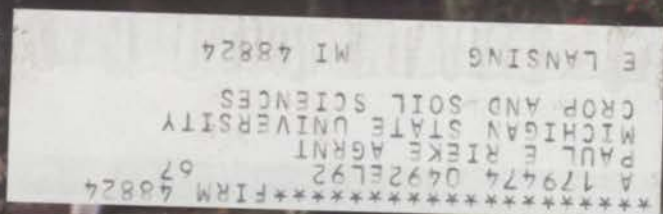


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Lawn & Landscape MAINTENANCE

VOLUME 13, NUMBER 9

SEPTEMBER 1992

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Steve Pumphrey, Austin, Texas

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26 Are Contractors' Recycling Efforts Being Stymied?

Despite bureaucracy, both contractors and suppliers are forging ahead with recycling undertakings.



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Low grass seed yields mean higher prices for the landscape industry.

34 Are Today's Engines Tough Enough?

Engine manufacturers have come a long way in designing engines for specific commercial needs.



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Selecting an engine oil can be confusing, but following a few simple steps can eliminate most problems.

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Improper water pressure, resulting in the loss of precious water supplies, is the number one problem facing the industry today.



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Editor's Focus

REPORTING NEWS stories, particularly when devastation is at the crux of the article, is difficult. And it's the exception, rather than the rule, when someone enjoys (as is so often perceived) interviewing the families' of victims whether a loved one died in a fire, car crash or was murdered.

At first glance, a hurricane doesn't seem to contain the ingredients of the above-mentioned horrors, but after talking to some of the survivors of Hurricane Andrew and viewing the interminable destruction Andrew left in his path, I'm not so sure. Even the lucky ones, those who still have their lives, are plagued by seemingly insurmountable cleanup, the prospect of living in tent cities and the continual threat of looters.

In the wake of the hurricane, the nursery industry — both exterior and interior — suffered losses in the millions. South Florida's Dade County, home to more than 800 nurseries, is no longer able to provide the industry with the plants and trees so eagerly anticipated.

And while other cities and nurseries will attempt to fill the void, some predict it could be a decade before the bulk of the Southern nurseries will return to its pre-Andrew production points.

But out of this chaos comes the stuff that warms your heart. To hear of manufacturers donating equipment to aid cleanup efforts is encouraging. Additionally, association directors went to bat for the nursery industry in a recent meeting with President Bush. The meeting will likely result in much needed emergency funding.

And last, but not least, the groups of landscape contractors who have given up some of their time to clear debris, deliver food, donate money or simply to offer a few words of encouragement somehow reassures you that everything will be OK — eventually.

It's too early to talk about the cost of rebuilding and restocking facilities and plant materials since many nursery owners hadn't even begun to dig out their annihilated buildings at the time of this article. But the hope is that most of these people have the stamina, ardor and finances to persevere.

As noted in this month's news section, donations can be sent to: FNGA Hurricane Relief Fund, 5401 Kirkman Road, Suite 650, Orlando, FL 32819.

Did you hear the recent news about the drummer from the rock band Toto who died after ingesting cocaine? While this isn't news we would normally share with our readers, it's significant because the



drummer's death was first blamed on pesticide exposure.

Before an autopsy or any official medical report was released, the drummer's manager initially blamed the man's death on pesticides which were apparently sprayed in his garden moments before he felt ill.

While I'm not suggesting we rejoice that this man died from doing cocaine, I am bringing this to your attention to remind you how precarious these situations can be. We must continue to deliver our basic message: that of making the environment a healthier and more liveable place.

Often, we're so wound up in the technical aspects of the business, that we don't stop to tell our customers the benefits of our services. Instead we wait until something specific happens to respond.

Additionally, lawn maintenance contractors should be providing services to clients with the confidence that comes from using products that have gone through stringent manufacturer and EPA testing.

To assist in this important area of business, the green industry media got together with the Responsible Industry for a Sound Environment and developed an editorial supplement that accurately and succinctly conveys what specialty pesticides are all about. This industrywide effort to communicate the benefits of specialty pesticides on turf, trees, ornamentals, sports turf, pest control and so on, is a compilation of statistics, "did you know" points of information and graphics designed to bolster the image of the dynamic green industry.

