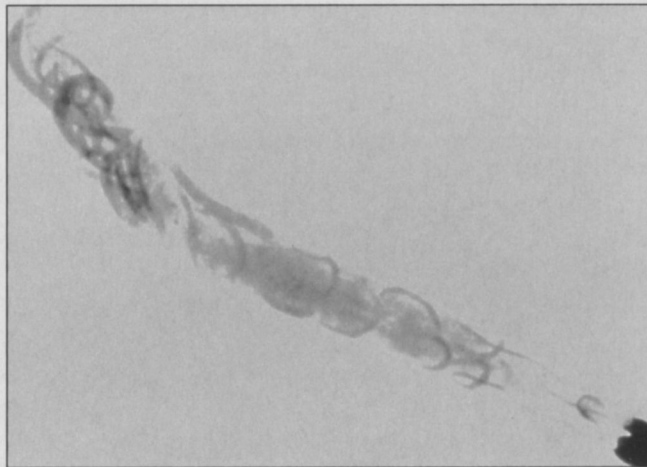
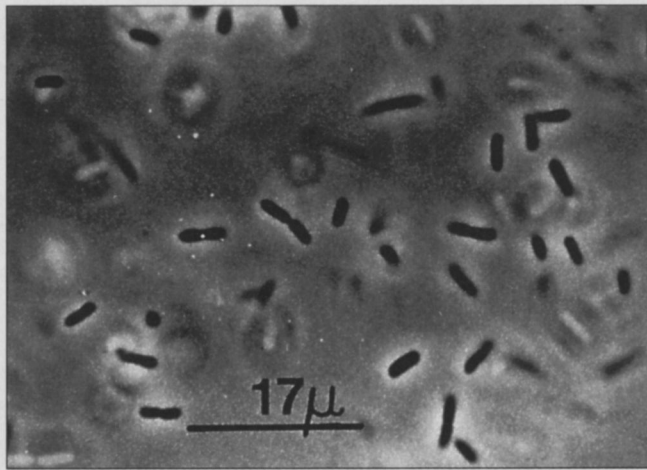
Traditional chemical pesticides are used in only about 5 percent of the lawns his lawn maintenance service currently is treating.

Miles has yet to come out on the market with an alternative pesticide product, but that's in the works, he said. "We have one fungicide perfected now. Experiments have all been positive, and now we must EPA-register it. That'll take us probably two years, max. We have an insecticide that's not EPA-registered yet, that has been working in 80 percent of the cases."

CHOOSING A DIRECTION. Contractors are sometimes caught in the middle, trying to be ecologically conscientious and make money at the same time in a customer universe marked by short-sightedness.

Richard Nelles, president of NutriLawn International Inc., a Canadian franchise headquartered in Winnipeg, Manitoba, said his biggest job is getting customers to realize he can't work miracles.

"Customer education is part of our IPM program. We're trying to get across to them their lawn needs to be fed and watered on a regular basis. We like to come every five weeks or so and give them a nice balanced amount of



Magnified photo of Exhibit biological insecticide's effect on pests (top). Nematodes infecting a pest larva (bottom).

In his 20 years in the business, he has seen definite changes in how pesticides are applied. "We used to apply Dursban insecticide as a blanket application on lawns during the late spring through early fall flea/tick season. We gave that up at the beginning of the year, and we only apply those materials on request of the customer. For subsurface insects also, we tend to apply only on an as-needed basis."

Safety concerns for applicators was the primary motivator here. California has strict laws requiring such dispensers to don veritable armor (including respirators and gloves) before disseminating pesticides.

"The more exposure to pesticides there is on a regular basis, the higher the risk of a workman's comp suit," Cohen asserted pragmatically.

An unabashed believer in productive chemistry is Reg Robertson, whose Custom Lawn & Landscape Inc., based in Olathe, Kan., is growing too well to hide certain numbers.

"Actually we're using more pesticides, because we got more customers," he said. "We don't use any biologicals because we've heard they don't work well, they cost more to use and I don't think the consumer really wants to pay more even if it is more ecologically sound. They want the most results for the least amount of money. We have a pesticide-free lawn program; I've only got maybe 1 percent of all our people interested in doing it for a year or more."

Rick Steinau, president of Greenlon Lawn Care Services, Cincinnati, Ohio, said he's been incorporating an IPM program for several years. "We haven't done blanket applications in seven years."

Like Nelles, he has his people outfitted with a double-trigger delivery system that allows them to have one material at the ready so that when they see a problem, such as a weed problem, they can hit the second trigger to target just the pests that appear at certain times of the year. "Then you let go of your trigger and you're back to putting down fertilizers. We

(continued on page 101)

nutrients. We press them hard to cut their grass three inches high with a sharp mower. We want them to recycle clippings."

Nelles estimated that a third of the lawn's nitrogen comes from decomposed leaves from those clippings. "We adjust for that in the amount of fertilizer we put on."

Good customers don't need much pesticide. NutriLawn, like many others in the green industry, no longer apply blanket applications of pesticides.

"We're finding that with customers on our program for a few years, about all you end up doing is a few spot treatments," he said. "We have little hand sprayers in the truck. Sometimes we don't even use our injectors on the main line. We'll just take a hand can and trim around the sidewalk or something like that."

Preventive applications, on the other hand, are often still necessary, said Mark Laube, vice president of development for Lawnmark, Hudson, Ohio.

"In the event you have had a problem, and identified a need — say a lawn was heavily damaged by surface insects in late summer or fall, and treatment was applied

— that lawn may be a good candidate for insect activity next year."

The use of synthetic pesticides and alternative products varies from one firm to the next and one region of the country to another.

"We take a limited approach in the use of pesticides, whether synthetics or biological," said Phil Catron, president of Naturalawn of America Inc., Frederick, Md. "We instituted IPM in lawn care. In fact, we just got done writing the IPM chapter for the EPA manual. If an application has to be made, our first choice is a biological and always on a spot treatment, not a blanket. We've gotten some pretty good heat from the bigger lawn maintenance firms. They're now proposing and trying to be proponents of things they were knocking us for two or three years ago."

Robert Cohen, president of Green Scene, Tarzana, Calif., has his people using a full array of herbicides, insecticides and fungicides to manage a business that is 95 percent residential. In the hot Sun Valley, Green Scene uses both biological and traditional pesticides.

Dormant feed with Milorganite this fall,



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Dormant fed Milorganite - Photographed March 25th

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MIDRANGE LAWN MAINTENANCE VEHICLES: THE '80s vs. THE '90s

THE 1990s are well under way and with the new decade has come a plethora of changes for lawn and landscape maintenance business owners. Ten years have elapsed since the pivotal Motor Carrier Act of 1980 was passed deregulating the trucking industry and resulting in today's highly competitive and entrepreneurial market.

The '90s will see more significant legislative changes — primarily affecting heavy-duty lawn maintenance trucks (Classes 7 and 8), with gross vehicle weights (GVW) of 26,001 pounds and more. As a result, new requirements imposed on heavy-duty lawn maintenance trucks are causing many owners to re-evaluate their needs.

One consideration is downsizing to midrange trucks with GVWs of 26,000 pounds and under, such as Class 5 and 6 trucks.

LICENSING. The Commercial Motor Vehicle Safety Act of 1986 requires every state to conduct uniform testing and licensing of all commercial drivers. To accomplish this, the National Driver's Licensing Program, more commonly known as the Commercial Driver's License (CDL) was established.

The CDL is a single license issued by the driver's state of legal residence certifying that a commercial driver has demonstrated satisfactory knowledge of the operation and driving skills neces-



This decade will bring significant legislative changes to heavy-duty truck operators, causing many maintenance professionals to re-evaluate their trucking needs.

By Paul Vikner

sary to operate a vehicle in a safe manner.

Effective April 1, 1992, the following drivers (an estimated 6.5 million) must obtain a CDL license:

- Class A — Tractor-trailer drivers, provided that the trailer's GVW is more than 10,000 pounds and the added weight of the tractor brings the gross combination weight (GCW) to 26,001 pounds or more. Drivers pulling double or triple trailers.

- Class B — Heavy straight truck or bus drivers, if the GVW is 26,001 pounds or more. Arti-

culated bus drivers.

- Class C — Drivers of vehicles carrying hazardous materials in quantities that require placards. Drivers of vehicles that carry more than 15 passengers including the driver.

The CDL test consists of both a road and written exam with an oral option. Many companies fear that even their experienced drivers will not pass the test. As of March 1989, the California passage rate was only 50 percent. Many industry experts predict that the test's difficulty will also result in an increased shortage of

qualified drivers.

In light of the test, many heavy-duty lawn maintenance truck owners are considering downsizing to midrange trucks which are not affected by the CDL requirements. According to statistics provided by the Motor Vehicle Manufacturers Association (MVMA) a shift in sales is already occurring.

In April 1990, Class 6 truck sales totaled 3,545, down 1 percent from April 1989. Class 7 sales, totaling 6,811, dropped a dramatic 23.8 percent from the same period in 1989.

Not only will it cost employers extra money to pay for drivers to study for and take the CDL test, but licensed drivers will require higher salaries as well. While larger truck fleets have the money and resources to get their operators licenses, the one-truck operator and smaller

lawn maintenance companies will be the ones most affected by this new law.

Therefore, many smaller businesses will be opting for the more cost-effective option of midrange trucks and drivers.

AIR QUALITY CONCERNS. A new emphasis on preserving the environment is emerging worldwide and affecting every aspect of society including trucking. This new urgency to clean up the nation's air is spurring national and local legislation to cut en-

(continued on page 48)



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USE READER SERVICE #24

Maintenance Vehicles

(continued from page 46)

gine emissions.

According to an Aug. 16, 1990 press release issued by the Environmental Protection Agency, "41 areas violate the carbon monoxide (CO) standard...CO is primarily an automotive pollutant."

The Senate and House evaluated each of these urban areas and classified them as either "serious" or "moderate." The Senate classified seven areas as serious while the House classified only three areas as serious. However, the two governing bodies agreed on the top three offenders: Los Angeles, Calif.; Oshkosh, Wis.; and Steubenville, Ohio. Also included on the Senate's list were Denver, Colo.; Provo-Orem, Utah; Seattle-Tacoma, Wash.; and Las Vegas, Nev.

The City of Los Angeles, in an effort to control emissions and lessen traffic congestion, has proposed drastic reductions on streets and freeways by trucks with more than three axles and GVWs of more than 26,000 pounds during morning (6 a.m. to 9 a.m.) and evening (4 p.m. to 7 p.m.) rush hours, Monday through Friday.

The plan lets companies who cannot comply with these restrictions purchase expensive permits which will allow a certain percentage of their trucks to operate during peak traffic hours. Class 6 trucks will be able to continue operation during peak traffic hours while their larger counterparts will be barred from highway use. If the measure is adopted, many local operators are expected to convert to Class 6 trucks which are not affected by law.

Furthermore, a 20-year plan to clean the air in the Los Angeles basin is being implemented by the South Coast Air Quality Management District which has jurisdiction over almost four counties in Southern California. The program calls for replacing diesel fuel with alternative cleaner-burning fuels, among other conditions.

Los Angeles isn't the only city that's instigating such measures. "Denver has experienced significant reductions in CO emissions since requiring the use of oxygenated fuels and by implementing an enhanced vehicle inspection and maintenance program," according to the EPA.

Many of the nation's largest cities are currently out of compliance with the federal government's clean air laws, and many are focusing on restricting trucking to solve the problem.

FEDERAL EPA REGULATIONS.

Truck manufacturers and oil companies are currently hard at work to produce vehicles and fuel that will meet deadlines set by the EPA.

In 1985 the EPA published a series of emissions reductions for diesel engine trucks with GVWs of more than 8,500 pounds. These

phur and aromatics content. Truck manufacturers are redesigning combustion chambers and using extensive electronics emissions control in their new engine technology. They are also working on exhaust aftertreatment by designing particulate trap oxidizers and new catalytic converters.

SAFETY ISSUES. Much legislation slated for the 1990s revolves around increasing safety concerns. Worldwide there are about 500,000 traffic deaths each year. Driver inattention accounts for 30

"We do a lot of residential jobs close together which requires us to make a lot of stops. We sometimes make 25 to 30 stops in one day. The cab over chassis design allows the drivers to get in and out of the truck easier and quicker," he said. "It also gives us better maneuverability in tight cul-de-sacs."

FEDERAL SAFETY LAWS. In the past, there has been little conformity in safety regulations. However, the federal government is making a concerted effort to solve this problem. The Federal Highway Administration (FHWA) recently enacted a new safety rating and monitoring system for interstate carriers. Each new truck will be categorized as either satisfactory, conditional or unsatisfactory.

Satisfactory carriers will be placed in the Educational and Technical Assistance Program where they will be monitored periodically, and receive safety information from FHWA's Office of Motor Carriers. Conditional and unsatisfactory trucks will be placed in the Selective Compliance and Enforcement Program where they will receive federal help in upgrading their operations.

Penalties for not correcting deficiencies can include ceasing operations, as well as fees ranging from \$500 to \$25,000, and up to a one-year prison sentence.

The Department of Transportation also enacted an annual vehicle inspection for interstate trucks with GVWs of more than 10,000 pounds. Starting in July 1990, commercial vehicles must be examined by a qualified inspector at least once a year.

States are stepping up their safety regulations as well. As of Jan. 1, 1989 all California commercial vehicles were required to get a safety inspection at least once every 25 months. Other states are adopting similar measures.

DRUG TESTING. Another growing area of concern is drug testing. Operators of trucks with GVWs of more than 26,000 pounds are required by DOT to perform three different types of driver drug testing: pre-employment, periodic and reasonable cause.

A decision is pending on whether random and post-accident

(continued on page 101)

Many cities are focusing on trucking restrictions to help comply with the federal government's clean air laws.

regulations emerged out of the 1977 amendment to the Clean Air Act. The emissions reductions affect both nitrogen oxide and particulate matter (visible smoke).

In a two-stage process the EPA will require an 83 percent reduction of particulates and a 53 percent reduction of nitrogen oxide. The first set of reductions became effective last January and the second set will go into effect in January 1994. These requirements apply to a heavy-duty diesel engine's useful life period of 290,000 miles.

The reductions will be met through both engine technology and fuel quality. Fuel quality will be improved by lowering the sul-

phur content to 50 percent of all accidents, while human judgment errors account for the remaining 50 percent to 70 percent.

Some companies are shifting to midrange trucks because they are involved in fewer accidents and therefore are easier to obtain insurance for. Furthermore, many lawn maintenance companies are shifting to a cab over engine (COE) configuration which allows for increased visibility and maneuverability resulting in better safety.

Dick Bare, owner of Arbor-Nomics, Norcross, Ga., a suburb of Atlanta, said the COE design has made a big difference in his business.

ORGANIZE YOUR TRUCK

A WELL-ORGANIZED truck allows lawn maintenance contractors to inventory tools at a glance and reduce forgotten or lost tool mishaps.

When hung correctly, elastic straps hold tools against the wall to keep them from falling. Color coding of handles ensures crew identification. In addition, a carefully mounted fire extinguisher may help avoid fire losses.

When thought is given to truck organization, efficiency should improve too. Mowers, blowers and tractors can all be removed easily from the trailer. Once removed, tools are easily accessible and available for the job at hand.

Not only does careful handling ensure dependability and availability, it's also necessary for safe transportation. — *Panoramic Landscape Co., Lombard, Ill.*

Lawn & Landscape MAINTENANCE

INSIDE:
UNPRECEDENTED
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KEY COMPOSTING ISSUES
COMPOST CASE
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SPECIAL REPORT:
**COMPOSTING
IN THE '90s**

Yard-waste composting is becoming less of an option and more of a necessity for professional landscape contractors as the nation's solid-waste crisis continues to take its toll on landscape disposal.



LANDSCAPERS TAKE ON CHANGING ROLES

The landscape industry finds itself diversifying, yet again, to handle the current challenge of alternative yard-waste disposal.

About one-third of *Lawn & Landscape Maintenance* magazine readers who collect or generate lawn waste are involved in composting. While some keep the composting in-house others choose to work through a municipality, a composting facility operated by a peer or some other method currently available to them.

Earlier this year, *LLM* began providing coverage of the dramatic events unfolding in the composting marketplace. With legislation changing rapidly and the customer demanding to know how it's going to affect him, it's impressive to see the progressiveness of many lawn and landscape maintenance contractors.

In a number of states, activity surrounding the disposal of yard wastes laid dormant until government mandates forced landscapers to seek alternative measures.

But in other areas, professional contractors often played the lead role in coordinating project compost sites with cities and peers.

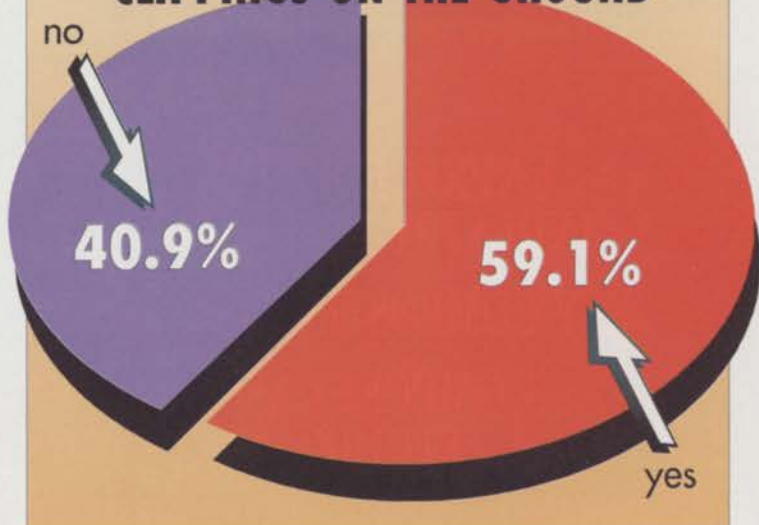
For years, landscape contractors went about mowing, trimming and pruning in a traditional manner with no particular concern for where the waste ultimately would be disposed. Now, many contractors are advocating leaving grass clippings on the ground and collecting leaves, branches, clippings (when collected) and other trimmings for composting.

The situation remains tentative in some areas where composting has not yet been accepted as a viable option and where state bans have not taken effect. Landscape contractors remain enthusiastic, nevertheless, as new challenges come their way.

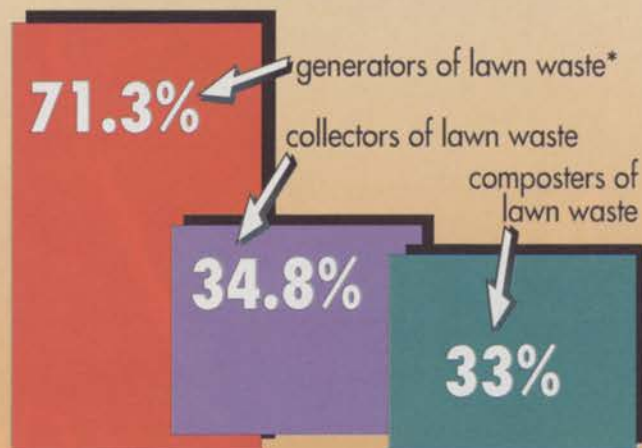
The landscape industry finds itself diversifying, yet again, to handle the current challenge of alternative yard-waste disposal.

Since no real industry statistics exist on composting in the lawn and landscape maintenance market, we decided to survey 750 randomly selected readers in an attempt to discover where

GENERATORS OF LAWN WASTE LEAVING CLIPPINGS ON THE GROUND



HOW SURVEY RESPONDENTS CATEGORIZE THEMSELVES



*lawn waste includes: grass clippings, leaves, branches, etc.

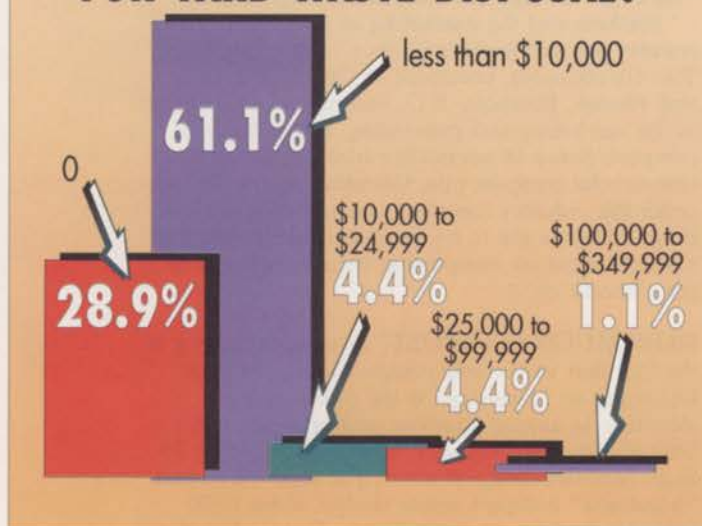
they stand on the issue. The survey received a 15.5 percent return rate.

Approximately 71 percent of *LLM* readers said they are generators of lawn waste, 34.8 percent said they are collectors of lawn waste and 33 percent said they are composters of lawn waste.

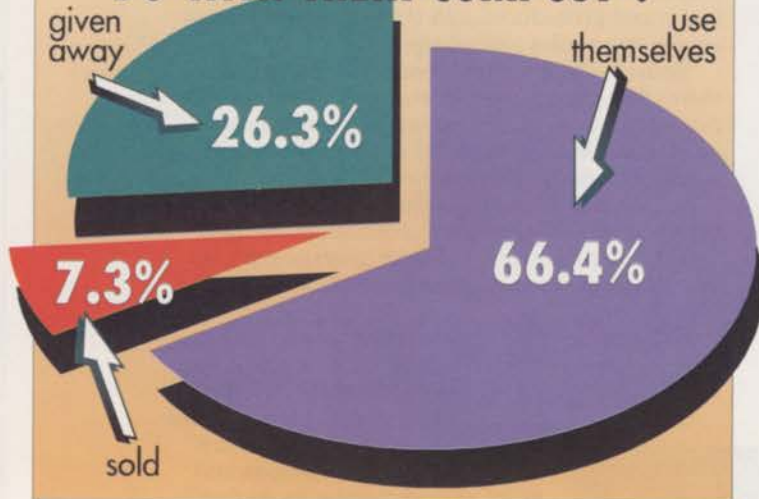
Of those generating or collecting yard waste, 29.2 percent said they generated one to nine tons per year; 23.6 percent, 10 to 24 tons; 12.4 percent 100 to 499 tons; 10.1 percent, 25 to 49 tons; 10.1 percent, 50 to 99 tons; and 2.2 percent, less than a ton. About 12.3 percent of the respondents said they generated between 500 and 2,999 tons annually.