It's hoped that this information piece will be disseminated widely, either in its entirety or in part; whatever is appropriate for your business. Watch for the 16-page editorial supplement to appear in the November issue of LLM. — *Cindy Code* ■

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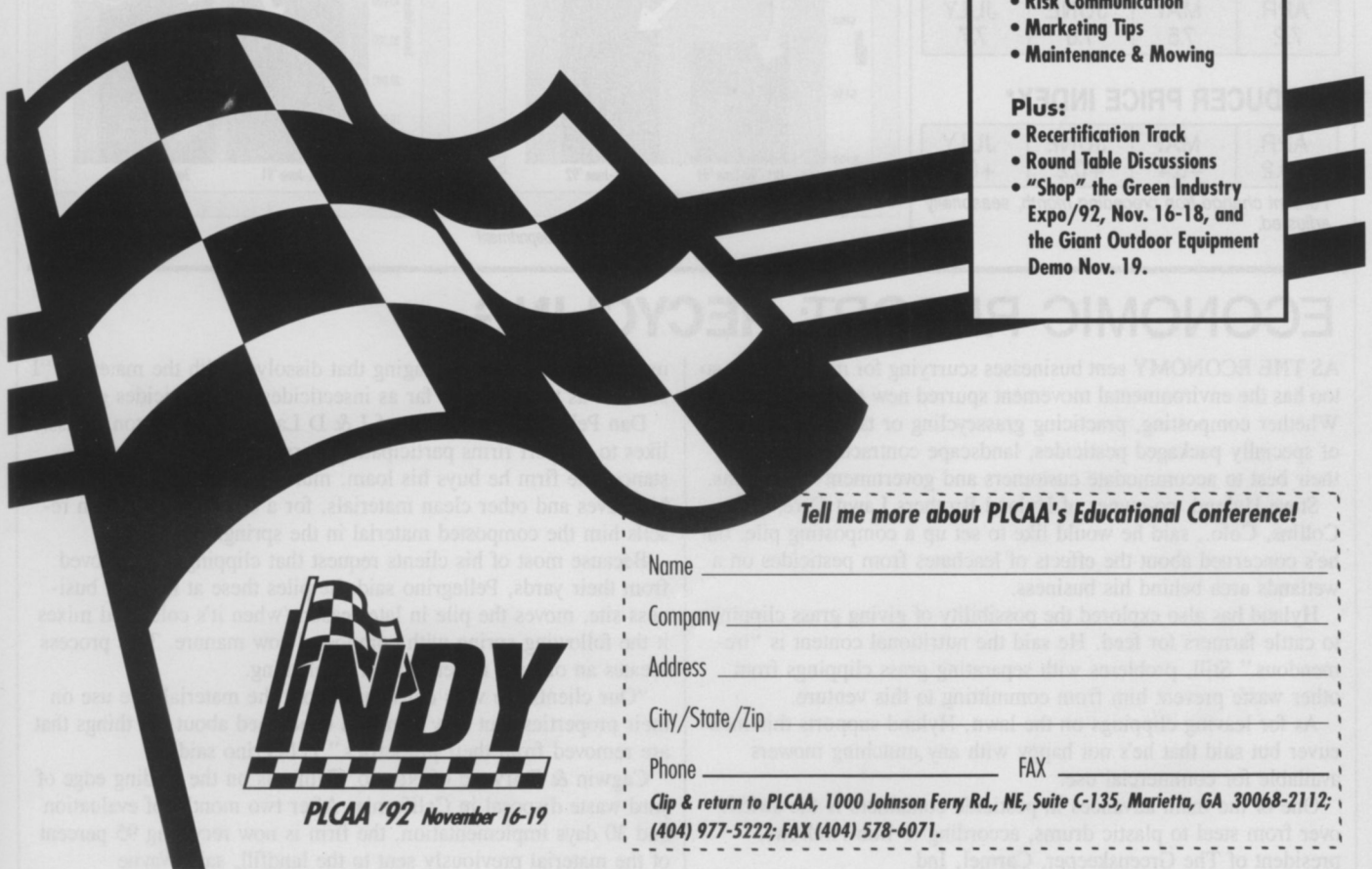
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PLCAA '92 November 16-19

Business Watch

THE ECONOMY continued its slow, gradual climb out of recession throughout the summer, but not as rapidly as many economists had predicted. The jobless rate was as oppressive as the summer heat, while interest payments on the ever-expanding budget deficit (see chart) continued to be a drag on the economy.

Economic conditions are improving gradually, but not in time for some businesses. Dun & Bradstreet reports that business failures for the first half of 1992 surged 17 percent from the previous year. In all, 50,582 businesses failed from January through June (see chart). Nonetheless, small business owners are optimistic the economy will return to prerecession levels, according to the National Federation of Independent Business (NFIB).

NFIB economist William Dunkelberg said falling interest rates and low inflation are fueling the optimism that is likely to result in more than 1.9 million new jobs in 1992, according to Dun & Bradstreet. Small business is projected to account for nearly 80 percent of the gain (see chart).

UNEMPLOYMENT RATE(%)

APR.	MAY	JUNE	JULY
7.2	7.5	7.8	7.7

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APR.	MAY	JUNE	JULY
+0.2	+0.4	+0.2	+0.1

*Percent change from preceding month, seasonally adjusted.

SMALL BUSINESS LEADS EMPLOYMENT RACE

Share of total expected employment gain, by size of firm.



Source: Dun & Bradstreet

BUDGET DEFICIT EXPLODES

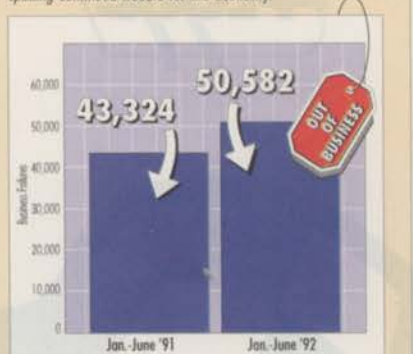
Despite calls to cut the Federal budget deficit it continues to climb at a dramatic pace.



Source: Treasury Department

BUSINESS FAILURES UP

Business failures increased 17% for the first half of the year, spelling continued trouble for the economy.



Source: Dun & Bradstreet

ECONOMIC REPORT: RECYCLING

AS THE ECONOMY sent businesses scurrying for more clients, so too has the environmental movement spurred new service concerns. Whether composting, practicing grasscycling or taking advantage of specially packaged pesticides, landscape contractors are trying their best to accommodate customers and government regulations.

Steve Hyland, co-owner of Hyland Brothers Lawn Care, Fort Collins, Colo., said he would like to set up a composting pile, but he's concerned about the effects of leachates from pesticides on a wetlands area behind his business.

Hyland has also explored the possibility of giving grass clippings to cattle farmers for feed. He said the nutritional content is "tremendous." Still, problems with separating grass clippings from other waste prevent him from committing to this venture.

As for leaving clippings on the lawn, Hyland supports this maneuver but said that he's not happy with any mulching mowers available for commercial use.

One of the main advances in pesticide containers is the switch-over from steel to plastic drums, according to Bob Andrews, president of The Greenskeeper, Carmel, Ind.

"Plastic containers can be thoroughly rinsed, cut up and thrown away with little effort," he said.

Additionally, Andrews said his firm has been involved in the

use of water soluble packaging that dissolves with the material. "I see that as the future as far as insecticides and herbicides go."

Dan Pellegrino, president of J & D Landscape, Newton, Mass., likes to support firms participating in recycling efforts. For instance, the firm he buys his loam, mulch and gravel from accepts his leaves and other clean materials, for a small fee, and then resells him the composted material in the spring.

Because most of his clients request that clippings be removed from their yards, Pellegrino said, he piles these at his own business site, moves the pile in late season (when it's cold) and mixes it the following spring with composted cow manure. This process creates an organic material used in planting.