Just more than half of the respondents who said they are generators of lawn waste said they tended

WHAT IS YOUR BUSINESS' 1991 BUDGET FOR YARD WASTE DISPOSAL?



WHAT LANDSCAPE CONTRACTORS DO WITH THEIR COMPOST?



to leave grass clippings on the ground after mowing. Most of the group leaving clippings on the ground used rotary mowers, 93.2 percent, while 10.2 percent used reel mowers. Mulching/recycling mowers and mulching plates accounted for 13.6 percent and 6.8 percent, respectively, of those not bagging clippings.

Of the equipment used in the composting of yard waste, 52.2 percent of those who compost said they use chippers/shredders, 43.5 percent use compost bins, 37 percent use mulching/recycling mowers, 34.8 percent use bagging equipment, 10.9 percent use screening equipment, 4.3 percent use windrow turners, 2.2 percent use tub grinders, 2.2 percent use in-vessel compost systems and 2.2 percent use odor control systems.

While a little more than a third of our respondents said they don't compost the lawn waste they collect or generate, 21 percent said they compost 90 percent or more of their collected waste. About 11.6 percent said they composted 1 percent to 9 percent of their collected waste; 10.5 percent composted 10 percent to 24 percent; 9.3 percent composted 75 percent to 89 percent; 7 percent composted 50 percent to 74 percent; and 3.5 percent composted 25 percent to 49 percent.

Surprisingly, 64.4 percent of the respondents composting a portion of the lawn waste collected said it is composted at a facility owned and/or operated by them.

Other avenues used for composting included municipalities, 11.9 percent of the time; another landscape company, 3.4 percent; and haulers, 3.4 percent. The remaining said they pursued other avenues of composting including landfills, farms, nurseries, private companies and homeowners.

The idea of composting is generally accepted in nearly half of the communities where landscape contractors operate. Unfortunately, professional contractors are more than likely to be turned away from community-run compost facilities about 42.4 percent of the time.

State and/or community bans and restrictions on the dumping of lawn wastes in landfills are prevalent in only 20.7 percent of the respondents' work areas, but slightly more than half anticipate bans in the foreseeable future. If not already enacted, bans are expected in 1992 and 1993.

For an issue as hot as the disposal of yard wastes, an unexpectedly high number of those responding to our survey were unaware or unsure of community or state regulations regarding the distribution of wastes.

Landscapers involved in composting said they produce an end product suitable for use on food crops 54.5 percent of the time, suitable for use on non-food crops 48.5 percent of the time and suitable for use as a landfill cover 15.2 percent of the time.

Those not in tune with composting practices might want to reconsider. According to survey respondents, the average price per ton to dispose of solid-waste in a landfill is \$41.75, while those depositing lawn waste at a compost facility pay \$22.89 per ton.

About 66.4 percent of the compost produced is used by the contractor doing the composting, while 26.3 percent of it is given away and 7.3 percent is sold.

Other survey information revealed that 1991 budgets for yard waste disposal were less than \$10,000, 61.1 percent of the time. Additionally, 28.9 percent said they allotted no money in the budget for yard waste disposal, while 4.4 percent earmarked \$10,000 to \$24,999; 4.4 percent, \$25,000 to \$99,999; and a handful allotted \$100,000 to \$349,999.

Learn more about the recycling/composting habits of LLM readers on the following pages of this special report. ■

A PROFESSION UNDER PRESSURE

While composting and the marketing of compost is still in its infancy, the landscape profession, spurred by increased regulation, is quickly catching on to its benefits.

With an increasing burden of government rules and regulations, environmental concerns, financial and legal constraints and day-to-day operational requirements, why would a landscape contractor want to become involved in composting yard waste? Because he has no choice.

Driven by the solid-waste crisis and its impact on the nation's landfills, yard-waste composting is becoming less of an option for landscaping professionals and more of a necessity.

More than a dozen states and the District of Columbia have already banned yard waste from their landfills or will close landfills to yard waste within about the next 18 months. In addition, the "back-40 approach" to yard-waste disposal — which some municipalities as well as landscapers have used to avoid skyrocketing landfill tipping fees — will soon cease to be an option as state laws be-



Because of increased regulation, scenes like this won't be seen much longer.

come more restrictive, compost end users become more demanding in their quality standards and "back-40" acreage becomes increasingly scarce.

"Markets and the marketing of compost in this country are still in their infancy," according to Tom Glendinning, president of Green Glen Ltd. and Wastek, Pittsboro, N.C., companies which deal in the marketing and processing, respectively, of compost. Some 18 years after building his first commercial compost pile, Glendinning readily concedes the industry has many unanswered questions. "There's got to be about another 10 years of research done on composting before we begin to get a handle on it."

HOW MUCH COMPOST? Bearing testimony to the fact that yard-waste composting is just now becoming an "industry" is the fact that hard statistics on annual compost production in the United States are virtually non-existent. While 15 to 20 facilities compost municipal solid waste and "hundreds" compost sewer sludge, some 1,500 compost yard waste, according to Connie Kunzler, director of public affairs for the Solid Waste Composting Council, Washington, D.C.

"There are only eight to 12 fairly sophisticated facilities in the various states," she said, "and there's very little inventory." Complicate the question of basic volume with different processing levels and procedures, and the scenario is akin to comparing apples and oranges.

"Some (facilities) pile leaves and don't turn them. Some have sophisticated processing and even do pick-up of the materials. Some do composting and deliver material to agricultural land, where it's mixed with manure."

As with any commodity, demand will depend on the development of healthy, continuing markets. Part of the problem stems from government's involvement in the marketing process, according to Glendinning.

"Most composting in this country today is being done by government — federal, state, county and local — and the fate of that compost is that well over 50 percent goes to landfills or is given away. Governments are not marketing organizations and never should attempt to do that."

WHERE'S IT GOING? All composting programs will be market-driven, said Edward Janesz, organic recycling development manager for Kurtz Bros. Inc., Cuyahoga Heights, Ohio. "Unless there's an outlet for the material, it's doubtful composting programs will have an impact on waste-reduction or diversion of material from landscapers."

Landscape contractors and lawn maintenance companies, which now drive compost demand, will continue to be primary users of

(continued on page 54)

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UNDER PRESSURE (continued from page 52)

the material, Janesz said. While compost does not take the place of topsoil, its fertilizer properties serve as conditioners to upgrade topsoil for the seeding of lawns, beds, vegetable production and for potting mixes and, to a lesser extent, for golf courses and park maintenance programs.

Beyond landscape applications, compost use today — and the projection for demand in the future — falls off sharply, Glendinning said. He cited land reclamation — where lower-quality, MSW-based compost can be used to reclaim stripmining sites — among other uses.

In Portland, Ore., the highway department uses compost in place of bark in some applications, and a test program under way has compost being used in conjunction with a county storm-water runoff control project.

QUALITY STANDARDS. Nowhere on the issue of composting is there more disagreement than on the issue of quality standards — what they should address, who should develop them and if they're even needed at all.

Development of national compost standards was one of SWCC's goals when it was founded two years ago, Kunzler said, and its marketing and standards committees are both involved in developing what they hope to be a national model or guideline to help states write their own standards.

Two points key to the council's effort are the need for the protection of public health and safety from both the environmental and human standpoints and the importance of markets.

Others view standards as a yardstick to ensure production of a consistent, uniform, predictable and legitimate product.

The two private yard-waste composters in the Portland area want quality standards established, Heaton said, "because when more yard-debris plants come on-line, they fear some will produce an inferior product, market it as compost and give compost a bad name."

On the other side of the issue, however, is George Martin, group project leader at Scott's/Hyponex, Marysville, Ohio. The company tests its finished compost in order to meet customer specifications. But as long as compost is free of foreign material that could affect health or safety, standards such as those already issued by the National Bark and Soil Producers Association should be adequate for the industry's needs, Martin said, and a new set of guidelines is unnecessary.

Glendinning also opposes issuance of standards, at least for now. Not enough is known about compost properties and how they perform to attempt to standardize those qualities, he said.

He pointed to research being done at the University of Oregon in conjunction with the American Soil Ecology Society and at North Carolina State University. "Basic research has to be done, secon-

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dary research has to be followed and the third layer (of research) will explain that information gap."

THE RESIDUE ISSUE. Although mass-media coverage of pesticide application controversies has given the issue high visibility, studies continue to show little cause for concern over residual amounts in compost.

"Findings appear to be that if composting is done properly; if temperatures are maintained to at least 140 degrees (Fahrenheit); and if it is turned properly; the pathogens are killed off and the herbicides and pesticides are burned off," said Metro's Heaton.

A continuing test program involving Portland's two commercial yard-waste composters has been monitored now for five years, and continues to show only "negligible" amounts of pesticides left in manure compost.

Materials which were found in mature compost — though still in negligible amounts — were those which have been banned by the government — such as DDT and chlordane — but which apparently are still being used by homeowners.

Martin of Scott's/Hyponex pointed out that the half-life of 2,4-D is about two weeks, "so by the time it's picked up, moved to the site and composted over six months, the pesticides are gone."

LANDFILL BANS. As more states enact bans against landfilling yard waste, the more motivation there will be for the growth of the composting in-

dustry, experts agree.

Illinois, for example, saw its ban go into effect July 1, 1990. In the months leading up to the ban, activity surrounding siting and permitting of yard-waste composting facilities increased significantly, according to Michael Chandler, project manager of the solid-waste management section of the Illinois Environmental Protection Agency.

Since then, the number of licensed operations has grown at a much slower pace increasing from 106 one year ago to 112 in 1991, he said. In addition, the EPA has processed several applications for expansion of existing facilities.

In the 12 months ending April 1, when Illinois' number of operating landfills dropped from 117 to 110, the 106 permitted composting facilities took in 221,513 tons of yard waste, Chandler said.

"Communities, landscapers and lawn maintenance companies (in Ohio) are just now thinking about grass clippings, leaves and small branches," said Janesz of Kurtz Bros. "Communities will be more responsive by the end of '93 (when Ohio's ban takes effect)."

The speed with which the green industry moves toward yard-waste composting will be determined not only by respective states' yard-waste bans, but also by the economics of landfilling organic materials in states where bans have not yet kicked in or where they don't yet exist, Janesz said. ■

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BITING THE COMPOST BULLET

Composting is highly individualistic and no two systems are run the same way, but various systems are appearing more regularly across the country.

Composting — once considered the bailiwick of environmentalists and backyard practitioners — has gone mainstream.

No longer is it considered a lot of bother, too complicated or not worth the effort. Today, composting of yard wastes, particularly by lawn and landscape maintenance contractors, is an economic necessity, a community relations benefit and, increasingly, a legal requirement.

BUSINESS DECISIONS. Establishing a business goal, a step taken long before the first materials are received and the first windrow is begun, is among the most critical steps to successful composting, according to Tom Glendinning, president of Green Glen Ltd. and Wastek, Pittsboro, N.C.

"Anybody can compost. The tipping fee may force volume reduction as a goal vs. 'use-your-own.'"

Composting can help landscape contractors realize savings in two ways: avoidance of landfill tipping fees and reduction in the amount of materials they need to purchase for their own jobs by using their own compost.

"These are two diametrically opposed business goals," he said. Volume reduction represents the most economical method of composting, while production of compost for a company's own use has potential for high capitalization needs, according to Glendinning, a landscape contractor for 20 years who's been involved in composting for the past 18 years.

The "back-40" approach remains a viable composting alternative only so long as sufficient land is available for storage of incoming waste materials, said Vince Lunetta, director of marketing at PRSM Inc., West Ches-

ter, Pa. That approach — "Dump it and let it rot for two years" — is still OK as long as the landscaper is committed to reusing it at a future time.

Another business decision to be made is determination of a composter's break-even point. For anywhere from \$150,000 to \$200,000 to \$350,000 to \$400,000, a landscape contractor can establish a viable "low-tech" composting operation. And, depending on the ultimate use of the finished material, an investment of \$2.5 million to \$3 million can result in a truly state of the art compost installation.

Other business decisions should include what materials will be accepted for composting, a question which can also dictate a composter's operating schedule.

"Landscapers and lawn maintenance people are busy during the growing season and have grass clippings like crazy in the spring. There's not a lot of time to spend on composting when they're taking in grass," said Edward Janesz, organic-recycling development director for Kurtz Bros., Cuyahoga Heights, Ohio. "Maybe they want only a portion (of the waste stream). Maybe they'll take only the leaves in the fall, when their own business is slower. Leaves are the easiest to handle, and the tipping fee for leaves is the most."

In addition, Janesz said, the landscaper eyeing his own composting operation should consider whether to process just his own yard-wastes, accept materials from other contractors and/or seek contracts from government agencies, such as municipalities, counties and solid-waste management districts.

TECHNOLOGY LEVELS. Composting is "highly individualistic," and no two systems are run the same way, explained Bernadette Thavarajah, senior engineer at E & A Environmental Consultants Inc., Stoughton, Mass. Decisions on whether to embark

(continued on page 58)



A front-end loader and a tub grinder are staples of composting.

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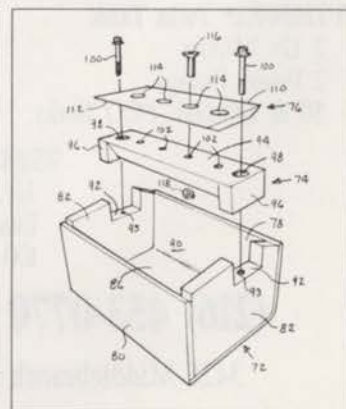
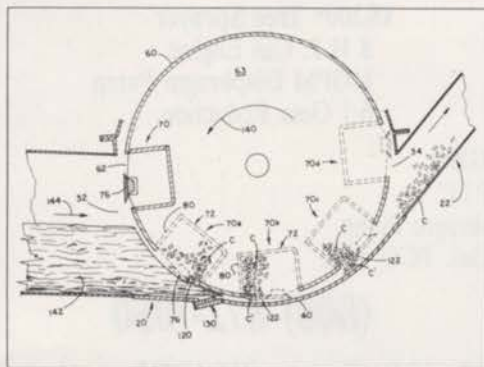


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COMPOST BULLET (continued from page 56)

on a low-, medium- or high-tech system depend on considerations of cost, location and the ultimate use for the composted material.

A low-tech system requires a minimum of mechanical equipment but a rather large land area, she said, and requires 12 to 18 months for completion of the process. A medium-tech system requires more basic equipment, less land and produces a more stable compost product in six to 12 months. A high-tech system — in the \$2.5 million to \$3 million range — brings with it high capital costs but also yields the highest quality compost in four to six months, Thavarajah said.

GETTING STARTED. Siting is among the would-be composters' first decisions. While no ironclad industry rule-of-thumb exists, most state guidelines are in the range of the Ohio Environmental Protection Agency's recommendations: one acre of land for each 1,000 tons of yard waste. Broken down by materials, targets should be ½ ton of grass per acre; ¼ ton of leaves per acre; and wood-waste material approximately between the two, Janesz said.

Site preparation is critical to the success or failure of a composting operation, he added. To upgrade vacant, barren, virgin acreage for composting use:

- Grade the acreage to 1 percent to 3 percent.
- Install a hard surface such as concrete, asphalt

or aggregate.

- Prepare detailed drainage plans, showing how surface runoff water will be handled.

- Plan for monitoring of leachate and biochemical oxygen demand.

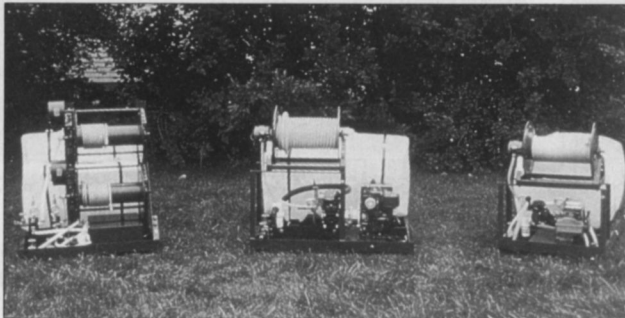
Registration with the state EPA, Department of Natural Resources or other agency is the next step.

COMPOSTING EQUIPMENT. The smallest composting operation, receiving minimal volumes of yard waste and operating in the most economical fashion, can get started with the least investment in equipment. At the minimum, experts agree, a front-end loader, with an investment of about \$125,000, is all a landscape maintenance company needs to begin.

While grass clippings require no preprocessing, and leaves and brush need little size reduction, wood wastes do. The purchase of equipment to reduce the size of wood waste isn't a necessity, experts point out, since operations such as tree care companies will often offer chipping services with their heavy-duty equipment on a contract basis.

But buying a piece of equipment may remain a better choice if wood waste constitutes a significant portion of the waste stream. If limbs no larger than six inches are part of the incoming material, a wood chipper — at \$10,000 to \$40,000 — will do the job. Chippers can process from five tons per day up to 25 to 30 tons per hour, depend-

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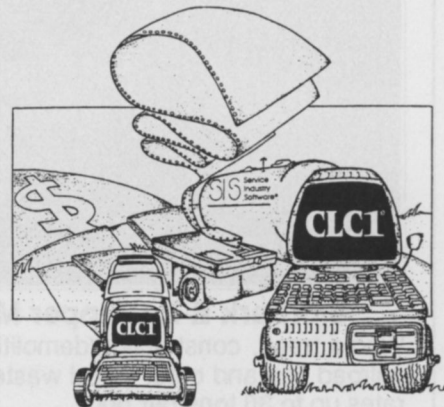
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ing on their size and the composition and condition of the material, Thavarajah said.

As volumes increase or composition of incoming materials change, a tub grinder should be a consideration, Thavarajah said, but, at \$50,000 to \$60,000, shouldn't necessarily be considered a requirement.

"In the short term, you may buy a wood chipper and know that if you grow you'll need a second chipper or a tub grinder. If you have a tub grinder, know that you may need a shredder (\$100,000 to \$250,000 and up), but you can do the same with two tub grinders."

When buying equipment, it's also important to know the amount of maintenance — and, consequently, downtime — each will require, she said. A tub grinder, for example, needs much more maintenance than a chipper does: about one hour per day plus a five- or six-hour period each week for routine maintenance and replacement of worn parts.

Equipment pay back is another important consideration, said Lunetta of PRSM, and with proper maintenance, a tub grinder can remain in service 10 to 15 years and as long as 30 years.

In a low-tech operation, the front-end loader is adequate for turning of windrows, but as a system grows in sophistication, a windrow turner — with a price tag of about \$80,000 — may be considered.

Important in shopping for a windrow turner, Thavarajah pointed out, is the size of the windrow itself. "The windrow turner should determine the size of the windrow," she said. "Many have specific dimensions, and you may have to reshape the windrows if that's not taken into consideration."

Post-processing of compost is as important to the quality of the end product as is the preprocessing and size reduction, Thavarajah said. Screens (\$120,000) are generally more effective than sieves, which are used for smaller volumes, she said, and with one or two screens involved can yield three grades of compost.

Separators, which can be used in preprocessing, are more effective in the post-processing stage in removing residual material — glass, metal, stones and even tennis balls. Such foreign matter, Janesz said, will always constitute 1 percent to 3 percent of the finished compost's volume. This residual must still be landfilled.

Personnel considerations should not be overlooked in planning a composting operation, Lunetta said. Vertical integration within the company is ideal. Ideally, designated personnel should be responsible for separating plastic pots from incoming material, windrowing, checking and maintaining moisture levels and temperatures and turning the piles at designated intervals.

Other capital considerations are a site truck (which landscape contractors already have) for moving material on site and for making deliveries; and, unless the compost site is near the office, a utility trailer for charging customers and issuing waste receipts.

A *Compost Facility Planning Guide* is available exclusively from the Solid Waste Composting Council, 601 Pennsylvania Ave. NW, Suite 900, Washington, D.C. 20004; 202/638-0182. Cost is \$10 for members and \$20 for non-members. ■

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ILLINOIS' COMPOSTING GURU: SMELLING SWEET

Versed in European technology, Bob Gillespie is teaching U.S. lawn and landscape professionals a heap about how to enrich soil.

Robert Gillespie, managing director of four-year-old DK Recycling Systems, Lake Bluff, Ill., is no longer in the yard maintenance business. But Scott Byron & Co., the lawn and landscape maintenance company he helped found 10 years ago — and one of the biggest customers of DK's composts — has grown to about 150 employees and annual sales of \$10 million.

Gillespie now spreads the gospel of non-putrescent composting. He's running a PR campaign for an industry that suffers chronic opposition from NIMBY (Not-In-My-Backyard) hysterics. The sad fact is that lots of compost operators have made some opposition understandable.

"A lot of damage has been done by people who continue to run, what I define as socially and environmentally unacceptable composting operations — in other words, stink pits," he said.

Since steeping himself in a European scene where composting is more favorably regarded, and land-fill space far more scarce than in the United States, Gillespie now manages three composting operations. He's also in partnership with two German companies to produce their equipment in Milwaukee using John Deere motors and other U.S. components.

Finally, he is a turnkey consultant for companies, often lawn maintenance professionals, wanting to learn how to start their own composting operations. Gillespie has worked closely with folks in Pittsburgh, Cleveland, Detroit, Toronto and Milwaukee.

Back when he was in the lawn and landscape business at Scott Byron, it rankled Gillespie that he was spending more than \$100,000 a year disposing of yard waste. He went to a Nuremberg, Germany, trade show to find a handful of firms manufacturing equipment specifically designed to



Charlie Pick and Bob Gillespie, above left, discussing business at their Lake Bluff composting facility.

process what Europeans call "green waste," and eventually struck marketing agreements with two of them. Workhorses at all three DK composting operations are the Jenz AZ 30 shredder and the Farwick Super sieve.