"Our clients are very conscious about the materials we use on their properties, but they're not as concerned about the things that are removed from their properties," Pellegrino said.

Cagwin & Dorward of Novato, Calif., is on the leading edge of yard waste disposal in California. After two months of evaluation and 30 days implementation, the firm is now recycling 95 percent of the material previously sent to the landfill, said Wayne Richards, chief operating officer.

"It's been pretty well received," Richards said. "It's just a matter of educating our clients and providing the same service." ■

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NEWS DIGEST

Tree Demand Spurred By Earthly Concerns

More Americans are responding to the health and environmental benefits of trees, according to findings by the American Association of Nurserymen. Demand for trees used in the landscape is expected to increase by nearly 30 percent over the next three years, according to an AAN survey in partnership with the USDA Forest Service.

Landscape contractors purchased 22 percent of landscape trees, second only to garden centers (34 percent). Re-wholesalers/horticultural distributors accounted for 20 percent of sales.

Broadleaf and coniferous evergreen trees were the top choice of purchasers, comprising 37 percent of sales. Deciduous shade trees accounted for 31 percent and deciduous flowering trees, 24 percent.

Scotts Wins New Composting Contract

O.M. Scott & Sons, Marysville, Ohio, was selected to provide yard waste services to Waukesha County, Wis. The site is expected to be operational late this year.

The composting site is located at Scotts' existing Germantown, Wis., facility. The plant converts yard waste to a rich humus-like material to be recycled into the company's Hyponex-branded organic products.

Scotts also has composting contracts in Ohio, North Carolina and Washington.

Certification Program Available for Pathologists

The American Phytopathological Society established the Certified Professional Plant Pathologist program.

Applicants for CPPP certification must be approved by a six-member sub-board of peers, hold a degree in plant pathology and demonstrate work experience.

A B.S. degree applicant must have five years experience in the field, an M.S. degree three years experience and a Ph.D. degree one year of experience.

PLCAA to Unveil New Logo

The Professional Lawn Care Association of America will unveil its new logo at the Green Industry Expo in November. The new logo will take the PLCAA into the year 2000, according to the PLCAA board.

The association plans to use the new logo and slogan on various merchandise, billing statements and other items.

Hurricane Andrew Wreaks Havoc on Plants; Alters Face of the Industry for Years to Come

"THE BEST THING about going to Homestead (Florida) was that plants were in all stages of development; small, big — anything you could imagine," said Carl Nagel, president of Michael/Todd Inc., Naples, Fla. "Now what we're dealing with...when you lose a major supply area like that...the ramifications will be felt all over the state."

And all over the country.

When Hurricane Andrew wipped through Florida's Southeast coast, it ravaged more than thousands of acres of plant materials, shade houses and greenhouses, it changed the face of the exterior and interior plant industries for years to come.

Although Naples was spared the brunt of the storm when Andrew's winds dissipated from 160 to 110 mph as it crossed the state, Nagel's firm has contended with downed palm trees, ficuses, Australian Pines and others.

"We've spent the last 10 days doing nothing but storm clean-up, including tree removals and standing and staking trees via crane wherever possible," Nagel said.

Based on statistics from the University of Florida, the wholesale value of plants lost in the Dade County area was \$145 million. That's practically the entire nursery industry in the South Florida county which is home to about 842 nurseries.

Aside from some trees that were salvaged, 95 percent to 100 percent of the plant material in the county was destroyed, according to Earl Wells, executive vice president of the Florida Nursery Growers Association.

"Dade County is the largest single population of nurseries that we know of anywhere, representing 7,200 acres," Wells said. "Additionally, the capital loss is at least double the plant loss, maybe more."

The Dade County area represents 15 percent of the total nursery production, including tropical and woody plant materials, in Florida. In addition, it also represents 25 percent to 30 percent of the foliage produced in Florida. South Florida nurseries employ 16,000 to 20,000 people.

Steve Munnell, executive vice president of the Florida Foliage Association, said 300 companies representing about 2,400 acres of indoor foliage were destroyed. The wholesale Florida foliage industry is worth about \$300 million a year. It represents 57 percent of the national market.

Nurseries in Fort Lauderdale, Boca Raton, Stuart and other areas will be called on to fill in the void in both industries. And so will the federal government. Currently, efforts are under way to establish relief programs to help growers devastated by the hurricane.

According to Ben Bolusky, AAN director of government affairs, a number of loopholes prevent nurserymen from receiving relief under the Small Business Administration, Farmer's Home Administration and the Agricultural Stabilization and Conservation Service programs.

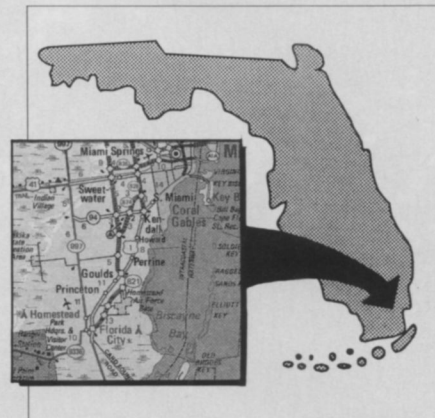
For instance, under the SBA, disaster assistance is provided to landscape and retail firms, but growers aren't covered. Under the FHA, the family farm is so narrowly defined virtually eliminating all nurseries except for those which are very small. Nursery crops are eligible under the ASCS, but only those crops for sale or harvested in the year of the disaster are covered. The problem here is that most crops are in the ground for years.

"We have to do something for these guys whether they're members of the AAN or not," Bolusky said. "Most likely, assistance will come in the form of emergency legislation."

At press time, a little more than one week after Andrew paid his visit, clean-up had barely begun.

"We're in survival mode. We have 15 people here who are homeless and we're trying to keep the people going," said Carol Palmer of Anderson's Daisy Farm in Miami.

Indeed, the situation in South Florida has been likened to a war zone, with people hoarding water, canned food items and building supplies pre-Andrew, and then scrambling to



South Florida nurseries were ravaged by Hurricane Andrew to the tune of millions of dollars.

find relatives, prized possessions and alternative living accommodations and supplies afterward.

Most areas south of Miami down through Kendall, Goulds, Homestead and Florida City, were without phone lines, power and irrigation. Some areas are expected to be without communication linkages for six to eight weeks.

Recovery will come in all stages. Small foliage — 1 to 3 gallons — can be turned around in a matter of six to eight months, Wells said. Larger trees are another story.

"It's all tied to economics, individual spirit and the viability of people to get back into business," Wells said. "We'll see the major firms get it together, but you'll always find some that will drop out. If you wanted to put a figure on bringing the industry back to the way it was before the hurricane, I'd say five to seven years, even longer."

Financial contributions for the purchase of food and supplies, such as chain saws, are greatly needed. To help, send your contribution to the FNGA Hurricane Relief Fund, 5401 Kirkman Road, Suite 650, Orlando, FL 32819.

Great Western Fined For Seed Substitution

The Oregon Department of Agriculture, jointly with the Oregon State University, imposed its largest civil penalty to date by issuing a \$61,000 fine against Great Western Seed Co. of Albany for misrepresenting product for sale.

In addition to the fine, Great Western had its seed dealers license suspended for 30 days, (from Aug. 18 to Sept. 16), was placed on a one-year probation and had its approved Oregon State University certified warehouse status revoked at its Albany warehouse for two years. Under terms of the civil action, Great Western may not sell, offer or expose for sale grass seed for the one-month suspension.

Great Western violated state law by substituting uncertified seed for certified seed. In doing so, the company misrepresented the type, variety and origin of seed that was sold. Great Western waived its right to a hearing and agreed to the terms of the civil penalty.

When asked if the substitution was made knowingly, Joe Hobson of the law firm Lien, Hobson & Johnson, Keizer, Ore., said he had no good explanation, but that Great Western had no economic incentive to do so. He said the substitutions did occur in some situations, but they were not widespread. He added that product quality was not compromised.