Gillespie's entry into composting was modest, but demand expanded his business dramatically. After Gillespie returned from Germany, he started a composting operation to handle Byron's needs. Then he was asked to manage, on that same site, the composting end of the recycling operations of the city of Lake Forest, Ill.

With pressure mounting for a state ban on land-fill acceptance of yard waste (the law took effect in 1990), he knew he had a business opportunity. He formed DK Recycling Systems and went back to Europe to study technology and marketing for a year.

"Composting is like baking bread," he said. "If you have the right equipment, recipe and ingredients, it will turn out fine."

Efficient non-putrescent composting keeps certain bacteria, fungi and other microbes continually in the pile, avoiding the need to inoculate or otherwise introduce the requisite ingredients artificially. The piles must have water, air, carbon and nitrogen in proper amounts in order to attain proper microbial activity.

A lot of people think composting piles need to be turned every two or three days to reoxygenate them. The traditional, and false, thinking has been that the pile can't exceed 140 degrees. Wrong. Lots of microbes stay alive and active at 185 degrees, Gillespie said.

The Illinois Department of Energy and Natural Resources and the Environmental Protection Agency recently rated DK's two sites — the third just opened in early October — as Illinois' best. The three together process about 125,000 cubic yards a



DK Recycling has about 110 landscape contractors as regular customers. Here a client drops off a load of mostly leaves. Photos: Robin Pendergrast, International Marketing Exchange, McHenry, Ill.

year. This product comes from local landscape firms, waste haulers and municipalities. Three quarters of the compost created is used by lawn and landscape operators.

The raw material is 50 percent leaves, 30 percent grass and 20 percent brush. Landscape contractors pay a \$10 tipping fee at DK. This will probably rise to \$12 sometime soon.

DK takes about 120 days to attain finished, marketable compost. About 110 landscape contractors are regular customers.

All the raw material is shredded within two days of its arrival at a DK compost site, except late in fall (dry leaves are safe to store for winter treatment). One man runs the Jenz, shredding as much as 40,000 yards a year. As it shreds, the \$120,000 machine builds windrows, which are then left alone, usually six to seven weeks. This crucial bit of patience makes a big difference. All composts stink a little at first, but the smart operator knows that chronic load turning will only broadcast the odor.

During early stages of decomposition, temperatures reach to between 160 and 175 degrees and pH plummets, releasing fatty acids that make compost smell. Also produced are inorganics, including methane and hydrogen sulfide.

Within a month, the pH reverses and goes back into the neutral range. The pile heals its own putrescence problem. The sulfur molecule that joined with hydrogen to produce hydrogen sulfide drops an electron and, instead of producing rotten-egg-smelling hydrogen sulfide, becomes odorless hydrogen sulfate. The foul smell caused by the interaction of methane and ammonia also disappears. Inorganic nitrogen is burned off quickly by intense microbial activity at the stupendous rate of thousands of calories per cubic yard every day.

The pile can get as hot as 175 degrees. After 10

or 12 days, the temperature moderates, falling back about 10 percent. Thirty days after that it will have dropped as much as another 20 percent, to around 145 or 150 degrees. The nitrogen burns off with the production of odorless carbon dioxide and water.

"I said a couple of years ago, 'We just won't touch those piles; we'll see if they'll heal themselves.' And that's what happens," Gillespie said.

After four to six weeks, his people pull the piles back up into the Jenz for a second, shredding at the accelerated rate of up to 150 cubic yards an hour. Gillespie eschews commonly used windrow turners, preferring this wholesale reprocessing for three main reasons: It reoxygenates and refreshes the pile, grinds up remaining wood chips and rebuilds the windrows in regulation-perfect trapezoids 9 feet high and 18 feet wide.

These new windrows have advantages over other compost heaps. They shed water better in heavy rain. When there's a lot of grass in the pile, a crust forms (much like bread crust) to keep enough moisture within the heap. DK doesn't add water except in a parched summer. When needed, this step takes place during the second shredding, but it can also occur on exceptionally dry loads as part of the initial shredding process, using the Jenz' spray attachment. Water content is kept from falling below 15 percent.

When the compost is about 90 days old, DK runs it through the Farwick sieve's 25-millimeter screen.

The sieving heats the compost to 150 degrees; there's still plenty of nitrogen to sustain intense microbial activity. After a month of curing, however, it drops to 120 or 125 degrees. Now almost completely stable, it's safe for horticultural applications. Gillespie's slow-release nitrogen product has prompted Ohio State agricultural analysts to call it some of the best compost they've ever seen, he said.

What are landscapers doing with this state of the art compost? Well, Scott Byron & Co. uses most of its 10,000 annual cubic yards to condition clay soils in ornamental planting beds. In nurseries it can represent 25 percent of the potting mixture in container growing operations.

The compost also makes a good topdressing for some lawns. "I heavily topdressed my lawn with compost last fall," Gillespie said. "I had a strong weed-free lawn without adding fertilizers all year. And we had a drought. I only watered my lawn twice, and it was green all summer." ■

LOW-TECH OPTIONS FOR BEGINNING COMPOSTERS

Composting doesn't have to be a bells and whistles operation.

Howard Garrett would beg to differ with anyone who insists that entry into composting necessitates high-tech headaches.

The Dallas-based consultant, who himself began in the landscaping business, has worked with many lawn and landscape maintenance companies on the addition of composting to their operations. He insists composting is easy.

He has helped such companies as Lambert Landscape, also in Dallas, realize big savings by doing their own composting. He helped save Lambert \$80,000 a year.

The drive to compost can range from a desire to recycle one's own waste, as was the case with Lambert, to the desire to create a marketable product.

"They were spending \$50,000 a year buying compost in maintaining mostly residential properties and some commercial properties," Garrett said. "They generated a lot of trimmings, shrubs, excess grass clippings (though I try to get everybody to leave them on the ground), spent plants when they changed the annuals out and perennials. They sent all that to the dump to the tune of about \$30,000 a year."

Even at those exorbitant prices, laws limiting and/or banning the dumping of yard waste into landfills has in some areas and will in other locations make it next to impossible to dispose of these wastes.

Getting into composting is as simple or difficult as you want to make it. Good composting is largely a matter of ingredients, Garrett said. Anything that was once alive will work, but the percentage is the key.

"I recommend 80 percent vegetative matter and 20 percent locally available manure. That gives you the same ratio of waste that's on forest floors," he said. And it doesn't take a six-figure capital investment to get started.

"Lambert uses front-end loaders they have on site. I see all these people getting into fancy buildings with floors that flip over, large digesters that turn, equipment that costs millions of dollars. That can be a great mistake."

Low-tech composting will beat overinflated high-tech composting any day, he said. A low-



tech operation uses large static piles, so there's an unlimited volume that can be realized. "You're only limited by the acreage you have. High technology limits you to the size of the million dollar digester you bought."

With static piles, correct moisturization and a good blend of manure and vegetative matter, composting should take seven or eight months, Garrett said. He recommends turning the piles four times during that period using the front-end loaders most landscape firms already have on their grounds.

The professional contractor contemplating a composting operation must give thought to how big an operation it will be. In some situations, landscape companies are being approached by municipalities to compost waste for them. This, in addition to waste brought in by competing contractors and the composting company's own waste can mean quite a business in marketed end product. Here, space is a key consideration.

Companies that just recycle their own yard waste will still need a couple of acres, Garrett said, to be able to have big static piles, move things around and get trucks in and out.

"If you're in the commercial business — you're going to be selling the stuff — you need a minimum of seven to 10 acres."

It's not hard to start up a modest composting operation to recycle your own company's yard waste. Keep a few things in mind, though.

"There's a gigantic misconception that weeds and diseased plants shouldn't be put in the compost pile. Some of the best compost ingredients are weeds. Weeds are chock full of micronutrients. Don't throw them away."

A good compost pile is mixed properly and has 40 percent to 50 percent moisture content, he said. This creates the proper environment for microbial activity inside, at 140 degrees to 160 degrees.

"This heat will kill diseases, weed seed, Ber-

Even companies that are just recycling their own yard waste will still need a couple of acres to work in. Photo: Wastek, Pittsboro, N.C.



muda grass, whatever."

Step one is recycling one's own waste. Step two is making the compost a superior product; this requires adding manure. Resultant compost boasts excellent fertilizing properties.

It's a good lawn fertilizer if well screened. "Mechanically aerate it first, then spread a light layer on. It has tremendous ability to increase humus. Most soils have less than 3 percent humus; some around here have less than 1 percent. Ideally balanced soil has 4 percent to 5 percent."

Good compost boasts excellent NPK and a wealth of trace minerals, he added.

Garrett's simple recommendation on pile specs: Pile as high as your tractor will reach. "They can be 4- or 10- or 20-feet high. The higher and wider they are, the less air they'll have in the center, and the quicker it'll go anaerobic there. Some anaerobic composting in the center is fine, but you want the pile overall composting aerobically. The bigger they are, the wider they are, the more often you have to turn them.

"On the other hand, bigger piles hold more moisture and heat, and compost faster."

What does a landscape contractor need to get started in composting?

"It really is simple. Take an area of ground and start dumping vegetative waste on there. Create a nice mixture; you don't want a whole lot of any one thing, but a mixture of leaves, grass, spent plants, etc. You can grind it; most landscape contractors have a tree chipper or grinder, or a friend or subcontractor who knows somebody who has one. Bust it up into smaller pieces so microorganisms have more surface area to start feeding. The grinder, front-end loader and a sifter are the three things you need for a low-tech operation."

Don't make the mistake of trying to moisturize your piles as an afterthought — it's already too late.

Using a hose or sprinkler, wet the piles as you build them. Add the manure during this pile-building stage. Blend the pile into one homogenous mixture.

There are varying schools of thought on compost load-turning frequency. "It's a matter of how much time you've got. Some people turn it as often as once a week. I turn my compost piles myself about once every two weeks. The largest, best composting operation in Texas turns theirs four times in seven months."

Even if you never turn it, the material will compost. Load turning hastens microbial activity by providing aeration and reducing stench.

There are fine points. "You can add ingredients for a better mixture and more nutrients, like paunch manure, a slaughterhouse by-product —

the partially digested intestines of cows."

As it's already going through the digestive process, paunch manure offers digestive enzymes and microorganisms that "inoculate" the pile. Ideally, a layer of sawdust is applied first, then the paunch (brewer's yeast also works well).

"The only time you have odor is when you bring in raw materials; you smell it from the truck coming in," Garrett said. "Or you don't keep your pile aerobic. The minute you have it in aerobic condition, there will be no offensive odor. It'll just smell like rich forest floor and ammonia."

Garrett graduated from Texas Tech University in Lubbock in 1969, then worked in golf course maintenance. He bought Naud Burnett Landscape in 1976 and merged it into Lambert in 1980. He owned part of Lambert until 1983, leaving to go the design route while Lambert pursued contracting. In 1989 Lambert hired Garrett as an independent consultant.

He predicts composting will boom among lawn and landscape contractors. It's already big in Florida, he said. "It depends on what city or state you're in and whether or not the landfills have been closed down."

What do professional contractors have to gain from using compost?

"The number one thing is economics — money saved. The second is a dramatic increase in soil health." The latter benefit includes proper balancing of populations of both microorganisms and macroorganisms (earthworms and other insects) and improved soil drainage.

"Even if you wanted to continue to use pesticides, this would

help tremendously. Few people realize how important oxygen is as a fertilizer element, and that's one thing compost will do."

Compost can be used as a topdressing, mulch, fertilizer or soil amendment, he said.

Few people also fully grasp the range of uses for compost and its high quality performance. Compost can be used as a topdressing, mulch, fertilizer or soil amendment. Beyond its use in seeding in landscape installation and maintenance applications, "esoteric" uses, such as for athletic fields and golf courses, constitute another area of demand.

Garrett has condensed his expertise into two books, *Plants of the Metroplex III*, about landscape plant material and planting techniques in Texas; and *Howard Garrett's Organic Manual*. ■

*Step one is recycling
one's own waste.
Step two is making
the compost a superior
product; this requires
adding manure.
Resultant compost
boasts excellent
fertilizing properties.*

USING COMPOST IN THE LANDSCAPE

Whether you're replacing eroding topsoil or mulching, compost can provide beneficial results.

Nearly every industry is feeling the need to use more recycled products and landscapers are no exception. The most direct way for landscapers to use recycled products is both to compost and use compost.

WHY COMPOSTING? Yard wastes represent about 20 percent of the solid-waste stream. Add to that food scraps and nonrecyclable paper, and composting alone can recycle at least half of the municipal solid-waste stream. More than a dozen states have enacted laws banning yard clippings from entering landfills, where decomposing yard wastes generate methane gas and contribute to acidic leachate.

Composting these organic wastes recycles them into a beneficial product. Whether composting in a municipal facility, on site at public or private grounds or simply in the backyard, organic wastes can be turned into a useful soil amendment, with particular applications in landscaping.

WHAT IS COMPOSTING? Composting can naturally recycle the organic fraction of the solid-waste stream. Through a process of controlled biological degradation, organic matter is turned into compost. Natural microbial action, which works best when moisture and oxygen levels are maintained, heats and sanitizes the decomposing material. The material is then stabilized and cured.

THE RESULTS. Composting not only offers many environmental benefits, but it also produces a beneficial end product. Billions of tons of topsoil are eroding annually, with higher topsoil loss occurring in cropland regions. The application of compost as a mulch not only decreases soil erosion, but improves moisture and nutrient retention.

Because compost is rich in organic matter, it improves soil's water retention properties and its capacity for water infiltration.

Studies also indicate that compost promotes the growth of plants, and there is plenty of evidence to suggest that compost can be used to suppress plant diseases. Compost can stabilize a soil's pH

and impede the movement, and subsequent uptake by plants, of toxic metals like cadmium and lead.

Since compost improves soil and supports plant growth, it can be applied beneficially in landscaping and land reclamation. Compost already plays a role in maintaining public lands and parks, golf courses and most other open sites.

Reclaiming spoiled lands and rejuvenating salt-damaged soil along roadways can also be accomplished by the application of compost. Damaged and infertile soils are usually deficient in organic matter and nutrients while suffering from a low pH. Compost can help remedy these defects and resolve the associated problems of soil erosion and lack of vegetation.

The U.S. Environmental Protection Agency has recognized composting as a method for controlling non-point source pollution. Compost captures nutrients and keeps them in the root zone, thus lowering the frequency with which they must be applied and reducing chemical runoff that can cause water pollution.

Finally, the use of compost in preference to peat can help preserve wetlands. Commonly specified and used extensively as a soil additive because of its water holding capacity, peat moss is harvested solely and irreversibly from wetlands. Reducing the use of peat or bark mulch as a topdressing and in garden beds and increasing the use of compost can help sustain wetlands, a non-renewable resource.

"Compost is an excellent substitute for peat moss which ties up moisture," said Ed Davis of Shemin Nurseries, Philadelphia. "It improves the drainage around the plant, and as a mulch compost improves health and rejuvenates old beds." Compost that is dark and rich in color can also enhance a landscape area where site soil is light and of undesirable texture.

COMPOST QUALITY. To ensure the safe application of compost, a number of government agencies and private organizations are working on compost standards.

The EPA will soon have regulations in place for the application of sludge and sludge composts. Additionally, the U.S. Department of Agriculture has developed the concept of No Observed Adverse Effect Level. The NOAEL is widely used as an index of environmental safety and refers to a level at which specific contaminants pose no observed threat to human health or the environment.

Also, the Solid Waste Composting Council is developing model legislation and regulations which include compost quality verification and compost classification. The SWCC hopes eventually to have national standards, but is working now with a few states on regulations for compost quality.

"The Council was formed to ensure the infrastructure for safe compost," said Charlie Cannon, executive vice president. "That's what we're working on."

The Council welcomes input from the landscape industry, particularly on market guidelines for compost. Call the SWCC at 800/457-4474. ■



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RANSOMES

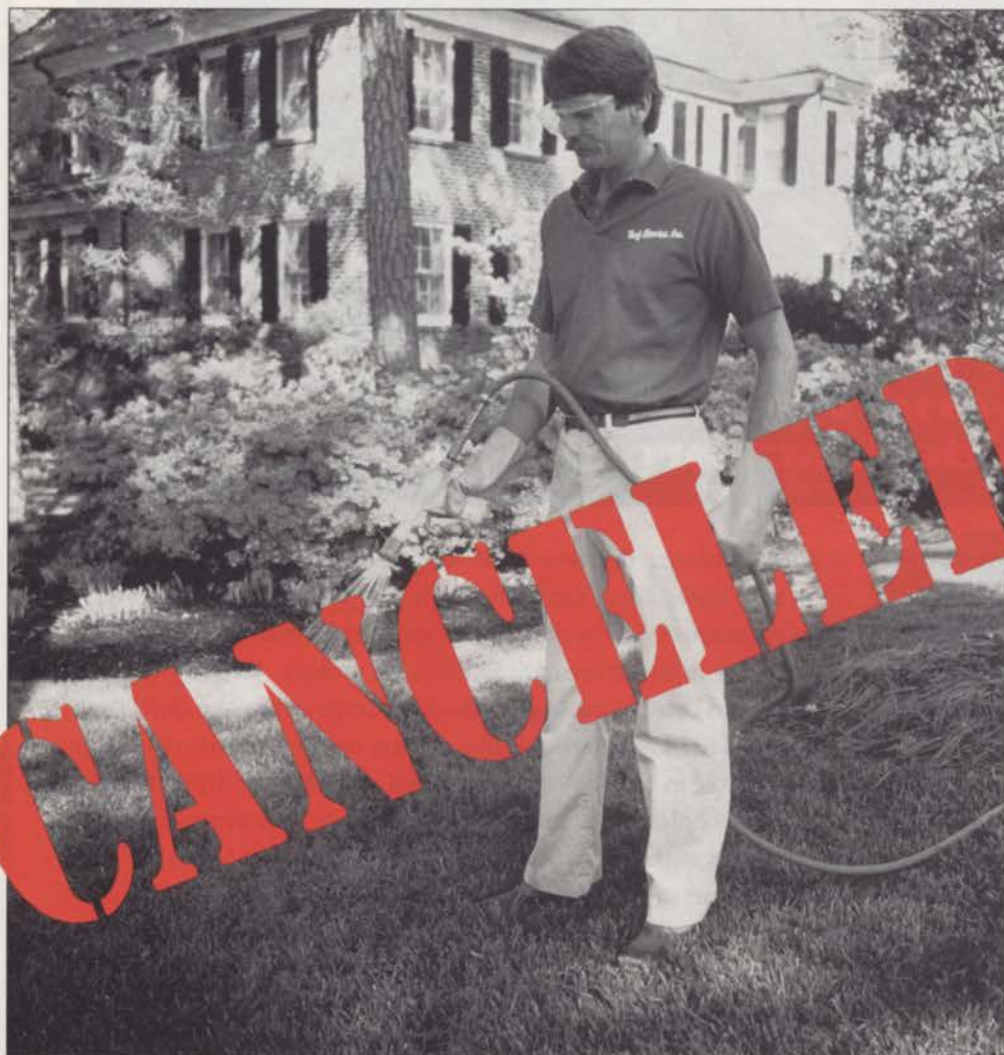
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WHAT'S BEHIND TODAY'S SOARING CANCELLATION RATES?

Contract cancellations of 30 percent or more annually have lawn maintenance operators scared. What are the causes and what can be done about it?

By William Troy



Industry professionals are looking for ways to reduce cancellations in all aspects of their businesses.

THREE YEARS AGO a green industry survey on customer callbacks and cancellations described callbacks as a "way of life," and said the average maintenance operator could expect to lose 20 percent of his business base every year. That same survey indicated that poor weed control accounted for 58.6 percent of all callbacks and by implication, a similar percentage of cancellations.

The lawn and landscape maintenance industry has changed a lot in three years, but cancellations remain a sore point with maintenance professionals. An informal poll across the United States showed:

- Annual customer turnover is now often at a rate of 30 percent or more. At this pace severe contraction within the industry, by merger or business failure, is inevitable, particularly among smaller operators.

- Poor weed control — implying ineffective or inattentive service — will always be a factor. But new forces are at work within the economy, technology and the industry itself challenging the idea that better service alone can lower cancellation rates.

- Too many operators are selling price rather than value.

- To survive, maintenance operators may want to take a hard look at the way they write future sales agreements or contracts.

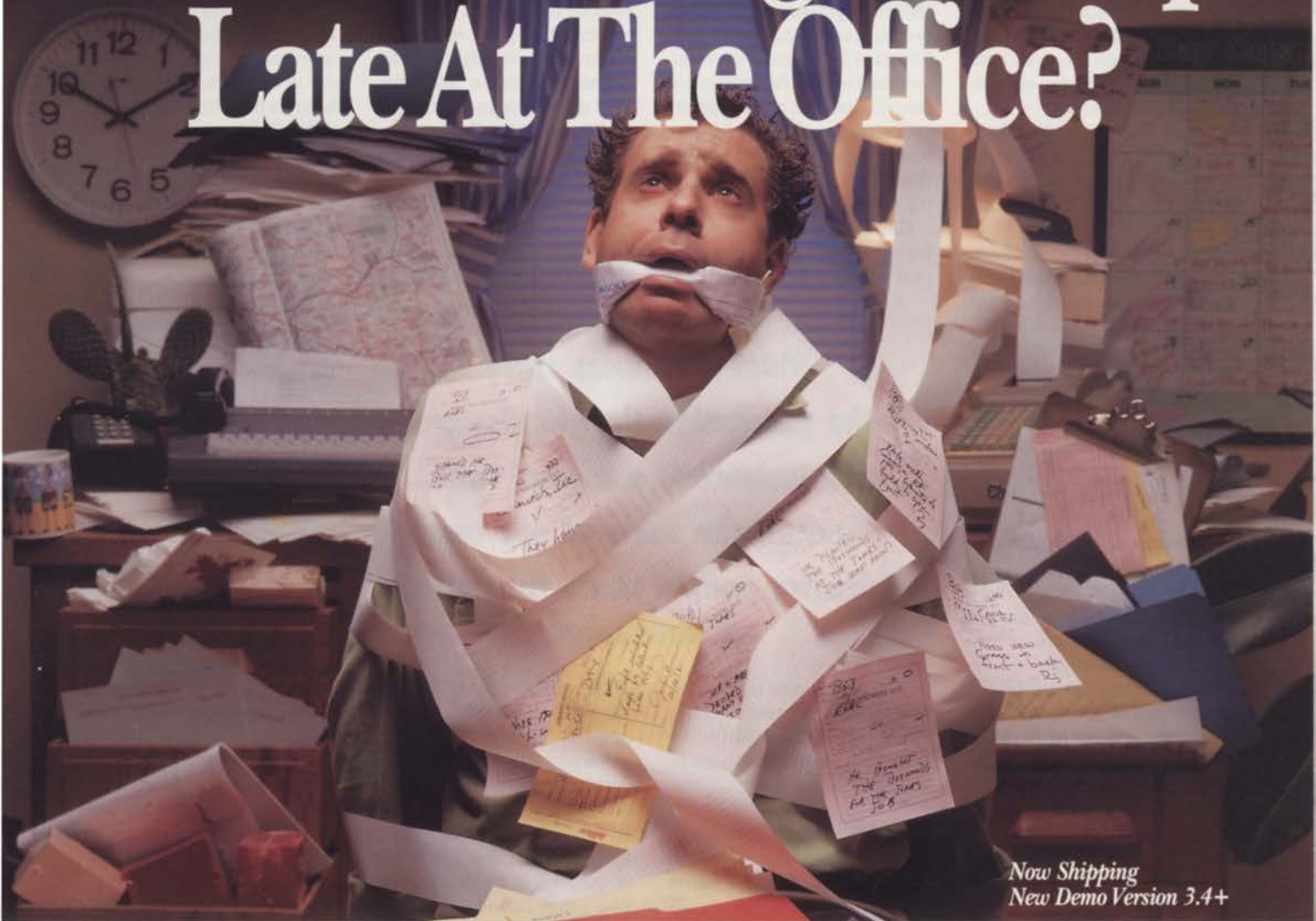
THE SITUATION. Doug Columb, president of Grasshopper Lawns in Naugatuck, Conn., is one of those struggling with a 30 percent or worse cancellation rate. In business 17 years, 90 percent of his work is residential.

"Five years ago," he said, "my cancellations averaged between 1 percent and 5 percent a year. Now they're out of sight — the highest I've ever seen." One obvious reason, Columb said, is the severe drought his area suffered this summer.

"But," he added, "there's a lot more to it than that. The public is confused. They've been listen-

(continued on page 68)

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Cancellation Rates

(continued from page 66)

ing to the wrong people. Chemicals have become a dirty word. I don't believe that's true, and when I can find time to go out to talk to customers, they don't wind up believing it either. But every time there's a new broadside from activists on pesticides or fertilizers, I lose business."

That's only part of his dilemma. "Ever since the economy went sour," Columb said, "we've been undercut by fly-by-night outfits who sell only on price. Whatever bid you make, they go under. They know customers don't have as many dollars now. It's a great time to sell price. What difference does it make if they can't do the job? The ex-customer doesn't come back to me. By that time he doesn't trust anybody."

Connecticut's current sales tax rate isn't helping either.

Joe Webster of Webster Tree & Lawn Care, Huntsville, Ala., puts it more drastically. "Cancellation rates are so bad," he said, "I'm thinking of getting out of the lawn business altogether. People around here have become terrified of chemical treatment."

Despite horrendous rainfall this summer and fall, the situation isn't as grim as it could be for Mike Guthrie and Ground Control Landscaping of Orlando, Fla. Guthrie said his firm is experiencing an increase in competitive bidding, but is still operating at a 90 percent to 95 percent contract renewal rate.

"Two of the reasons why our cancellation rate is lower than average is the way in which we write our contracts and the way in which we prepare our bids," he said. "We have a standard contract, but we look at each contract as a separate entity. We are completely flexible in the way they are written."

For example, when the firm takes on a new client with property in less than first-class condition, the contract is used to describe the condition of the property so that it becomes apparent what services are required to put it in first-class shape.

In such an instance, Ground Control may recommend a one-time property cleanup charge, separate from any ongoing cleanups required. For this, the firm draws a separate contract and

billings by the hour, Guthrie said.

Steven Glover of L&L Landscape Service in Santa Clara, Calif., doesn't want to quantify his cancellation rate increases. But he readily admitted they're accelerating rapidly. Again, extreme drought is a cause. Property owners around Santa Clara are limited to 25 percent of the water they used in 1987. But most of his cancellation calls relate to price.

"People are looking hard at bucks," he said, "and at the same time our operating costs are going up. We can't pass it on."

Glover's firm works on yearly contracts with a 30-day cancellation clause. When there's a

scope maintenance effort may come in the first 60 days of the contract. Well aware of this, the property manager sends a cancellation notice on May 1. ABC Land Maintenance now has to apply almost 50 percent of its operating costs on the contract to only 25 percent of its gross revenue.

Christian's remedy? "Junk the cancellation clause altogether. That doesn't mean the contract can't be broken by the customer. It does mean the customer may have to legally demonstrate the work was not performed as promised."

Christian is less enthusiastic about simply extending the can-

lawn maintenance firm, "but I'm so busy trying to get new customers to replace cancellations, I don't have time to train my people properly. And even if I do, my labor turnover rate is 50 percent or better a year."

Christian said he believes the only solution for the industry is in greater professionalism. "The day of the quick-fix is over." He believes that ultimately the only way to reduce cancellation rates is to sell value, not price.

"Most contractors, when they bid on an extensive landscape maintenance job, don't really know exactly what it will cost them to keep their promises. They'd be far better off selling their customer on the value of the work to be done and the value of the people who will do it.

"It's pretty difficult," Christian added, "when you have a situation like we do in some western states where many maintenance crews don't speak the same language as their customers. Too many of us see ourselves simply as chemical applicators or cutters. We're going to have to do more customer hand holding, and take a more realistic look at their needs, whether it's our ability to do the job or their fears over environmentally questioned materials."

Are cancellation rates of 30 percent dangerous. "I'd rather say catastrophic," Christian said. "Anything over 3 percent is abnormal."

MEASURING VALUE. Frank Ross, another industry consultant headquartered in Barrington, Ill., agrees with Christian that contract terminology is a major evil, but he has a somewhat different remedial approach.

"There is nothing in most maintenance contracts that measures value," Ross said. "We would better protect ourselves if we insert a paragraph in contracts which allows the contractor to bill, on notification of cancellation, for all services performed to date." Ross said this is a better solution than simply eliminating the 30-day cancellation clause altogether.

Ground Control suggests maintaining weekly contact with existing customers. "This way we know that a problem can't fester for more than seven days," Guth-

(continued on page 70)

Most customers carry the perception that landscape maintenance is a menial task... And maybe some of our own industry people share that view.

cancellation, a note is placed in a tickler file for personal executive follow-up. "We bid fairly," he said, "but we're facing a lot of competition that doesn't."

THE CURE? To Phil Christian, an industry consultant based in Alpharetta, Ga., the major reason for the present blizzard of cancellations is the 30-day cancellation clause in contracts.

"It's what I call a no-contract contract," he said. "It's a built-in loophole, particularly for professional property managers. And in these recessionary times, smart industrial purchasing agents and property managers are very aware of it."

Here's the way Christian describes a typical situation:

XYZ Corp. has a headquarters and manufacturing plant with extensive, landscaped grounds. On March 1, they sign a 12-month maintenance contract with ABC Land Maintenance, with the usual 30-day cancellation proviso.

This "nice-guy" contract also allows the customer to pay his bill in 12 even monthly installments, like the budget plan on a fuel bill. But 40 percent of the land-

cancellation clause out to 90 days, although he admitted it could help.

Are property managers and industrial purchasing agents being deliberately vicious? "Not usually," Christian said. "They're in the same economic vise as the rest of us. Look at it this way. Suppose you're running a manufacturing operation with 1,000 employees. Orders suddenly tumble. Hundreds of employees are laid off. Just as suddenly, your maintenance crew has a lot less to do. From the company's point of view, doesn't it make sense to buy a few mowers and garden tools and let your own maintenance crew do the work?"

Which leads directly to Christian's second major contention. "Most customers, residential or commercial, carry the perception that landscape maintenance is a menial task, requiring no particular training or skill. And maybe some of our own industry people share that view. A lot of us seem to have a mow-and-go attitude, and this can be conveyed to our customers."

"Sure," responded the president of a Columbus, Ohio-based



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Cancellation Rates

(continued from page 68)

rie said. "We do this with every customer and I do it personally."

The solution to the bidding and renewal process lies in asking all the pertinent questions up front; being sure of what clients believe they need and resolving any conflicts between what they think they need and what they actually need ahead of time, he added.

Value can also be defined before the bidding process begins. Ground Control offers to write bid specifications for potential customers prior to actual bidding. This technique assures the client and Ground Control of an "apples to apples" bid.

"All too often bids come in from contractors who are overselling what can be done for the price requested," Guthrie said.

Ross thinks another industry activity is equally at fault in creating an environment for high cancellation rates.

"In many cases," he said, "lawn maintenance companies use in-house telemarketing to recruit

new customers. For the most part these phones are manned by young people who have little or no knowledge of the business, but who are very anxious to report new sales. Promises are often made that simply can't be met at the prices quoted. Inevitably, this leads to customer dissatisfaction."

Questions and concerns surround the use of alternative products as well.

"In using organics," he said, "the customer has to understand the concept. He has to know the process will be somewhat slower, and that initially it will cost more. I know this is a tough sell in a soft

products, biologicals and organics can open some doors for professional operators.

Lambert's Landscaping of Dallas, Texas, last year decided to offer only organic materials. Public response has been extremely favorable and business has increased.

Howard Garrett, a landscape architect who has worked with this firm, said he's noticed the organic approach is particularly appealing to large corporations in the Dallas area whose employees and neighbors want an alternative product.

According to Garrett, Lambert doesn't have any contract cancellations because it doesn't have any contracts. All of their business, he said, is done on a handshake. In Texas, that has often been more binding than something written on paper. It also says something about the trust and professionalism that must be involved between the maintenance professional and his customer. ■

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

Attention to contracts and bid preparations may help reduce cancellations in the lawn and landscape maintenance industry.

The industry has to take greater cognizance of environmental concerns as well, Ross said. "The public is buying into this a lot faster than our own industry. We have to take a careful look at our options, and know what to do in each situation.

economy, but if only from a technological standpoint, our industry has to show itself responsive to public concerns."

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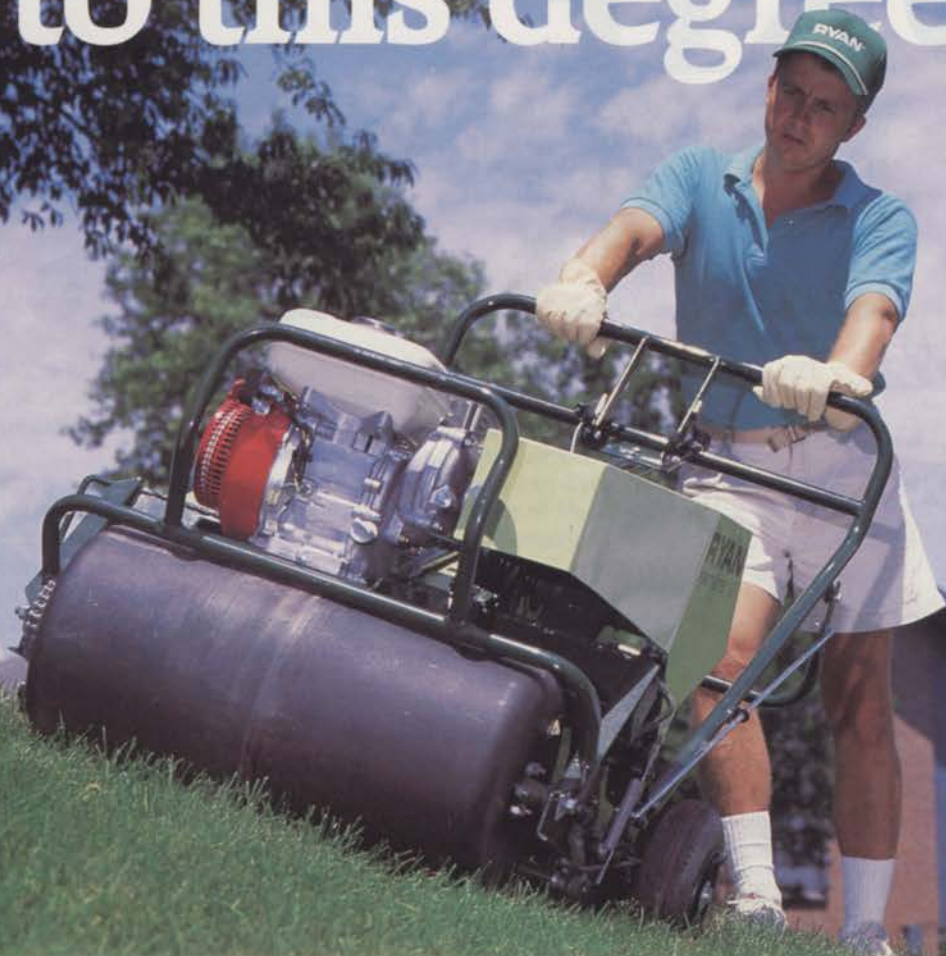
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Drip irrigation is probably not used more extensively in the landscape industry because of a lack of experience and education on its benefits and proper use.

By Sam Tobey

DRIP IRRIGATION has proven effective for irrigating many different types of crops. In this regard, the agricultural industry has accepted drip irrigation fairly internationally. Why then, in an environment of water shortages and a national emphasis on water conservation, is drip irrigation not used more extensively in the landscape industry?

To a large extent, it is a lack of experience and education on the benefits and proper use of drip irrigation. It should be noted, however, that while many good drip irrigation components exist in the marketplace today, a drip irrigation system, like any other system, is no stronger than the weakest link in the sequence of design, installation and maintenance.

Therefore, this article will strive to provide some insight into drip irrigation as it applies to landscaping, and to each vital element specifically. While drip irrigation may be divided into point source and line source dissemination, this feature will only address point source dissemination.

SYSTEM COST-EFFECTIVENESS. A lot of information has been published on how much water can be saved by using drip irrigation. While this is basically true, it is important to recognize that the basic water requirements for any plant in a given environment is the same no matter how it is irrigated.

Water savings in drip irrigation stems from more efficient application of water. A drip system maximizes the water going to the plant root zone and minimizes the losses associated with evaporation, overspray and wind effects. This alone can represent a considerable advantage in operating costs.

However, when evaluating the cost-effectiveness of a system, both initial acquisition and life cycle costs must be considered. There is enough empirical data available regarding these costs to indicate that the price of a drip system is a function of plant spacing. The greater the plant spacing, on average, the less expensive a drip irrigation system will be on both an absolute basis and on a relative comparison basis.

For example, in relatively flat areas, drip irrigation is more cost-effective than overhead spraying for plant spacings of about three feet or greater. Operational constraints such as slopes, crib walls and interiorscaping may make drip the preferred system.

INITIAL ACQUISITION. When buying materials for a drip system, considerable savings can generally be gained in the supply system, (remote-control valve, strainer and pressure regulator), compared to an overhead spray system. This savings results from the relatively lower flow rates involved.

As a result, the entire system can be downsized, using smaller, less expensive pipe diameters, valves, pressure regulators and filters. In addition, smaller components are usually easier to put in place leading to further reduced installation costs.

Laying out a 500-foot length of flexible PVC hose and punching in emitters is also less labor intensive than connecting 500 feet of 20-foot lengths of rigid PVC pipe, and plumbing-in spray heads.

LIFE CYCLE. Life cycle costs generally consist of amortization of the initial acquisition cost, plus operating and maintenance costs.



The absolute cost of these elements depends on the specific project. However, since the initial cost of a drip system should be less than an overhead spray system, and the life of a quality drip system can easily equal that of an overhead spray system, the amortization cost will be less.

Likewise, since considerably less water will be used as well as any liquid fertilizers introduced through the irrigation system, operating costs will be fewer. With regard to maintenance costs, experience has shown that a drip system, using quality components, requires only slightly more maintenance than conventional systems.

Maintenance of the valves, pressure regulators, backflow preventers and similar components will be no different than for an overhead spray system. Drip systems do have to be flushed periodically which could add to maintenance costs. To compensate, maintenance labor associated with other factors is reduced.

For example, because areas bet-

ween plants are not normally watered when using drip, weed growth is generally less and labor associated with their removal is reduced. Another advantage of

range of elevation pressure changes.

Because of the self-flushing feature, emitters are tolerant of potential contamination. This is

**Experience shows that
a drip system, using quality
components, requires only slightly
more maintenance than
conventional systems.**

drip irrigation is that it does not wet sidewalks or streets, possibly avoiding potential liability actions against the owners.

DESIGN CONSIDERATIONS. Drip irrigation has improved dramatically in the last several years. Consistently reliable pressure-compensated, self-flushing emitters are now available to deliver constant flow rates over a wide

important because no matter how fine a filter screen exists downstream from a filter, it can still pose a contamination threat. Likewise, submicron particles can agglomerate after the filter.

The biggest problem, however, usually occurs during the repair of a pipe or hose line downstream from the filter. This almost always introduces particulate contaminants into the system.

In addition to quality emitters, however, it is important to remember that, like any other irrigation system, drip irrigation is basically a hydraulic system and should be treated as such. It has limits as to how many emitters can be put on a line, as well as the maximum length of that line.

In this regard, hydraulic calculations using pressure-compensated, self-flushing emitters can be somewhat complicated. Even though these emitters can represent great advantages in an operational sense, they do create an added hydraulic consideration.

Emitter pressure and subsequent flow during the flush state must be considered. This consideration is no different than that required for a pressure-compensated bubbler or sprinkler, or for that matter a pop-up that loses a certain amount of water in the "popping" state, but it should be taken into consideration when making hydraulic calculations.

The number of pressure-compensated, self-flushing emitters inserted on a 3/4-inch line varies depending on lengths for various

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pressures.

Not only are hydraulics important, but the selection of supply system components can be critical as well. For example, some 1-inch remote control valves require a minimum of 10 gpm to operate reliably. On the other hand, there are also some 1-inch valves that will work reliably at less than 0.25 gpm.

Selection of pressure regulators can also be critical. Generally, a remote control valve and separate pressure regulator have proven more reliable than a remote control pressure regulating valve. From a maintenance standpoint, fixed output pressure regulators are generally preferred because maintenance personnel in the field do not have to decide where to set the regulator.

This is particularly critical if there is not a pressure gauge in the system downstream from the regulator. Again, from a maintenance standpoint, a screen flushing capability incorporated in the strainer can be quite important. The easier an item can be maintained, the more likely that it will



be properly maintained.

Detailed design installation of the emitters is also important from both an operational and aesthetic viewpoint. Dissemination of water underground can often present a problem. When water is disseminated underground, a mud slurry is often generated at the point of discharge.

When the system is turned off, a negative pressure may occur in the line relative to the point of dis-

charge. Large quantities of contamination could then enter the system. This contamination may, or may not, wash out during subsequent irrigation cycles.

From the standpoint of aesthetics, the drip line should be buried along with the emitters, but the point of discharge from the distribution tubing should be above the soil (Figure 1). Burying the point of discharge under gravel or bark chips, however, would not

A sprinkler head on a 1/2-inch riser converted so as to allow emitter distribution. Photo: Olson Irrigation.

normally represent a problem.

There are circumstances, such as providing supplemental irrigation to a tree in a turf area, where the point of discharge must be buried. In these cases, care should be taken to protect the point of discharge from exposure to a mud slurry.

Discharging the water into a piece of buried screened plastic pipe filled with gravel is one approach. Another classic problem with disseminating water below the surface is root infusion. Roots can penetrate into almost any underground disseminating point to find the source of water.

INSTALLATION. For this discussion, the installation of a drip system has been divided into three areas: supply system, distribution system and dissemination system.

The supply system of a typical drip irrigation system generally consists of the same components as a standard overhead spray sys-

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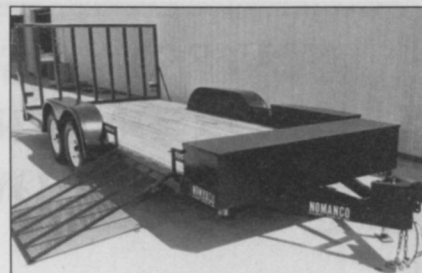
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tem; i.e., backflow preventer, chemical or fertilizer injector, strainer, pipe transport system, valves, pressure regulators, etc. Installation of these components would be no different than that for a conventional system.

To minimize the pressure loss between the regulator and the drip emitters, the pressure regulator should be the last item installed in the supply system and should be as close to the first emitter as possible.

With fixed output pressure regulators and pressure compensated emitters, this configuration results in the maximum number of emitters that can operate on a line of a given diameter. If the supply pressure is extremely high, the pressure regulator should obviously be installed before the valves.

The distribution line is the line on which the emitters are mounted. This line can be either rigid or flexible. If a rigid line is used, it is generally PVC, although it could be made of almost anything.

Use of a rigid distribution line

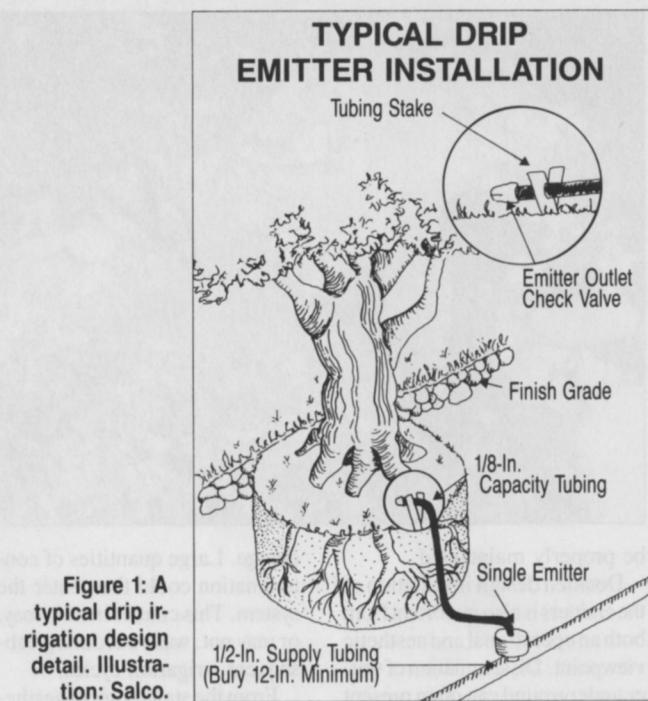


Figure 1: A typical drip irrigation design detail. Illustration: Salco.

can be fairly labor intensive. The line must be cut, a fitting installed in the line, a riser installed in the fitting and the emitter (with the proper slip or threaded adapter) installed. If emitters are to be in-

stalled every five or six feet, this can be an extremely tedious process.