"Safeguards have been taken to make sure this technical violation does not hap-

pen again," Hobson said.

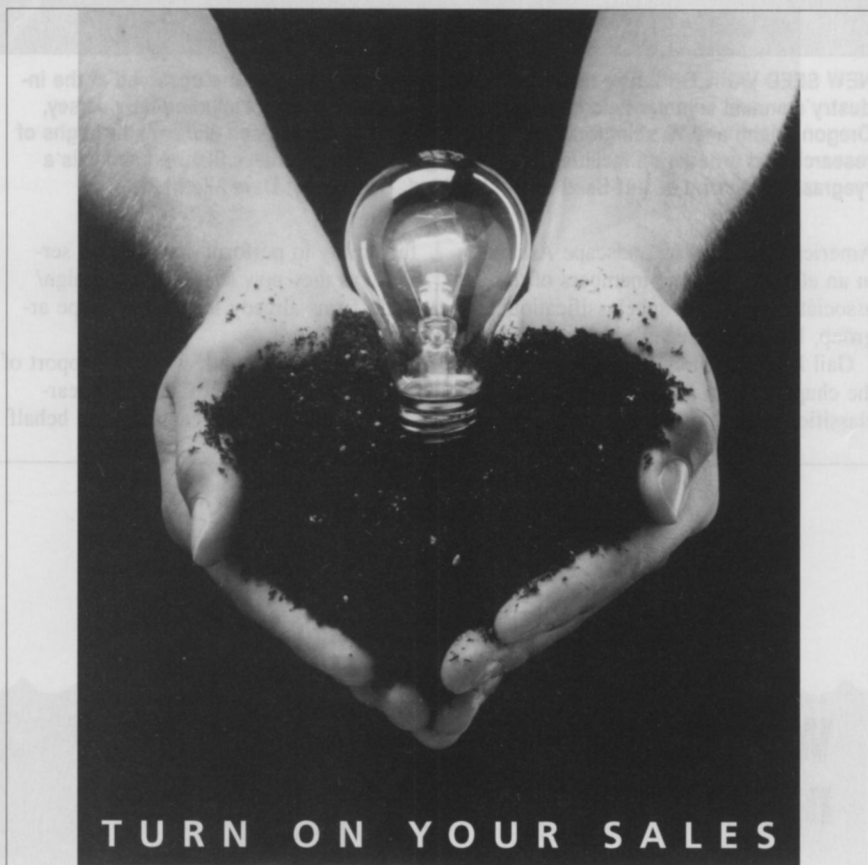
Great Western said the problems had been corrected at the start of the probe.

Florida Landscape Designers Seek Licensing

Florida landscape designers are caught in a quagmire: The law prevents them from receiving a fee for design services because they are not licensed to do so, but the state also prevents them from obtaining a design license.

State law requires landscape architects to be licensed to conduct such work in order to protect the safety and welfare of the public. All the more reason for landscape designers to be licensed, according to Tom Lund, president, TLC Landscaping of Vero Inc., Vero Beach, Fla.

Lund is preparing a bill seeking sub-classification to the state statute which, if passed by the Florida legislature, would allow landscape designers to collect fees for their design work. Lund said he has contacted the Florida chapter of the



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NEW SEED VARIETIES, new techniques and new developments were observed at the industry's annual summer field days held throughout the country including New Jersey, Oregon, Idaho and Washington. Plot tours, the latest seed research and walk throughs of research and production facilities were highlights of the field days. Pictured above is a ryegrass field taken at Turf-Seed Inc. in Hubbard, Ore. Photo: Dave Miethke

American Society of Landscape Architects in an effort to become members of the association and seek subclassification as a group, but he has received no response.

Gail Boorman, FCASLA president, said the chapter is not pursuing such a subclassification. She said it wouldn't impact

the ability to perform design/build services as they now stand. Many design/build firms already have a landscape architect on staff.