If a flexible distribution line is used it would probably be PVC or PE. With either type the hose

should be cut leaving a smooth, even square end. Saws of any type should be avoided. Holes for installation of the emitters should be made only with the punch recommended by the manufacturer of the emitters.

Tools similar to pliers are available and permit the efficient and rapid punching of holes without the possibility of punching through both sides of the hose.

PVC flexible hose is designed to use standard PVC plastic pipe fittings. These are solvent welded to the hose. The process is identical to that used with rigid PVC pipe. In addition, PVC flexible drip hose generally has a much heavier wall than the corresponding PC hose. It is also fairly resistant to kinking and crushing. PE cannot be solvent welded, so fittings must be either barb type or compression type. One problem with PE hose, however, is that dimensional standards vary among different manufacturers. There are more than 20 different sizes of what is classically called 1/2-inch tubing in the market-

(continued on page 78)

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USE READER SERVICE #21

Drip Irrigation

(continued from page 76)

place. While there are proper fittings for each size of hose made, great care must be taken to ensure that the correct fitting is used.

The disseminating system is basically the emitter. Depending on the system design, however, it can include access sleeves, transfer barbs, spaghetti-type tubing, bug caps (small check valves) and tubing stakes. A variety of emitters are available and most are extremely easy to install. If emitters have both an inlet barb and an outlet barb, make sure they are installed correctly.

PREVENTIVE MAINTENANCE.

This area is probably the most important, but least understood part of a drip system. It can minimize the amount of corrective maintenance required and significantly extend the life of a drip system.

Tubing can be installed with minimum turf disturbance.
Photo: Peppo Products.

System Pressure: Pressure gauges that have been installed at strategic locations in the system should be observed frequently and compared with the design setting.

A pressure gauge downstream from the filter will indicate when the filter needs to be flushed, cleaned or changed. A gauge downstream of the pressure regulating device will identify a problem with the regulator or regulator setting. A gauge downstream from the backflow preventer will aid in the detection of a problem



in the backflow preventer itself, or in the supply pressure to the drip system.

These gauges also detect leaks or obstructions in the system if either causes a major change in the system pressure. Most designs will specify a minimum and maximum system pressure.

System Flushing: Many self-flushing emitters can pass particles several times larger than the particles that can pass through the filter. However, the relatively low water velocity can permit contaminants to settle at the bottom

and the end of the distribution line. The lines should be flushed periodically, particularly whenever repairs have been done on the system. All drip systems should have some mechanism for flushing. It is important to recognize that, when flushing, the flushing mechanism should be wide open and the flow should not be restricted. Flushing for 30 to 60 seconds is usually adequate. The flushing frequency will depend on the water source. Monthly flushing is adequate in most areas that use municipal water. If well water is used, flushing may be required more frequently.

Salt Deposits: In some areas, salts can precipitate out of solution and deposit on the emitters when the water evaporates. If salt accumulates at the emitter outlet, run a weak acid solution through the system to dissolve these salts. If salt deposits occur frequently, this procedure should be done several times a year or whenever signs of salt deposits appear on an emitter.

Winterizing: Where applicable,
(continued on page 80)

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MAINTENANCE

Drip Irrigation

(continued from page 78)

the same procedures used for winterizing conventional systems should be used including draining or blowing of the lines.

Irrigation Scheduling: The percolation rate and saturation level of the soil can change over time.

Likewise, environmental conditions change. Therefore, observe the site regularly for any indications of puddling and runoff. Also, change the length and/or frequency of the irrigation cycle to eliminate any problems that may occur.

CORRECTIVE MAINTENANCE. If the system has been operating properly, and a problem or change occurs, quick corrective action is essential. Operational problems with a drip system can usually be attributed to one of two causes — a change in the pressure to the emitter or contamination in the emitter.

Changes in pressure are usually the result of failure of a pressure regulator, changes in the field adjustment of the regulator or major changes in the system flow rate. Changes in flow rate are a result of a leak or break in the system, an addition to the system or possibly an irrigation rescheduling such that multiple stations are operating simultaneously.

Contamination can enter the system during the repair of a drip line, from a puncture in a filter screen or improper replacement of a filter media or screen during maintenance operation.

Emitter Flow Rate Change: If the emitter flow rate has suddenly increased, the problem is probably due to either a change in pressure to the emitter or to emitter contamination. In a standard orifice-type emitter with constant geometry, flow rates are proportional to pressure, therefore an increase in flow rate is due to an increase in pressure at the emitter.

On the other hand, pressure-compensated self-flushing emitters generally have a diaphragm that reduces the flow channel as the pressure increases. Therefore, if an increase in emitter flow rate is experienced, it is because the diaphragm has not "seated" properly. This is usually due to one of two reasons — a decrease in the pressure at the emitter diaphragm or particulate contamination under the diaphragm.

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If the emitter flow rate has decreased, it's due to either contamination that has reduced the flow channel area or, in the case of a pressure-compensated emitter to excessive pressure.

System Leakage: Emitters can blow apart, can blow out of the hose or adapter, can leak where the inlet barb enters the hose or adapter or the hose can balloon and fail. These could all result in an increase in pressure at the emitter.

Increased pressure results from a malfunctioning or improperly adjusted pressure regulator, an increase in system supply pressure if no regulator is in the system or possibly a major decrease in system flow rate resulting from an increase in pressure.

CONCLUSION. A quality drip irrigation system can be beneficial to a landscape in terms of water conservation, aesthetics, vandal resistance, potential liability actions and overall cost-effectiveness if properly designed, installed and maintained.

There are several drip irrigation installations operating today, for example, that were installed more than 20 years ago. In this regard, it is important to keep in mind that initial material acquisition cost is not the most important parameter when considering the cost-effectiveness of a drip irrigation system. ■

The author is president of Salco Products Inc., Hawthorne, Calif.

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FIELD BURNING:

IS IT A SMOKE SCREEN OR FIRE STORM?

The pressure brought on by Oregon's recently passed field burning regulations heightens the immediacy of the search for alternative solutions.

By Andrea Mackin

WHAT REALLY LIES at the heart of the controversy over field burning may never come to light, but both those for and against burning agree on one thing: The current search for alternative practices cannot come soon enough.

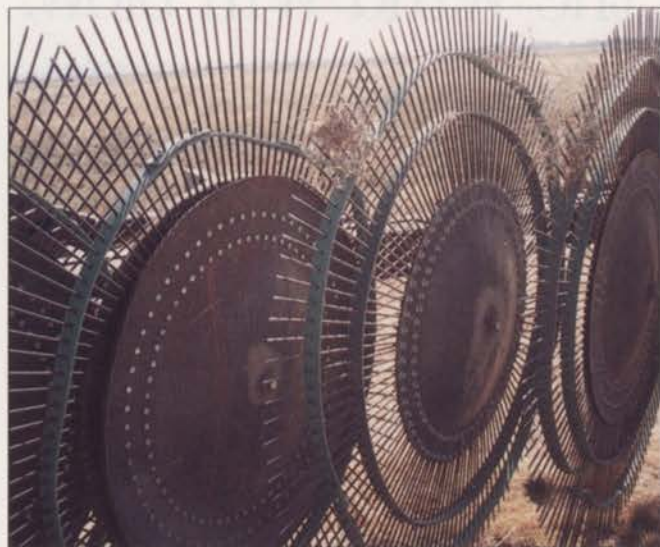
To anti-burning advocates and local environmental groups, the failure of farmers and researchers to produce a viable alternative to the annual practice of grass stubble burning is evidence of their refusal to recognize the seriousness with which they intend to put a stop to burning.

But from the farmers' and seed industry's perspective, the day can't come soon enough when they will no longer have to rely on the mechanical burning of grass stubble to induce new seed formation. The battle is an old one, and an annual one; and isn't likely to go away until science, politics or economics finds a solution.

In an effort to help propel alternative research forward, the Intermountain Grass Growers Association, a group made up of Washington and Idaho grass farmers, has invested more than \$4.2 million in research since 1986 to find alternatives to field burning.

Earlier this year, the IGGA presented a \$50,000 check to Gary Lee, head of the Idaho Ag Experimental Station and associate dean for Agricultural Research at the University of Idaho; along with \$161,325 in "in-kind" contributions as matching funds for the \$100,000 research appropriation from the 1991 Idaho legislature for research into field-burning alternatives.

Staff member Glenn Murray is assigned with the task of administering the research program in hopes of identifying the genetic mechanisms responsible for regulating seed production in Kentucky bluegrass.



Crazy Wheels, a system of spinning tines and rakes, may be an alternative to conventional field burning. Photo: Jacklin Seed, Post Falls, Idaho.

To date, and to the credit of some maverick scientists and inventors, a number of alternative methods have been tested to reproduce the effects of grass stubble burning on Kentucky bluegrass. Some of the ideas are mechanical refinements of basic farming concepts, such as the drew-cutting machine and dethatcher created by two Oregon inventors.

While others, such as Microblaze and LNS Trace Builder, are more snake oil or magic potion. Several, however, have shown signs of hope, and while they are still in their experimental stages, a number of these alternatives may

have the potential to be part or all of the solution.

INVIGORATOR/DETHATCHER.

Engineer and inventor Art Krenzel, president of Phoenix Industries of Lebanon, Ore., believes that by mechanically raking and removing grass straw from the fields he can reproduce the effects of field burning and eliminate the necessity to burn.

His invigorator or dethatching machine consists of two counter-rotating wheels equipped with tines acting as spinning rakes. These rakes are attached to a frame, pulled behind a 35-h.p. tractor and are designed to rake and remove the straw and thatch from a freshly harvested grass field.

Krenzel's experiments are currently being conducted on a 15-year-old field of Kentucky bluegrass on Northern Idaho's Rathdrum Prairie, and will include several variations. As additional variables, Krenzel will add either vacuuming, brushing or "crew cutting" which imitates the effects of a rotary lawn mower.

In each case, the straw will be bundled or "loafed" at the edge of the field and continuously sprayed with water to aid the natural composting process. In theory, the organic material will have completely decomposed by the following spring through the action of its own nitrogen content. The end-product will be a high-quality top soil which can be spread back over the fields. If the dethatcher is successful in duplicating the effects of burning, the next question will be one of cost.

Glenn Jacklin, operations manager for grower services at Jacklin Seed Co., Post Falls, Idaho, estimates that the cost for mechanical raking may be around \$37

(continued on page 84)

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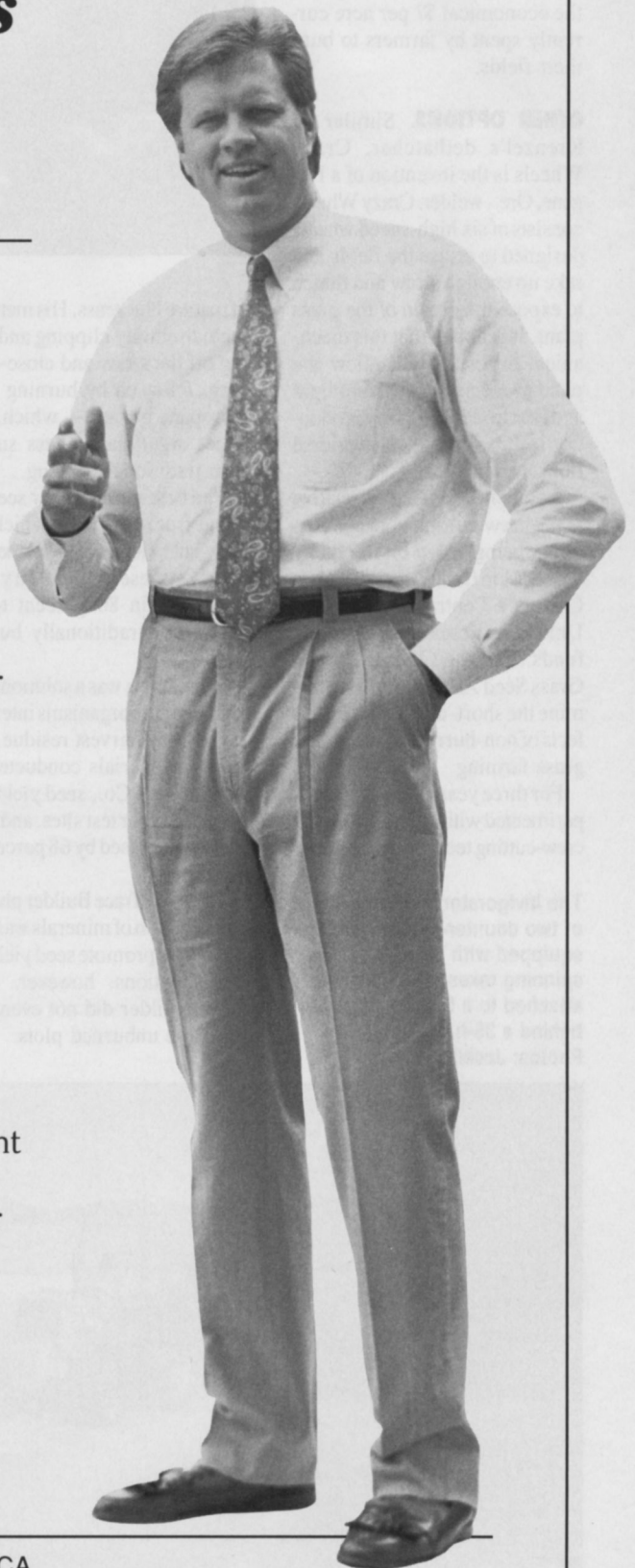
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Field Burning

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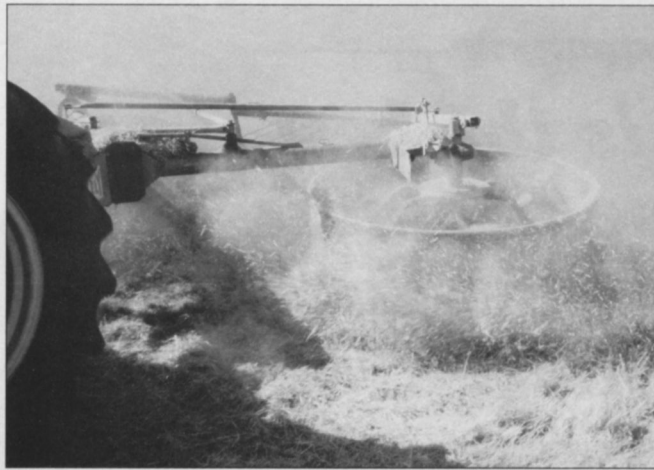
per acre, compared to \$30 per acre to bale, \$15 per acre to pile the straw in a "loaf" for composting, \$10 per acre for dethatching, and the economical \$7 per acre currently spent by farmers to burn their fields.

OTHER OPTIONS. Similar to Krenzel's dethatcher, Crazy Wheels is the invention of a Eugene, Ore., welder. Crazy Wheels consists of six high-speed wheels designed to cruise the fields and rake up enough straw and thatch to expose the crown of the grass plant. It is hoped that this mechanical exposure will allow the plant to receive enough sunlight and heat to stimulate seed production in the same way conventional field burning has.

Another promising alternative is the crew-cutting concept currently being tested on Kentucky bluegrass in Central Oregon. Dale Coates, a Central Oregon State University researcher, is using funds from the Central Oregon Grass Seed Association to determine the short- and long-term effects of non-burn Kentucky bluegrass farming.

For three years, Coates has experimented with close-clipping or crew-cutting techniques on stands

The invigorator, (top), consists of two counter-rotating wheels equipped with tines acting as spinning rakes. The rakes are attached to a frame and pulled behind a 35-h.p. tractor. Photos: Jacklin Seed Co.



of mature bluegrass. His methods include simply clipping and baling off the straw and close-clipping, followed by burning with a propane burner — which produces significantly less smoke than traditional burning.

The best results so far seem to come from the fields which are crew-cut followed by propane burning. On these fields, seed yields come within 80 percent to 90 percent of traditionally burned fields.

Microblaze was a solution containing microorganisms intended to eat away harvest residue. But in research trials conducted by Jacklin Seed Co., seed yield was poor at all four test sites, and seed yields decreased by 68 percent to 92 percent.

The LNS Trace Builder plus 3X combination of minerals was also thought to promote seed yield. In test situations, however, LNS Trace Builder did not even out-yield the unburned plots.

VARIETAL RESEARCH. As new advances are made in understanding the physiological actions of field burning at the molecular level, larger seed companies are turning to their own plant breeding programs to begin working toward the development of varieties which will not require burning.

Doug Brede, Jacklin Seed Co.'s

mine which new cultivars require burning, and if so, how much.

With the future of burning in question, this may become a key factor in determining the commercial viability of new varieties and their potential for suitable yields.

RESIDUE MANAGEMENT. The added economic cost and disposal problem created by the lack of an aftermarket for the baled straw has been a prohibitive factor to some straw removal techniques. The search for economic uses for the straw left by the mechanical alternatives to open field burning have produced a number of experimental projects.

One solution currently being tested in Coeur d'Alene, Idaho, adjacent to the Rathdrum Prairie, is a plan to mix ground-up grass straw with treated sewage to create a sludge which would be broken down through composting.

The grass would add nitrogen

The elimination of open field burning dramatically increases the need for weed and insect control efforts.

director of research is leading research efforts for the industry. By screening new varieties in their final stages of development and testing, Brede is working to deter-

to the sludge and create a high nitrogen and carbon soil additive which could be sold by municipalities to landscape contractors, lawn maintenance professionals and homeowners.

For those concerned about the environmental impact of field burning, the repercussions of not burning bear some consideration. If open field burning is eliminated, the weed, pest and rodent control currently provided by annual burning would result in the tripling of needed agricultural weed control chemicals, insecticides and fungicides.

This non-burn alternative currently being tested is said to produce a 200-fold increase in airborne particulates, most of which remain close to the ground but impact the breathable air more intensely than the airborne particulates created by conventional field burning.

At no time has open field burn-

(continued on page 86)



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Field Burning

(continued from page 84)

ing violated the 24-hour particulate matter air standards set by federal and state regulations.

WHAT NOW? With the recent passing of a bill calling for the gradual reduction in the number of acres allowed to be burned by 1998, the Oregon legislature has touched off a fire storm of controversy for Washington and Idaho farmers.

The Oregon legislation limits burning in the nine counties of the Willamette Valley, where the bulk of the state's grass seed is grown, and applies only to the annual burning of tall fescue, perennial ryegrass and other non-bluegrass species. Nevertheless, public perception is such that Oregon has taken a progressive stand on the issue and has moved to eliminate the practice of grass field burning.

This misconception has added significant weight to arguments of those opposed to burning and seems to be reinforced by the press and media's failure to deliver com-

plete information. The Oregon legislation intentionally excludes any limitation or ban on burning Kentucky bluegrass species in acknowledgement of the fact that Kentucky bluegrass is dependent upon annual burning to promote growth and seed head formation the following year.

licity aimed at eliminating field burning. The single biggest problem created by the Oregon legislation seems to be this lack of knowledge regarding the "species-specific" nature of the burning reductions.

Even with the void of information available on the actual health

alternative solutions. And, where 10 years once seemed like a reasonable period of time to find an answer, now five years may even be too long.

As the research continues and the anti-burning advocates prepare to heat up the argument for another legislative season, the big question that remains concerns the economics of alternatives. Current technology may find it hard to create a viable option which can compete with the present \$7 per acre cost of open field burning.

While it is tough to put a dollar figure on the economic impact that the elimination of field burning may have, speculation is easy.

Using the simple economic principle of supply and demand, the effects of an enforced change in farming practices will be far-reaching. If the cost of farming goes up by as much as \$70 to \$80 per acre, the cost will be passed along to the production companies in the form of more costly contracts with growers.

This will force the price of the

(continued on page 88)

Although still experimental, several field burning alternatives show potential.

Because no viable alternative exists to date, Oregon's Kentucky bluegrass crop (grown mainly in the central portion of the state) as well as an extra 25,000 acres for highly erodible or heavily disease infested land are exempt from limitation.

Somehow, this essential distinction between the types of grass being regulated never seems to surface — especially within pub-

risks associated with field burning, the public still believes Oregon to be more progressive, and therefore must know something the others don't about the dangers of field burning. This adds another dimension to the complex scenario faced by Washington and Idaho grass farmers.

The pressure brought on by Oregon's restrictions heightens the immediacy of the search for

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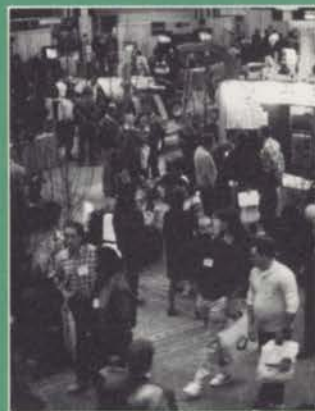
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Field Burning

(continued from page 86)

resulting grass seed up, as yields decrease and costs increase. For lawn and landscape maintenance contractors this means a direct increase in wholesale and retail prices, compounded by projected shortages in improved varieties of certain grass species which require burning for adequate seed yield.

While species not as dependent upon the effects of burning might be offered to fill the void, their increased susceptibility to disease and level of quality must be considered.

As a result, lawn maintenance professionals, golf course superintendents and retailers may see long-lasting effects on the quality, pricing and availability of premium turfgrasses in the future. One of the key areas in question, North Idaho's Rathdrum Prairie, is the leading production area in the world for Kentucky bluegrass. Coincidentally, the Rathdrum Prairie is also the main focus of the newest anti-burning efforts.

If only the Kentucky bluegrass crop is considered, an estimated 60 million pounds pro-

duced in Washington and Idaho in 1990 contributed more than \$105 million to the local economy. Revenue generated by the grass seed industry includes not only the obvious costs attached to cleaning, processing, packaging and transportation — but also provides a major income to the fertilizer and chemical industry.

For so much of the United States, Kentucky bluegrass is still the species of choice for cool-season turfgrass.

At this point, with the search for burning alternatives still in its infancy, can the industry truly afford the effects of enforced regulation of field burning? Hoping the pace of research quickens and that current methods being tested prove successful is fine, but the outcome ultimately lies in the hands of the consumers.

With a better understanding of the status of the search for alternatives, lawn and landscape maintenance professionals must decide for themselves: Are you willing to support current farming efforts until alternatives can be found, or wait for the ultimate consequences of a blind effort to eliminate field burning?

The author is director of public relations and advertising for Jacklin Seed Co., Post Falls, Idaho.

A Kentucky bluegrass field shows re-growth after being propane burned. Photo: Jacklin Seed.



COMING NEXT MONTH

Don't miss Lawn & Landscape Maintenance magazine's fifth annual Technical Resource Guide coming next month. In it we'll feature a year's worth of technical information from the experts. From diagnosing turf diseases to preplanning an irrigation system, this popular issue is a handy guide to some of the industry's most commonly asked questions.

Just a few examples of what you'll find — Cashing in on Compost: as horticultural wastes come under increased scrutiny, clients and municipalities will look to the landscape contractor to help solve their disposal problems. Pesticide Management: The proper handling, mixing, loading and applying of pesticides are essential to any professional pesticide management program. Irrigation Management: Preplanning goes a long way in irrigation installation and maintenance.

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Circle 128 on reader service card

Three front-mounted implements are now available to mount on the **Walker** mower tractor.

The 42-inch, 2-stage snowblower, 47-inch rotary broom and 46-inch dozer



blade each mount on the tractor by a quick-change hitch system. Implements are raised and lowered by an electric power lift built into the hitch.

Circle 129 on reader service card

Ferris Industries introduced the UltraBeltTM belt-driven, walk-behind mower. The new model is available in 36- and 48-inch cutting widths. It features an 8-speed drive for easy shifting with either hand, a mechanism to stop runaways and a drive-belt tension adjustment to reduce belt-slippage.

Circle 130 on reader service card

The Proline division of **The Toro Co.** introduced the 37-inch Recycler[®] brand mowing deck. It operates on any of the Toro Traction units from 12.5- to 18-h.p. engines in gear or hydro-drive.

The deck has two specially elongated chambers, one with a 21-inch blade and one with a 17-inch blade. It has a bagging option and can be converted to a side-discharge model.

Circle 131 on reader service card

Jacobsen's new ST-5111TM hydraulic reel mower has a cut of more than 11 feet for fast mowing of large areas. Front-mounted reels allow for tight trimming around obstacles.

Features include a 51-h.p., liquid-cooled diesel engine and 4-wheel drive. The engine is fully enclosed and isolation mounted to minimize noise and vibration. The fiberglass body is corrosion-resistant.

The ST-5111 also offers adjustable suspension seat, power steering, tilt steering wheel, cruise control and full instrumentation.

Circle 132 on reader service card

Briggs & Stratton has added an overhead valve design and European styling to its high-end line of lawn mower engines.

The Europa 147 cc vertical shaft OHV engine features a cast iron cylinder sleeve to extend engine life. The carburetor is designed for one-pull starts. Also standard is the engine's power cut mechanical governor. A dual lubrication system bathes all internal parts with consistent lubrication.

Circle 133 on reader service card

The new Bolens One-Step[®] mulching rear engine rider is now available from **Garden Way**. The machine is powered by a 12 1/2-h.p. Briggs & Stratton I/C Quiet engine with 5-speed Peerless in-line gear transmission. It has a 33-inch cutting deck and 22-inch turning radius.

The "dial-a-height" adjustment offers infinite cutting height adjustments from 1 inch to 3 3/4 inches.

Circle 134 on reader service card

Honda introduced the HRC7013ZXA series midsize, walk-behind mower. It offers 36- and 48-inch cutting widths, as well as

the option of mulching or bagging clippings.

The machine is powered by a 13-h.p. Honda 4-stroke overhead valve engine and has a twin hydraulic drive pump and motor system. Other features include zero-turn radius and infinitely variable speeds plus reverse within the range of the control lever.
Circle 135 on reader service card

Grasshopper has added Model 612 to its 600 series of midsize, zero-turn front mowers. Advanced dual-hydrostatic direct drive incorporates internal filtration and reservoir diaphragm for cleaner operation and extended service life. The machine is powered by a Briggs & Stratton air-cooled gas 12.5-h.p. Vanguard V-twin OHV engine. Attachments are available.
Circle 136 on reader service card

New from **Gravely International** is the Pro Master 22H hydrostatic front-mount mower. The unit is powered by a 22-h.p. Yanmar diesel and offers direct-drive all-gear PTO and a sharp turn steering system.
Circle 137 on reader service card

The **Bunton Co.** is introducing a new 61-inch hydrostatic mower with an 18-h.p. Briggs & Stratton engine; and the 42-inch model, by a 5-h.p. heavy-duty Briggs & Stratton industrial commercial engine.

Maximum speed is 6.5 mph in forward and 1.5 mph in reverse. Also available are 36-, 48- and 52-inch widths.
Circle 138 on reader service card

Four new GT series tractors from **Ford New Holland** are available as diesel or gas-powered units. All have dual-range hydrostatic drive. Diesel models are liquid-cooled, have glow-plugs and block heaters to ensure fast starting in cold weather. Gas engine drive GTs are air-cooled.

Mowers for the tractors are available in 44-, 48- and 60-inch widths.
Circle 139 on reader service card

The new **Exmark Turf Tracer**® hydro commercial mower offers hydrostatic drive, zero-turn capability, instant forward to reverse, infinite fingertip speed control and a 4-point floating cutting deck.
Circle 140 on reader service card

The **Kinco Mountain Goat II** series of sickle bar mowers are designed to clean up weeds, tall grasses, brush and saplings. The 38-inch model is powered by a 4-h.p. Briggs & Stratton engine; and the 42-inch model, by a 5-h.p. heavy-duty Briggs & Stratton industrial commercial engine.

A new handlebar system reduces machine vibration.
Circle 141 on reader service card

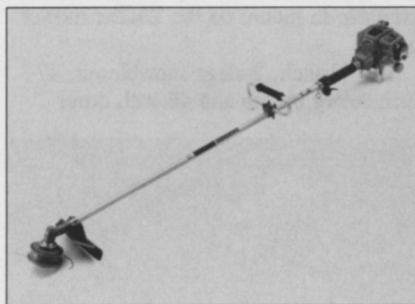
New from **Kubota Tractor Corp.** is the FZ2100 front mower. Features include the zero diameter turn system; and the auto assist differential, which allows the mower to automatically switch between 2- and 4-wheel drive.

Equipped with a 20-h.p. liquid-cooled diesel engine and hydrostatic transmission, the mower is suited for all types of mowing terrain. Other standard features include a full-tilt power steering wheel and a 55-degree tilt deck. Operators have the option of a 54- or 60-inch front mount mower and a high-capacity grass catcher.
Circle 142 on reader service card

New from **Tecumseh** are 12- and 12.5-h.p. OHV engines for lawn tractors and rear engine riding mowers. The engines feature overhead valve fuel efficiency for longer life. Both offer cast iron cylinder sleeves, multi-stage ducted air cleaners with pre-filter and pleated paper air filter elements, oil pump lubrication and a new rotating screen cooling air intake system.
Circle 143 on reader service card

BLOWERS/EDGERS/ SWEEPERS/TRIMMERS

The new **Shindaiwa T-27** trimmer/brushcutter features a 27.2 cc engine that delivers 1.5 h.p. of high-torque power at 8,000 RPM. It weighs 12.3 pounds and has a 60-inch shaft to eliminate stooping.



Standard equipment includes electronic ignition; TK diaphragm carburetor; U.S.F.S.-approved spark arrestor muffler with replaceable screen; a full anti-vibration system that encompasses engine, grip and handle; automatic centrifugal clutch; and a fully automatic trimmer head.
Circle 144 on reader service card

The **John Deere 21HC** commercial hedge clipper is equipped with a single-sided, commercial-grade, 30-inch double-reciprocating cutter bar. A gear box incorporates bearings on both sides of the blade for longer life.

Features include an anti-vibration system for the rear handgrip and an all-metal, fully adjustable diaphragm carburetor with a "sight-glass" primer bulb for easier starting and less flooding. The

unit weighs 12.7 pounds and is powered by a 21.2 cc Kioritz air-cooled, 2-stroke gas engine with electronic ignition.

Circle 145 on reader service card

New from **Echo** is the PE-2400, a 13-pound, hand-held edger. Features include a larger, more powerful 23.6 cc engine and newly designed cutter head.

The edger has an 8-inch blade for deep cutting applications and a pivoting mechanism for easy depth setting and lawn and flowerbed edge maintenance.
Circle 146 on reader service card

EasyRake now offers the EasySweep power blower. It is available with a 3-h.p. or 8-h.p. I/C engine and blows to the front or side. The 8-h.p. model has a 1-inch axle and pneumatic tires.
Circle 147 on reader service card

The **Husqvarna 140B** backpack blower features a 40.2 cc Kawasaki engine and generates a maximum air speed of 219 mph. A fuel capacity of 0.40 gallons minimizes the need for fuel stops.

The blower offers variable speed throttle control and swivel throttle arm for easy storage.
Circle 148 on reader service card

LESCO's new walk-behind blower features an 8-h.p. Kohler Magnum engine for high torque and minimum vibration. A 14-inch diameter magnesium impeller is balanced and heat treated to minimize the "siren" effect and gyroscoping. Wide-profile Turf-Saver tires improve flotation, maneuverability and stability.

The unit has an anti-clog air intake, an air blast velocity of 175 mph and an air blast volume of 2,500 CFM.
Circle 149 on reader service card

The new **Smithco Sweep Star 60** is a self-contained, ride-on sweeper. Designed especially for use on turf, it lifts debris from the surface by the pick-up head, which features a rubber-fingered reel.

The machine clears a path about 60 inches in width at a top speed of 10 mph. The high lift collection hopper has a capacity of 3 cubic yards. Also available is a ground level dump with a capacity of 5 cubic yards.



Transmission is hydraulic and power is provided by either a 23-h.p., 2-cylinder air-cooled gas engine or a 19.5 h.p., water-cooled diesel engine.

Circle 150 on reader service card

The model 150 cordless weed trimmer is now available from **Inertia Dynamics Corp.** The straight shaft, cordless, rechargeable trimmer has a 10-inch cutting path and comes complete with a 12-volt charger and wall station.

Circle 151 on reader service card

WASTE REDUCTION

New from **Haybuster Manufacturing** is the I.G. 8 industrial grinder. The unit grinds tree limbs up to 6 inches in diameter, pallets, yard waste, wood chips, bark and other demolition lumber. A 26-inch long cylinder with half-inch A.B. hardened hammers processes the waste.

The tub can be loaded with any skid steer loader and the end product is delivered on a conveyor. The portable unit is pulled with a half-ton pickup.

Circle 152 on reader service card

Mister Shred from **Hoffco** is a lightweight, free-standing shredder. The portable unit has three adjustable, heavy-duty plastic blades and an 18-inch diameter, wide-mouth funnel. It's gasoline-powered with a 49.2 cc, 2-cycle engine.

Free replacement blades and safety goggles are included with each order.

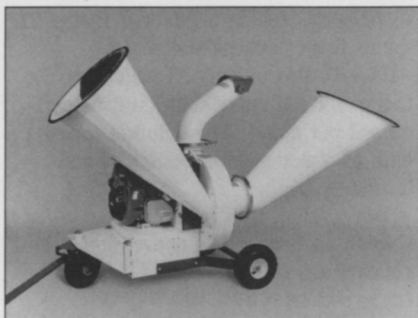
Circle 153 on reader service card

Now available from **MackKissie** is the SC180 "Brute" chipper/shredder. The machine chips logs up to 4 1/2 inches in diameter. It is powered by a 12-h.p. or 16-h.p. Kohler Magnum solid cast iron engine. Key start with a battery is standard.

Shredding and grinding is performed by 48 free-swinging hammers that pulverize branches up to 1 1/2 inches in diameter. The unit comes standard with a 1 1/4-inch hole screen and bar grate screen and is highway towable.

Circle 154 on reader service card

The **Little Wonder** Revac chipper/shredder chips, shreds, vacuums, loads and reduces



debris. A 6-bladed steel fan pulls material through a series of hammers. Steel chipping knives, attached to a 40-pound flywheel, chip branches up to 3 1/2 inches in diameter.

The unit is transported with a standard 3-wheel platform with 12-inch pneumatic tires. An assortment of intake and discharge options are available.

Circle 155 on reader service card

The model 12/24 chipper from **PeCo Inc.** is a compact, 12-h.p. machine with a 170-pound flywheel and a heavy-duty clutch for cutting materials up to 5 inches in diameter.

The octagonal base rotates 360 degrees. Other features include a pivoting jack stand, 50-month battery, hinged discharge chute, adjustable deflector shield and bagging attachment for the discharge chute.

Circle 156 on reader service card

Leaves, branches up to 1 1/2-inches thick, grass clippings and other municipal yard waste can be turned into compost with the new high-capacity commercial grinder from **Farmhand**. The CG7000 grinds materials with a high-speed hammermill rotor with hardened hammers. Materials are discharged up a 22-foot elevator into piles or transport vehicles.

The unit is available with a self-contained industrial diesel engine, or the PTO model can be powered by a conventional wheel tractor, a portable diesel engine or an electric motor.

Circle 157 on reader service card

The Go Bandit is a self-propelled 6-inch capacity tree and brush chipper from **Bandit Industries**. It features a skid steer, four-wheel hydraulic drive and is equipped with a 360-degree swivel discharge.

The unit is available with both gas and diesel power units, ranging from 24 h.p. to 30 h.p. It is offered with a hauling trailer and ramp for easy on and off operation. A bagging attachment is also available.

Circle 158 on reader service card

V.C. Marketing expanded its Wood-Pro brush chipper series to include two 9-h.p., Vanguard-powered, 18-inch disc models; and two 18-h.p., V-twin cylinder, Vanguard-powered 20-inch and 24-inch disc models. Chipping capacities range from 2 1/2 inches to 5 inches for both PTO and all road towable units.

Circle 159 on reader service card

Koos now offers Nature's Best brand Compost Acti-Vator, an organic product designed to speed up the chemical and bacterial action needed to decompose vegetable and animal matter.

Composting material includes leaves, grass and shrub clippings, wood shavings and sawdust. The materials decompose when microorganisms break down the plant tissue into its basic form.

Circle 160 on reader service card

The new grass mulcher/leaf shredder from **Simplicity Manufacturing** fits all the company's 36-inch, two-blade decks and 44-inch and 50-inch three-blade decks.

The unit includes baffle plates, a discharge plate and patented shredder blades. It fits all new tractor decks and can be retrofitted to a number of older Simplicity decks.

Circle 161 on reader service card

PESTICIDES/ FERTILIZERS/SPRAYERS

Milorganite fertilizer now has a four-color bag. The new packaging is designed to address the benefits of the product. Milorganite is an organic lawn and turf fertilizer.

Circle 162 on reader service card

A new family of 1-, 2- and 3-gallon hand-held sprayers is now available from **Solo**. The sprayers have a longer wand, large filler opening and a lightweight, high density, blow-molded polyethylene tank body



that resists corrosion and damage from ultra-violet rays.

The pump is designed to achieve spraying pressure with reduced pumping strokes. A variety of accessories are available.

Circle 163 on reader service card

New Snapshot 80 DF herbicide is registered for use on established landscape ornamentals, container- and field-grown ornamentals, ground covers, non-bearing fruit and nut crops, non-bearing vineyards and nursery stock. The preemergence herbicide from **DowElanco** is currently available in a dry flowable formulation.

It can be used alone or tank mixed with

other herbicides to control additional weeds. It provides up to eight months control of 86 broadleaf and grassy weeds.

Circle 164 on reader service card

Ciba-Geigy now offers Exhibit,[®] its first biological, nematode-based larvicide. The active ingredient is formulated using a naturally occurring species of beneficial nematodes.

The nematodes are third-stage infective juveniles that aggressively seek out and parasitize host pests. The juveniles carry a bacteria that is lethal to undesirable insects.

Each jug contains 250 million entomogenous nematodes, preserved in a natural gel matrix.

Circle 165 on reader service card

Harmony Products has developed Professional Turf Food 14-3-6, an organic base fertilizer that combines the advantages of organic and synthetic nutrients. The fertilizer is designed to rebuild soil quality and produce quick green-up on any type of turf.

Circle 166 on reader service card

Rogers Innovative has added a 50-inch-wide model to its Greensfoil driftproof walking boom spray applicator line. The GF40 has a spraying width of 40 inches. Spray liquid can be supplied by a hose, electric-powered backpack or an on-board pressure system.

Circle 167 on reader service card

Earthway has introduced the Ev-N-Spred Model 3100 commercial hand crank spreader. The product features a corrosion-resistant, 1,000-cubic-inch hopper, infinite flow control settings, large gears guaranteed for two years and twin, spread pattern adjusting plates. Wide criss-cross shoulder straps provide operator comfort.

Circle 168 on reader service card

Grace-Sierra now offers the Peters Excel[®] product line, including three water soluble fertilizers and two supplemental formulations that enable growers to combine calcium, magnesium and phosphorus into one concentrate without precipitation.

Included in the line are All Purpose, Poinsettia and Cal-Mag formulations; and Magnitrate and Cal-Lite supplemental formulations.

Circle 169 on reader service card

Talstar Flowable insecticide/miticide is now available in 1-quart "squeeze and measure" bottles from **FMC Corp.** A funnel spout measures the product directly into the tank mix.

The product is a water-based liquid formulation that contains no organic solvents. It is formulated to control 35 pests and

leave minimal residue on the foliage.

Circle 170 on reader service card

Terrene[™] is a natural, organic fertilizer recycled from organic byproducts of wastewater treatment. From **Enviro-Gro Technologies**, the product is pelletized to a uniform granule size. It can be applied evenly with all brands of drop or broadcast-type spreaders.

Terrene can be used on turf, trees, shrubs and flowers.

Circle 171 on reader service card

Blazon[®] colorant from **Milliken Chemical** is now available in 3-oz. premeasured packets for large tank and backpack applications. There are 48 packets to a case, and each case contains enough colorant to treat 1,200 gallons of tank solution.

Circle 172 on reader service card

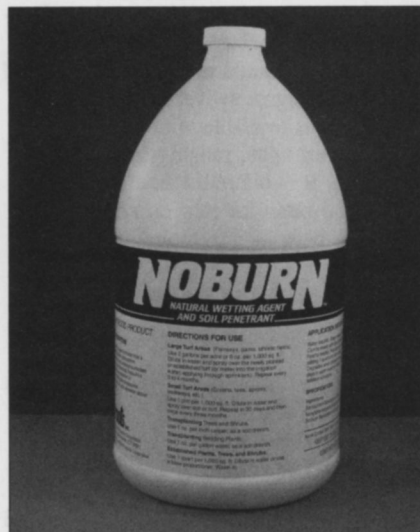
Chipco[®] Ronstar[®] brand oxadiazon herbicide from **Rhone-Poulenc** is now carried on a granule made from a byproduct of recycled paper. The result is less dust during loading and application and a more uniform spread pattern.

Circle 173 on reader service card

Organic Green's Natural Turf fertilizer is nitrate-free and provides a slow release rate for steady, long-term growth. The organic product has an alfalfa base.

Circle 174 on reader service card

ROOTSinc introduces NoburN[™] natural wetting agent and soil penetrant. The product is a steroid saponin extract from the desert yucca plant. It does not have to be



watered in after each application, and it does not burn or discolor leaf tissue when applied in hot or dry weather.

Circle 175 on reader service card

O.M. Scott has added two new fertilizer/combination products to its Scotts[®]

Proturf[®] line. SCOTT'S 13-3-7 NPK and SCOTT'S 20-3-4 NPK feature pendimethalin preemergent weed control of six annual grassy weeds and seven broadleaf weeds on established turfgrasses such as Kentucky bluegrass, perennial ryegrass, fine fescue and tall fescue, among others.

Circle 176 on reader service card

The **Oldham** Tailgator is a complete 12-volt spraying system that can be used for small yards, spot weed control and flower beds. The unit is pretested.

Circle 177 on reader service card

Sandoz Crop Protection offers Steward, a biological insecticide for turf and ornamental plants. Based on a strain of *Bacillus thuringiensis* (B.t.), Steward is active against certain lepidopterous species, including armyworms, cutworms, loopers and sod webworms. It also controls bagworms, budworms, gypsy moths, leaf-rollers and tent caterpillars.

It can be used on turf, tree fruit and vegetable crops, shade trees and ornamentals.

Circle 178 on reader service card

Minnesota Wanner introduces a new sprayer with two complete spray systems in one compact unit. Designed to fit full size pickups, the unit can apply different chemicals without cross contamination. Each system has its own HydraCell pump, spray tank, hose reel and spray gun.

Circle 179 on reader service card

Signal[™] spray colorant is now available in tablet form from **Precision Laboratories**. The tablets are formulated for handheld, backpack or small spray tanks. One tablet treats up to a two-gallon solution.

Circle 180 on reader service card

The Add-It from **TFS Systems** is an automatic proportioning fertilizer injector for use with drip/subsurface or conventional sprinkler systems. The injector is designed to facilitate the uniform distribution of fertilizer throughout the irrigation system.

No outside power sources are required to operate, and there is no pressure loss through the injector.

Circle 181 on reader service card

Turf-Mark[®] tablets are now available in bottles from **Becker-Underwood**.

Each bottle contains 25 tablets; one to two gallons of spray solution can be treated per tablet. The colorant mixes with all water soluble pesticides and fertilizers.

The product is also available in water soluble packets and as conventional liquid concentrate.

Circle 182 on reader service card

Aquatrols has reformulated its AquaGro-S spreadable soil wetting agent, resulting in a more concentrated product.

AquaGro 20-S is a granular formulation used for improving water penetration, drainage and managing water in the root-zone. The new formulation is packaged in an easy-to-open 40-pound bag.

Circle 183 on reader service card

A dual-tank compartment sprayer with dual pumping units is now available from **Spraying Devices Inc.** Model 300D14-5KE/PUD14-5KE has two 150-gallon tank compartments and two 14-GPM pumping units powered by 8-h.p. Kohler electric-start engines.

Circle 184 on reader service card

Broyhill's new 30- and 60-gallon sprayers feature corrosion-free, low profile poly tanks with molded-in gallonage and liter markings and a chemical/tool compartment. A sloped design allows proper drainage. The sprayers are available in roller, diaphragm or 12-volt electric pump systems. Spray gun is standard.

Circle 185 on reader service card

NOR-AM Chemical Co. introduces Nutra-lene,[®] a granular controlled-release

nitrogen product derived from methylene ureas. This nitrogen source is completely available within one growing season and is released through hydrolysis and microbial mechanisms.

Circle 186 on reader service card

IMAGE[®] herbicide from **American Cyanamid Co.** has received EPA registration of an expanded turf label to include use on selected landscape ornamentals.

The herbicide is used for the control of purple nutsedge, wild onion and garlic and other weeds. The new label allows it to be applied to certain shrubs and groundcovers, as well as around Hosta and Society Garlic perennials and Red Crepe Myrtle.

The EPA also registered label changes permitting the product to assist in the control of and reduce competition from the following summer weeds: Tall Fescue (also labeled as a winter weed), Violets, Crabgrass, Annual Sedge and Virginia Buttonweed.

Circle 187 on reader service card

Dissolve, a water soluble phenoxy herbicide combination, is available from **Riverdale Chemical Co.** The herbicide is a totally soluble, highly concentrated, dry for-

mulation of 2,4-D, mecoprop and dichlorprop packaged in premeasured water soluble packages.

It is stable in solution, non-foaming and tank-mix compatible.

Circle 188 on reader service card

The granular material spreader from **Accu-Spread** is designed for year-round use and spreads sand, salt, calcium chloride, top-dressing and other materials. It fits on a rear 3-point hitch, front loader of a tractor or skid-steer, or rear of a truck. Two models are available: one for drop spreading only, and one for drop or broadcast spreading.

Circle 239 on reader service card

AERATORS/SEEDERS

The new Ryan Lawnaire V Aerator from **Cushman** covers a 26 1/2-inch aerating swath and can aerate up to 29,000 square feet per hour. Powered by a 4-cycle, 3.5-h.p. Honda engine, the aerator is equipped with 3/4-inch, open-sided coring tines that can penetrate up to 2 3/4-inches deep, depending on soil type and conditions.

The unit comes equipped with a 38-pound removable weight bar and polyethylene water drum that holds up to 10.2

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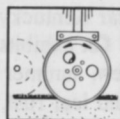
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Circle 189 on reader service card

A flexible, free-swinging tine harrow from **Fuerst Brothers** is designed to prepare seedbeds, cover seed, break up and scatter aerator plugs, bring up thatch and aerate turf to stimulate growth and encourage denser, healthier turf.

Circle 190 on reader service card

Feldmann Engineering is offering a new, 48-inch swath, pull-behind core plug aerator. Model 2340-48 attaches to a tractor or riding mower with a hitch pin and draw bar or with a three-point hitch adapter.

Penetration from 1/2 to 2 1/2 inches allows oxygen, water and fertilizer to penetrate the root system.

Circle 191 on reader service card

Modern Implements now offers the MR4 series of rakes for 30- to 60-h.p. tractors.

Using a standard category I three-point hitch attachment system, the series includes 6-, 7- and 8-foot widths, with 5 angle positions to discharge left or right. The rakes are made from structural steel and are electrically welded, with 1-inch teeth of heat-treated alloy steel.

Circle 192 on reader service card

The Verti-Seed is a new turf overseeder from **Redexim**. Cutting discs are designed to slice a deep channel in the soil without damaging the turf. The seeding elements are behind the cutter shaft and consist of a blade to further open the channel, a hopper to place seed into the channel and a sliding pressure shoe to close the channel while maintaining constant seed depth.

Circle 193 on reader service card

The Turfmaker from **Brillion Iron Works** is designed to seed large areas at precise rates. New are the SL10, 10-foot pull-type and the SLP10, 3-point mounted seeders. Several options are available including S-Tine track removers and scraper kits.

Circle 194 on reader service card

Bluebird's new lawn aerator weighs 265 pounds, pulls 3-inch soil plugs in heavy

turf and maneuvers in tight spots. It is made of heavy gauge steel with shafts that run in sealed ball bearings and is shipped fully assembled.

The aerator is 40 1/2 inches long with its handle folded and 27 inches wide. Wheels are fully adjustable for depth of penetration.

Circle 195 on reader service card

The new **Land Pride** 72-inch Primary Seeder is designed for planting a variety of grass seeds in prepared seedbeds. The tool is engineered for precise metering and seed placement.

The seeder has a six-bushel seed hopper with a paddle-style agitator. Seed is metered through fluted cups which are ground-driven by the front roller. One lever changes calibrations for all cups.

Seed is released in a full-width pattern.

Circle 196 on reader service card

SEED

Leprechaun turf-type tall fescue from **Roberts Seed Co.** combines a very dark green color, improved turf density, improved turf quality, slower growth rate, winter hardiness and shorter mature plant height.

The variety can be maintained with less fertilizer and water than many typical bluegrass/ryegrass lawns.

Circle 197 on reader service card

Cobalt Kentucky bluegrass from **Turf Merchants** is adapted to hot and humid conditions in the eastern states. It offers fine texture and a dark green color and is developed for quick and easy establishment.

Circle 198 on reader service card

North American Green now offers a one-step method for applying seed, mulch and erosion protection. Cell-O-Seed is a recycled cellulose fiber growth medium, incorporated with standard or customer-specified seed mixes. The product is available on most of the company's erosion control blanket types.

Circle 199 on reader service card

NuStar Kentucky bluegrass from **Jacklin Seed Co.** exhibits resistance to powdery mildew, summer patch, leafspot, melting out and leaf rust. It is a moderately dense, dark-green bluegrass that shows above-average resistance to wilting due to drought. Spring greenup is from moderate to superior, depending on the location.

Circle 200 on reader service card.

Astro 2000 turf-type tall fescue will be available from **GreenSeed** in fall 1992. The variety is a dark green, dense, hardy cultivar which exhibits excellent persistence in multiple climatic conditions, in-

cluding heat, humidity and drought stress, as well as shade.

Circle 201 on reader service card

Seed Research of Oregon offers Crusader, a mixture of SR 4200 perennial ryegrass, SR 3000 hard fescue and SR 5000 Chewings fescue. These three turfgrasses contain high levels of viable endophyte that provide natural insect resistance.

Crusader is noted for its bright, dark green color; dense, fine-textured turf; low growth habit; and excellent heat tolerance.

Circle 202 on reader service card

Pennington Seed released two new turf-type grasses that require no watering or irrigation once established. The new grasses were developed to produce minimum clippings.

Enviro-Blend turf-type tall fescue dwarf blend was introduced especially for areas that have 15 inches to 45 inches of rainfall each year. Cheyenne bermuda is a cold tolerant, dark green, turf-type bermuda that can be planted from seed to form a sod in six weeks.

Circle 203 on reader service card

New from **Zajac Performance Seeds** is Vista, a lower-growing creeping red fescue, capable of producing a dark green turf under reduced nitrogen and mowing inputs. It was bred with a wider blade, enhancing its compatibility in blends with bluegrass and ryegrass.

Circle 204 on reader service card

Normarc Seed Co. now offers Bargena creeping red fescue, which can be used to complement lawn mixes that include Kentucky bluegrass or perennial ryegrass.

The fescue is a dark green, fine textured grass with a semi-erect growth habit and long rhizomes. A well-developed root structure enhances performance under heat and cold stress, shade and drought conditions. It is adapted for sandy or infertile soils and where fast establishment is needed.

Circle 205 on reader service card

Fine Lawn Petite turf-type tall fescue is an advanced generation low growing (dwarf) tall fescue. It is said to establish quicker than many of the dwarf varieties, has greater brown patch tolerance and is adaptable to tall fescue usage areas. Petite is now available in limited quantities.

Circle 206 on reader service card

IRRIGATION

The new QB2[®] Water Conservation System from **Pepco Water Conservation Products** is available in three boxed kits: pots and planters, trees and shrubs and ground covers.

The system delivers water at flow rates of 2, 6, 10 or 20 GPH. It is designed to operate for 5 to 10 minutes, once or twice a day on designated watering days.

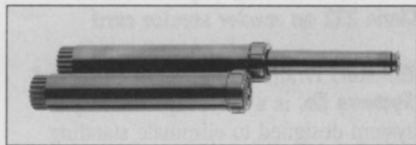
The system retrofits single or multiple spray heads on the same station while maintaining proper water pressure. It can be mixed with spray heads on the same station.

Circle 207 on reader service card

TiteLine from **Hancor** is a polyethylene conduit developed for watertight gravity flow drainage systems. It features a corrugated exterior, a smooth interior and a bell-and-spigot connection for watertightness.

Circle 208 on reader service card

Hunter's S-Type spray sprinkler with built-in nozzle is designed for use on small turf and landscape areas. It is available with adjustable arcs to vary the radius and dis-



charge rates, and as a fixed, full circle sprinkler.

S-Type models include 2- and 4-inch pop-ups, a shrub head and a side strip sprinkler.

Circle 209 on reader service card

Weather Tec is introducing the ATR-30 "all terrain roller" base, designed to conform to slopes, peaks and valleys and maintain the sprinkler in a more level position. The product is made with aluminum rollers, powder coated metal frame and stainless steel nuts and bolts to resist rust and corrosion.

Circle 210 on reader service card

Imperial Underground Sprinkler Co. has released its new dual program controller for the residential market. The RIBT-DWS is preprogrammed at the factory with 4 lawn and 2 shrub for the 6 zone version, and 7 lawn and 4 shrub on the 11 zone unit. Special programs can be ordered at no additional charge.

Circle 211 on reader service card

The **Solatrol LEIT 8000** light-energized water management computer controls most two- or three-way valves with a new solid-state, micropower valve actuator that uses standard solenoid technology. It's designed to fit most brands and sizes of conventional valves and operates off 3.5-volt digital control pulses provided by the computer.

Ordinary daylight, even diffused levels during extended periods of fog, rain and

overcast, keeps the computer and valve system operating at full capacity, day or night, in most outdoor locations.

Circle 212 on reader service card

TRUCK ACCESSORIES

Valley Manufacturing introduced a line of E-Z Dumpers for insertion into utility bodies. The line is available to fit all manufacturers' models and will be built to order.

The hydraulically operated dump unit for pickup trucks is designed to hold and load up to two tons of capacity and dump it on command in seconds.

Circle 213 on reader service card

With the Multi Lift Hooklift from **Cargotec**, users can load and unload materials at ground level and leave the body and equipment at the job site. One-man, in-cab operation allows the user to change bodies in two minutes or less.

Circle 214 on reader service card

Reading Body Works has made additions to its pickup accessory line. All boxes are now made of two-sided, zinc-coated steel. Rivet-on locks with four monobolt high strength rivets have been added to all boxes for extra security.

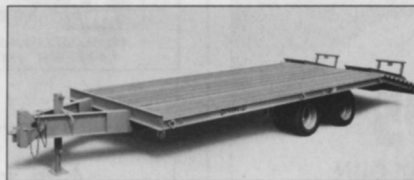
Four new sizes of Saddle Mate and Saddle Pouch tool boxes are available with increased storage capacity.

Circle 215 on reader service card

Metko now offers a ramp extension for its M300 Porta Ramp. The M301 ramp extension adds length for higher beds and reduces severe angles.

Circle 216 on reader service card

Dynaweld now offers the standard 9- to 10-ton production trailer. The trailer has a structural steel frame and solid oak lengthwise plank deck to assure maximum load



stability. All units feature full-width axles, electric brakes at each wheel and complete undercoating.

Circle 217 on reader service card

Lawn spray trucks from **Berry Manufacturing** come standard with a 500-gallon fiberglass main tank, 100-gallon fiberglass drop tank, aluminum flat bed with railing, Honda electric 8-h.p. oil alert engine and 16.5 GPM pump. Accessories are also available.

Circle 218 on reader service card

The Hijet Jumbo Cab utility body from **Daihatsu America** is constructed of 16-gauge electro-galvanized steel. Each lockable side compartment has 20 square feet of storage, a fixed divider shelf, a drop down, double-walled, 18-gauge steel work table with chain supports and a weather resistant lid supported by pressure cylinders.

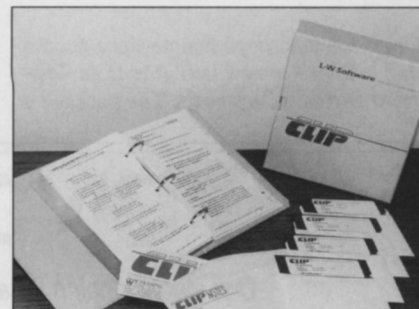
Circle 219 on reader service card

Cargotec offers the Moffett Mounty, a three-wheel-drive forklift designed to fit compactly into a mounting bracket attached at the rear of most straight trucks or trailers. It is available in 4,000- or 5,000-pound capacities.

Circle 220 on reader service card

MISCELLANEOUS PRODUCTS

L-W Software, a division of **Lawn-Wright**, released its latest version of CLIP™ 3.4+. The new version offers a variety of features, including: support for a variety of invoices and statements; the ability to



edit jobs and adjust prices while posting; the capability to adapt part of the invoices for use as foreman input sheets; and the ability to view all scheduled work for any period of time.

Circle 221 on reader service card

Oly-Ola Sales offers its new Safety-Edg curbing. The low-profile, semisoft, flexible vinyl top is 3 1/2-inches wide with non-slip ribs. The bottom is constructed of full-strength, recycled rigid vinyl and is molded to the vinyl top. Non-bending steel anchoring stakes used underground prevent frost heave.

Circle 222 on reader service card

Structron has expanded its line of fiberglass-handled power tools. New products include: aluminum asphalt lute, action hoe, cultivator, compost fork, concrete bullfloat handle, push broom and extension handle with universal tip.

Circle 223 on reader service card

A new line of printed selling tools for the green industry is available from **Focal Point Communications**. Materials include

post cards, brochures, door-hangers, leave-behinds and new neighbor and referral kits. All are printed on recycled paper. List and mailing services for single or multi-market mailing programs are also available.

Circle 224 on reader service card

All three new models of the **Vermeer** hydrostatic trenchers incorporate infinitely variable hydrostatic power in both ground drive and working attachments. The models — V-5050, V-6050 and V-8050 — also feature a wide-open, ergonomically designed Easy Chair, a console which swings up to 90 degrees without affecting orientation of the seat to hydraulic controls of the attachments.

Circle 225 on reader service card

Intermatic's professional landscape lighting products division is introducing an assortment of low voltage outdoor lights. They feature all-aluminum construction and can be used around gardens, paths, patios and other areas.

Circle 226 on reader service card

Upgraded landscape maintenance accounting software is now available from **Computer Systems Approach**. The package is

designed to generate monthly maintenance invoices and allows other services to be billed. It includes customer information and route sheets and has an estimation package for customer monthly service charges.

Circle 227 on reader service card

Gandy offers a new gang roller. It features three 18-inch by 48-inch rollers with overall width approximately 12 feet, and weight totaling 1,800 pounds when water-filled. Independent suspension allows the rollers to follow the contour of the ground.

Circle 228 on reader service card

The **Westmac** trencher attachment for front-tine roto tillers trenches 1 ¼ inches by 4 ½ inches for lawn edging, yard lighting and underground trickle sprinkling.

Circle 229 on reader service card

The **Henderson** Chief FS-P pickup-mounted sand and salt spreader is self-powered by an 8-h.p., 4-cycle air-cooled engine that is controlled from the truck cab. Material is metered for accuracy. The spreader is available in 409 stainless steel or mild steel.

Circle 230 on reader service card

LABB Systems/Software now offers an IBM PC compatible TRIMS landscape business management software for the mowing and landscape maintenance contractor.

The software comes in modular form, allowing a business to purchase only those accounting functions required for specific needs.

Modules include: accounts receivable/customer billing, customer scheduling, accounts payable, payroll, general ledger and job cost analysis.

Circle 231 on reader service card

The Hydro Seed Cost Estimator from **Erosion Control Technologies** is a new IBM PC compatible software package developed for the hydroseeding professional. The software works as a stand alone program that offers detailed estimating and reporting, materials management, equipment maintenance, work order reports and more.

Circle 232 on reader service card

Enkaturf Drain® from **Akzo Industrial Systems Co.** is a landscape drainage system designed to eliminate standing water.

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Circle 233 on reader service card

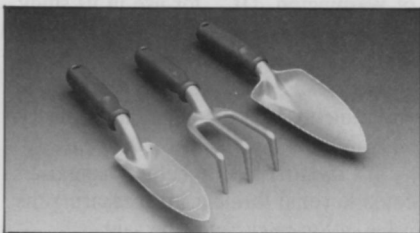
The Moonshadow from **Dreamscape Lighting** provides high levels of uniform illumination for steps or pathways. It uses a 12-volt, 20-watt halogen lamp and a linear spread lens and measures 5 inches in diameter. The solid brass faceplate is available in verde, bronze, copper or painted finishes.

Circle 234 on reader service card

Dicke Tool Co. has expanded its line of wood and fiberglass handled tree trimmers. The line now includes traditional Western Hemlock head and extension sections, one-piece poles and durable hollow and foam-filled fiberglass extensions.

Circle 235 on reader service card

Newly designed garden tools from **Wallace** include a transplanter, trowel and cultivator. Manufactured in solid, one-piece cast construction from a high-strength aluminum alloy, the tools are



designed to resist bending, rusting or falling apart.

The hand grips are textured and have a groove that allows room for the thumb while providing extra comfort and leverage.

Circle 236 on reader service card

Onan Premium Fuel System Cleaner loosens accumulated carbon deposit build-ups in gasoline engines and prevents them from forming. Carbon deposit build-ups cause fluctuating idle speed, poor warm-up driveability and, in some cases, reduced power and performance.

Circle 237 on reader service card

New from **California Landscape Lighting** is the low-voltage transformer model, an addition to its California Series line. The transformer contains a built-in Leviton -6291 remote switch module and allows remote operation of landscape lighting systems. It operates in "all-lights on" mode, or with a manual "on/off" switch at the transformer.

The remote controlled transformer is available in 200-, 300- and 500- watt models.

Circle 238 on reader service card

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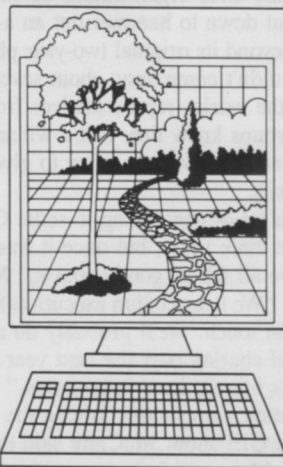
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Strategic Alliances

(continued from page 32)

clude predesign meetings involving all professionals working on a project. The meetings should be continued throughout the job.

- Landscape architects should visit nurseries to better understand the growing process.
- Post-construction visits by landscape architects, contractors and maintenance people are important.
- All industry professionals should maintain a close working relationship throughout a job. More importantly, ongoing relationships should be established to assure quality, availability and cost efficiency.

The group's first project is to consolidate all specifications and guidelines currently offered in the different segments of the green industry. Final standards will have a regional bent to them.

Key to the New Alliance's long-term success will be acceptance of the group's goals and actions by industry members at all levels, not just by association leaders. Until participation occurs at every level, it will be hard to convince the public that the industry is worthy of influencing the environmental movement.

RISE. The association began about a year ago with the support of about a dozen companies. Interest quickly grew and membership was such that the organization held its first conference in September.

"In terms of member development, I am pleased," said Allen James, RISE executive director. "But our long-term goal is to increase membership even more, particularly among formulator and distributor members including those companies serving the structural pest control industry."

Because issues surrounding the lawn and landscape maintenance industry were pushed into the national spotlight this year, RISE was forced to direct much of its attention to those matters. James expects interest from the pest control industry to increase as RISE demonstrates its usefulness in that arena.

RISE's success is simple. According to James, it's a reflection of the need in the specialty chemical industry for an umbrella organization to watch over its interests. And despite the origins of its founding members, James said, RISE does not solely represent the interests of "big business."

"We're perceived as an industry organization, representing all segments from manufacturing to application," he said. "It's not the intent of RISE to recruit the end user — end users are generally represented by strong national associations — however, if the end user chooses to support the efforts as an associate member, there's no restrictions."

While national associations tend to represent specialized interests, RISE is de-

signed to represent the entire specialty pesticide industry, actively building coalitions at various levels of government.

RISE is unique in the sense that its members can be members of associations who are also members of RISE. The PLCAA is one association which recently joined the ranks of RISE membership. Because of the professional applicator focus of PLCAA and more general pesticide concerns of RISE, the two associations don't always see eye to eye, but they're both ultimately after what's best for the specialty chemical industry.

One area the two associations chose to disagree on was posting. While PLCAA told a senate subcommittee that it endorsed posting by homeowners as well as professionals, RISE does not agree. "We chose to agree to disagree (on the subject)," James said, "but we're still working together very closely."

RISE and CSPP are currently working on a proposal to amend the Federal Insecticide, Fungicide and Rodenticide Act, to keep regulations surrounding pesticide application at either the state or federal level. Other challenges for 1992 include water quality issues, the Clean Air Act, groundwater and the potential for the Environmental Protection Agency to slap restrictive-use labels on products now tagged for general use.

RISE also supports and plays a role in other industry alliances. In September, RISE sponsored a portion of the AAN/ALCA legislative conference; in conjunction with the NPCA, sponsored a portion of the Association of Structural Pest Control Regulatory Officials annual meeting; and with the National Agricultural Chemicals Association, sponsored the National State Alliance conference. RISE also contributed funds to the Iowa Alliance for Environmental Concerns to strengthen the newly established organization.

GIE SHOW. Spurred on by the success of the first Green Industry Expo last year in Nashville, the three organizations behind the effort sat down to hammer out an agreement beyond its original two-year plan.

While it didn't come easy, about seven months in the works, representatives from the three groups knew they had a winner on their hands and weren't going to give it up very easily.

"It took a lot of negotiating to settle GIE for the next three years, but once it was complete we all felt so good about it," McClure said. "We (association executives) all try to stay in touch. We'll probably do a better job of sharing over the next year or two. There's lots we have in common."

As for future associations joining the ranks of the GIE show, McClure said they would probably concentrate on making the current agreement work for now. But, she quickly added, if it works for three, it

could work better with others.

URBAN LAND STUDY. Ask anybody in the green industry what kind of value can be gained from a nicely manicured landscape and they'll be more than happy to discuss the undisputable distinction. But ask a developer how much value it can add and it probably won't stack up.

But Patrick Moore of Patrick Moore Landscape Architecture, Alexandria, La., said he's excited about the possibilities the national urban land study evokes.

A recent Dallas/Fort Worth study on office park leasing showed that landscaping was the top reason why a firm would choose an office building for lease. Better yet, it's apparently causing architects and developers to rethink where they spend their money.

"I read that and it hit me like a ton of bricks," Moore said. "If it works there, this will hold water all over the country."

The new study is investigating all sizes of landscape projects including residential, single-family and multi-housing; office parks; and commercial properties such as shopping malls. Specific properties with measurable amenities are currently being recommended to the Urban Land Institute of Washington, D.C., for use in its study.

The end product will be a book targeted toward banks and real estate appraisers, among others, who presently don't give any value to what the landscape industry does, Moore said.

"It's the first step in helping appraisers come to some formula for measuring the value of the landscape," he said.

Results are expected late next year.

MEMBERSHIP ROLE. While many of the strategic alliances and joint projects are being carried out by the top brass at the various associations, what role do individual association members play in this new, "friendly" environment?

While the majority of association members probably aren't yet involved, directors and board members hope the word is filtering down through newsletters, conferences and good old word of mouth.

And some members have gotten the word. In addition to the original supporting cast of Capitol Line, a number of smaller PLCAA firms have contributed donations to the cause, according to Goldenberg.

"It's impressive for us to see they are concerned," he said.

In other areas, various association members, design/build in particular, are recommending sites for the urban land study, and landscape architects are initiating contact with their counterparts on the contracting side of the industry.

In addition to expanding the universe of the green industry, associations are also working to attract and retain current membership, particularly in light of these

often bewildering times.

"Our ultimate goal is closer cooperation to produce a better product for the public and ultimately, to get compensated for our efforts," Albizo said. "We need to be aware of what is going on internally and externally and continually listen to what our members' needs are. It's difficult to

succeed without making an alliance. Some issues are so tough and so great, no one can do it on their own."

It's too early to predict what 1992 will bring, but needed commitment to help critical initiatives seems certain.

"Future cooperative efforts are unlimited," according to Dennis. "I don't look at any

speed bumps that may be in the way. Because of the number of organizations and the overlap among various industries it just makes so much sense to sit down and say, 'What can we do together?'" ■

The author is Editor of Lawn & Landscape Maintenance magazine.

Specialty Pesticides

(continued from page 44)

haven't done a single tank mix in years."

Steinau recently did a loose estimate of what Greenlon formerly applied in active ingredient per acre vs. what it applies now under the modern program, which uses not only the double trigger system but different guidelines as to when to treat certain places.

He came up with an approximate 90 percent reduction in active ingredient.

"Some of that is due, of course, to wiser selection of materials, and material improvements. When I see so much media time being spent on 'tremendous exposures' to pesticides applied by lawn care companies, I can see that people are uninformed. Even most of the large companies have been good environmental neighbors.

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

Sales Woes

(continued from page 38)

by some conditions beyond their control — conditions that could improve in 1992. Dry weather conditions throughout the United States, for example, contributed to declining sales in several regions, as landscape contractors delayed purchases of new equipment.

International strife also caused consumer confidence to fall. As the war in the Persian Gulf focused national attention overseas, potential customers of outdoor power equipment took a "wait-and-see" approach toward major purchases.

Tight government purse strings at the state and local levels also trickled down to poor equipment sales in 1991, as budgets for capital expenditures were slashed in many states.

"We see a ripple effect when state budgets are having trouble. In a lot of states, because of tight budgets, it not only slows

down business, but it also has an impact on government entities like school districts that rely on government funding," Welfelt said. "When the state cuts back on capital expenditures, it is bad for local businesses.

On the other hand, he said, federal government business has been strong.

"The marketplace is certainly volatile. There are challenges for everybody." ■

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

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Maintenance Vehicles

(continued from page 48)

testing will be required. Operators of mid-range trucks with GVWs under 26,000 pounds are not affected by these requirements.

COMFORT. A big part of the safety problem is closely related to driver comfort. The correlation between driver comfort and safety has spurred truck manufacturers to pay more attention to ergonomics.

Many features are being implemented in lawn maintenance trucks to decrease driver fatigue and promote driver comfort, such as air conditioning, cloth interiors and tilt telescopic driving columns.

Bare said it's the little features that make a big comfort difference to his drivers. Air vents providing extra ventilation, easy-to-move bucket seats, extra storage space behind the seats and tilt steering all are important attractions in a truck.

OPERATIONAL ECONOMY. It is becoming more and more expensive to operate lawn maintenance trucks. As costs rise and competition heats up, lawn maintenance companies are using a combination of truck types to maximize efficiency.

Companies that used to rely exclusively on heavy-duty trucks are now using mid-

range trucks for inner-city use and heavy-duty trucks for long-distance jobs. This solution results in more efficient fuel economy as well as better maneuverability in city traffic.

Bare said he takes many factors into consideration when evaluating the operational costs of his trucks including tire wear and reduced downtime.

RISING LABOR COSTS & FUEL TAXES. According to the Public Utilities Commission, the prevailing industry wage for truck drivers in 1988 was \$11.19 an hour. However, that figure is expected to rise as federal mandates impose more stringent professional requirements.

As driver qualifications become more difficult, capable lawn maintenance truck drivers will be at a premium, resulting in an estimated 6 percent to 9 percent increase in wages and benefits.

Rising payroll taxes and insurance benefits compound the problem. Experts estimate that increased labor costs, resulting from more stringent driver qualifications and costly benefits, will translate into an overall hike of 4 percent in total costs.

In addition, many states are imposing fuel taxes. For instance, in June 1990, California voters approved legislation imposing a 5 cent per gallon additional state tax on motor vehicle fuels as part of a

highway and transit funding program (Proposition 131). This increase escalates fuel costs for lawn maintenance truck operators approximately 4.5 percent.

According to the National Energy Center in Washington, D.C., all 50 states now have fuel taxes. The Petroleum Marketing Monthly's motor gasoline tax table (June 1990) indicates that fuel taxes range from Georgia's low 7.5 cents per gallon to Iowa's high 22.5 cents per gallon for diesel fuel.

Fuel costs have risen significantly as well. Bare prefers using diesel trucks due to fuel savings. He only has to fill up his trucks twice a week, resulting in substantial fuel savings.

CONCLUSION. The 1990s will be a decade of change for the lawn maintenance industry. Stringent restrictions and economic pressures are being placed on heavy-duty trucks, causing many owners to investigate the possibility of downsizing to midrange trucks.

As long as business owners are willing to remain flexible and make the necessary changes, they will be able to respond to the challenges posed by the 1990s. ■

The author is vice president, sales and marketing for Isuzu Trucks of America Inc., South El Monte, Calif.

People

JOHN KERRIDGE was appointed deputy chairman of Ransomes plc, Ipswich, England, (parent company of Cushman/Ryan, Steiner, Brouwer and Ransomes Inc.).

Kerridge has served as a non-executive director of Ransomes for the past seven years and is currently chairman and chief executive of Fisons plc, a pharmaceutical, scientific equipment, garden and horticultural manufacturer.

Brian Meyer joined NOR-AM Chemical Co. as a senior chemist, environmental sciences. He is responsible for providing plant metabolism research to support the registration of new products.

Prior to joining the company, Meyer was a research chemist with FMC Corp. He was also a postdoctoral fellow with the Research Triangle Institute, Research Triangle Park, N.C.

AgriDyne Technologies (formerly Native Plants) named **Michael Beach** area sales manager. Beach has more than 18 years of experience in sales and marketing

of biological crop protection products. Previously, he was a sales representative for Abbott Laboratories.

Also at AgriDyne, **Brian Cummings** has been named product development manager of azadirachtin products. Azadirachtin is a naturally derived insect growth regulator currently under review by the Environmental Protection Agency for registration in the turf and greenhouse markets.

Richard Best was promoted to the newly formed position of vice president of distribution for Pennington Seed. Formerly a senior distribution manager, Best joined the company as a processing manager and has held various positions, including sales territory representative and general manager.

Charles (Bud) White joined LESCO in the newly created position of director of golf development.

Previously, White operated his own firm, Total Turf Services, a company specializing in professional turfgrass consultation.



Gray



Zerfoss

Bob Gray, technical support manager for Rain Bird Sales, retired after more than 41 years with the company.

Gray joined Rain Bird Sales in 1950 as a sprinkler system designer and has served in various roles, including turf product specialist.

The new president of Husqvarna's North American unit is **David Zerfoss**. He replaced Bill Farrell, who resigned.

Zerfoss brings to Husqvarna more than 15 years of management experience in the outdoor power, recreation and industrial equipment business. ■

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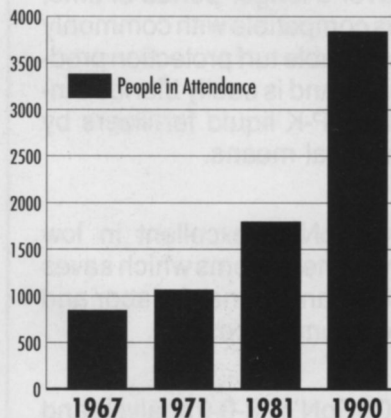
- Golf Turf
- Lawn Care
- Grounds Maintenance
- Sports Turf

Many of these sessions qualify for pesticide recertification credits.

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NOV. 17-20

National Institute on Park and Grounds Management 21st Annual Educational Conference in conjunction with Grounds Expo '91, Hyatt Regency, Louisville, Ky. Contact: National Institute on Park and Grounds Management, P.O. Box 1936, Appleton, Wis. 54913-1936; 414/733-2301.

NOV. 18-21

Green Industry Expo '91, sponsored by ALCA, PGMS and PLCAA, Convention Center, Tampa, Fla. Contact: GIE, 1000 Johnson Ferry Rd., NE, Suite C135, Marietta, Ga. 30068-2112; 404/973-2019.

NOV. 19-20

Southern Grounds & Turf Maintenance Exhibition and Conference, Myrtle Beach Convention Center, Myrtle Beach, S.C. Contact: S.C. State Board for Technical Comprehensive Education, III Executive Center Drive, Columbia, S.C. 29210; 803/737-9356.

NOV. 21-24

Landscape Maintenance Association Equipment Show and Conference, Holiday Inn — Sabal Park, Tampa, Fla. Contact: Charles Bingaman, LMA, P.O. Box 728, Largo, Fla. 34649; 813/584-2312.

NOV. 25-28

Professional Development Series for Turf Managers, University of Guelph, Ontario. Contact: Division of Continuing Education, Room 160 Johnston Hall, University of Guelph, Guelph, Ontario N1G 2W1; 519/767-5000.

DEC. 2-4

New Jersey Turfgrass Association Expo '91, Garden State Exhibit and Convention Center, Somerset, N.J. Contact: 908/932-9271.

DEC. 2-5

Ohio Turfgrass Conference and Show, Cincinnati Convention and Exposition Center, Cincinnati, Ohio. Contact: OTF, 2021 Coffey Road, Columbus, Ohio 43210; 614/292-2601.

DEC. 2-6

"Your Home Turf," The Michigan State University Turf School, East Lansing, Mich. Contact: Frank Rossi, 517/353-0860.

DEC. 3-4

16th Annual Grounds Maintenance Conference & Show, Sheraton Columbia North-

west, Columbia, S.C. Contact: South Carolina Landscape & Turfgrass Association, P.O. Box 325, Clemson, S.C. 29633.

DEC. 3-5

Rocky Mountain Turf Conference, Currihan Hall, Denver, Colo. Contact: Rocky Mountain Turfgrass Association, P.O. Box 903, Parker, Colo. 80134; 303/688-3440.

DEC. 5

Marketing, Advertising, Business Management Short Course, sponsored by the University of Florida Cooperative Extension Service, Agriculture Center Auditorium, Sanford, Fla. Contact: Uday K. Yadav, 407/323-2500, ext. 5559.

DEC. 5-7

TCI Expo '91, Ohio Center, Columbus, Ohio. Contact: Tom Clancy, 800/733-2622.

DEC. 8-12

The Chemical Specialties Manufacturers Association, 78th Annual Meeting, Marriott Harbor Beach Resort, Fort Lauderdale, Fla. Contact: CSMA, 1913 Eye St. NW, Washington, D.C. 20006; 202/872-8110.

DEC. 10-12

22nd Annual Georgia Turfgrass Conference and Trade Show, Georgia International Convention and Trade Center, Hyatt Atlanta Airport, Atlanta, Ga. Contact: Extension Agronomy Department, University of Georgia, Georgia Station, Griffin, Ga. 30223-1797; 912/681-5189.

JAN. 5-10

Advanced Landscape Plant IPM Short Course, sponsored by the Maryland Cooperative Extension Service. Contact: David Laughlin, University of Maryland, Dept. of Entomology, Room 1300, Symons Hall, College Park, Md. 20742; 301/405-3911.

JAN. 6-9

The Virginia Professional Horticulture Conference, The Pavilion, Virginia Beach, Va. Contact: VPHC, P.O. Box 5758, Virginia Beach, Va. 23455-5758; 804/465-7777.

JAN. 7-9

Ontario Turfgrass Symposium, University of Guelph, Ontario, Canada. Contact: Mira, 519/824-4120, ext. 3814

(continued on page 106)

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Calgary (403) 256-4490
Toronto (416) 450-9313

Calendar

(continued from page 104)

JAN. 7-10

Eastern Pennsylvania Turf Conference and Trade Show, Valley Forge Convention Center, King of Prussia, Pa. Contact: Pennsylvania Turfgrass Council, P.O. Box 1078, Lemont, Pa. 16851-1078; 814/863-3475.

JAN. 8-10

30th Annual North Carolina Turfgrass Conference and Trade Show, Charlotte Convention Center, Charlotte, N.C. Contact: Gene Maples, Turfgrass Council of North Carolina, P.O. Box 289, Southern Pines, N.C. 28388; 919/695-1333.

JAN. 13-16

32nd Virginia Turf and Landscape Conference and Trade Show, Richmond Centre and Richmond Marriott, Richmond, Va. Contact: Randeem Tharp, 804/340-3473.

JAN. 13-16

Advanced Turfgrass IPM Short Course, sponsored by the Maryland Cooperative Extension Service. Contact: David Laugh-

lin, University of Maryland, Dept. of Entomology, Room 1300, Symons Hall, College Park, Md. 20742; 301/405-3911.

JAN. 14

Landscape and Nursery Expo '92, Sacramento Community Center, sponsored by the CLCA/Sacramento Valley Chapter and California Association of Nurserymen, Superior Chapter. Contact: Landscape & Nursery Expo, P.O. Box 160244, Sacramento, Calif. 95816-0244; 916/442-4470.

JAN. 15

Professional Turf and Landscape Conference, Westchester County Center, White Plains, N.Y. Contact: P.O. Box 307, Scarsdale, N.Y. 10583; 914/636-2875.

JAN. 15-17

Retail and Landscape Seminar, Texas Association of Nurserymen & Texas Agricultural Extension Service, Crest Hotel, Austin, Texas. Contact: TAN, 7730 South IH-35, Austin, Texas 78745-6621; 512/280-5182.

JAN. 16-18

Mid-America Horticultural Trade Show, Hyatt Regency, Chicago. Contact: Mid-

Am Trade Show, 1000 N. Rand Road, Suite 214, Wauconda, Ill. 60084; 708/526-2010.

JAN. 20-22

62nd Annual Michigan Turfgrass Conference, Lansing Holiday Inn South Hotel and Convention Center. Contact: Mike Saffel, Department of Crop & Soil Sciences, MSU, East Lansing, Mich. 48824; 517/353-9022.

JAN. 21-23

Midwest Regional Turfgrass Conference and Show, Indiana Convention Center, Indianapolis, Ind. Contact: Jo Horn, 317/494-8039.

JAN. 23-25

Idaho Horticulture Convention and Trade Show, sponsored by the Idaho Nursery Association and the Environmental Care Association. Contact: INA, 2350 Hill Rd. Boise, Idaho 83702; 800/INA-GROW.

JAN. 26-29

2nd Annual Executive Forum, sponsored by the Associated Landscape Contractors of America, Registry Resort, Naples, Fla. Contact: ALCA, 405 N. Washington

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JAN. 29-30

28th Annual Northern California Turf and Landscape Exposition, Santa Clara Convention Center, Santa Clara, Calif. Contact: NCTC, 425 Oak St., Brentwood, Calif. 94513; 415/516-0146.

JAN. 31

Annual Mid-Florida Turfgrass Conference, sponsored by the University of Florida Cooperative Extension Service, Seminole Community College, Sanford, Fla. Contact: Uday K. Yadav, 407/323-2500.

FEB. 3-5

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

FEB. 4

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

FEB. 5-7

American Sod Producers Association's Midwinter Conference and Exposition, Bally's Casino & Resort, Las Vegas. Contact: ASPA, 1855-A Hicks Road, Rolling Meadows, Ill. 60008; 708/705-9898.

FEB. 10-17

Golf Course Superintendents Association of America, 63rd International Golf Course Conference and Show, New Orleans Convention Center, New Orleans, La. Contact: Linda Fortunato, GCSAA, 1421 Research Park Drive, Lawrence, Kan. 66049; 913/841-2240.

FEB. 21-22

ALMA Expo, sponsored by American Landscape Maintenance Association, Clarion Resort, Orlando, Fla. Contact: ALMA, 800/992-ALMA.

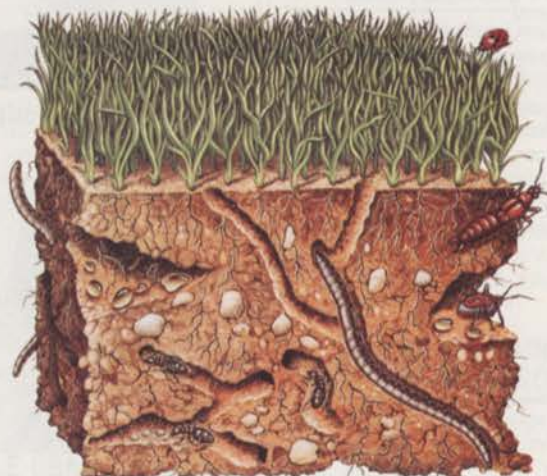
FEB. 27-28

Associated Landscape Contractors of Colorado, Landscape Conference and Trade Show, Holiday Inn I-70 East, Denver. Contact: Joyce Richardson, 5290 East Yale Circle, Suite 100, Denver, Colo. 80222; 303/757-5611.

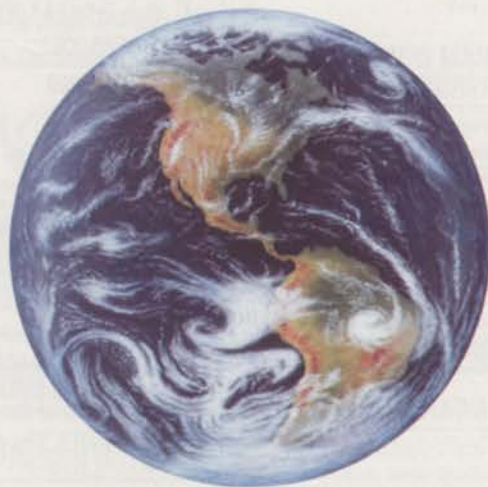
FEB. 28

Turf Management Seminar, sponsored by Cuyamaca College and University of California Cooperative Extension. Contact: Ray Meredith, 619/670-3544. ■

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Cleveland, Ohio 44113
216/961-4130

STATEMENT OF OWNERSHIP

Statement required by the Act of October 23, 1962. Section 4369, Title 39, United States Code, showing the ownership of *Lawn and Landscape Maintenance* published monthly at 4012 Bridge Avenue, Cleveland, Ohio 44113-3320 Cuyahoga County.

The name of the publisher is: Maureen Mertz, 4012 Bridge Avenue, Cleveland, Ohio 44113. The name of the editor is: Cindy Code, 4012 Bridge Avenue, Cleveland, Ohio 44113.

The owners are: G.I.E. Incorporated Publishers, 4012 Bridge Avenue, Cleveland, Ohio 44113; Richard J.W. Foster, 4012 Bridge Avenue, Cleveland, Ohio 44113; Nancy J. Foster, 4012 Bridge Avenue, Cleveland, Ohio 44113; Maureen Mertz, 4012 Bridge Avenue, Cleveland, Ohio 44113.

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Average number of copies each issue during preceding 12 months, and of single issue nearest to filing date, respectively, are as follows: Total number of copies printed (net press run) 43,485/47,200; paid circulation sales through dealers and carriers, street vendors and counter sales 0; mail subscriptions 20,358/20,082; free distribution by mail, carrier or other means (samples, complimentary or other free copies) 21,789/26,652; total distribution 42,147/46,734; copies not distributed (office use, left over, unaccounted, spoiled after printing) 1,338/466; return from news agents 0; and total 43,485/47,200.

I certify that the statements made by me above are correct and complete.

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