Nevertheless, Lund, with the support of the Florida League of Cities, is spearheading a grass roots campaign on behalf

of the state's estimated 5,000 landscape designers in an effort to be licensed. Lund a landscape designer and contractor for nine years, doesn't want to be a landscape architect, he simply wants to be paid for the professional work he's been performing.

Rather than take the state's seven-part landscape architecture exam, Lund is proposing that landscape designers take two sections: plant identification and principles of landscape design.

"No new test would need to be created. We're just looking for cooperation and a small piece of the pie," Lund said.

Current state law only allows landscape architects to perform design work unless specifically exempted or unless the func-

(continued on page 56)

CORRECTION

In a news story published in the August issue of *LLM*, Mark Rostvold's name was misspelled. Rostvold is vice president of lawn and grounds care division for John Deere.



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Association News

LAWN MOWER RACING got a thumbs down from the **Outdoor Power Equipment Institute's** board of directors. The OPEI, on behalf of its membership, recently announced that it does not support the concept of lawn mower racing and opposes the sponsorship of such events. Such an activity runs counter to the goals expressed in the association's mission statement, which "encourages and promotes initiatives by the industry to create and maintain a healthier and safer environment and the effective and safer use of outdoor power equipment."

OPEI's position runs counter to the formation of the United States Lawn Mower Racing Association and its first Sta-Bil National Lawn Mower Racing Championship, held earlier this month in Illinois.

In formulating its position, OPEI also took into account safety and legal factors, citing "complex and costly product liability problems, which adds unnecessary cost to the product."

Twenty landscape students received a financial boost from the Landscape Educa-

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tional Advancement Foundation, administered by the **California Landscape Contractors Association**.

The scholarships, totaling \$16,200, ranged from \$250 to \$1,500. They are awarded annually to college-level students majoring in ornamental horticulture and other landscape-related fields. Recipients are selected based on financial need, career goals, work experience, grade point average and extracurricular activities.

"Just the Facts — A Systematic Approach to Diagnosing Plant Problems" is the theme of the **Interstate Professional Applicators Association's** annual convention and trade show, Oct. 7-9 at the Sheraton Hotel in Tacoma, Wash.

The program begins with a turfgrass field trip to Farm Five at the Washington State University Research Center in Puyallup. Attendees will view research and demonstration plots testing turfgrass herbi-

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cides, groundwater leaching and the fertilization of grass seed varieties. The group will also tour the Pacific Rim Bonsai Collection and the Rhododendron Species Foundation Garden at the Weyerhaeuser corporate headquarters in Federal Way.

Show speakers include Jim Green, extension horticulturist at Oregon State University, on "A Systematic Approach to Diagnosing Plant Damage"; WSU Extension Entomologist Art Antonelli and Plant Pathologist Ralph Byther, on "Top 20 Pest Problems"; and WSU Extension Turfgrass Specialist Gwen Stahnke and Horticulturist Ray Maleike, on "What Else Can Go Wrong...Non-Pathogenic Plant Problems."

New marketing tools from the **Professional Lawn Care Association of America** help lawn care professionals communicate with their customers and the public.

A brochure, "What You Should Know About Lawn Care Products and Services," offers examples of appropriate answers to some of the more commonly asked questions by lawn care customers. It covers pesticide safety, regulation of lawn care products and services, posting and notification, organic products, integrated pest

management and the pesticide registration process.

The brochure was developed in cooperation with the Environmental Protection Agency and the Federal Trade Commission.

Also available is "Healthy Lawn, Healthy Environment," a booklet that teaches lawn care customers about the importance of proper lawn maintenance; and offers tips for using pesticides and choosing a lawn care service.

Several green industry professionals worked in conjunction with the EPA to develop this booklet.

A water conservation program supported by the **Nevada Landscape Association** is designed to alert homeowners to watering problems, and offer solutions.

Door hangers are placed at homes where watering problems exist, and a checklist of problems observed and possible solutions are included. Door hanger recipients are given the telephone number of the Local cooperative extension; and, when necessary, a master gardener will pay a visit to a problem site.

If questions remain, the master gardener will request assistance from a member of the green industry, including NLA

members.

Tips for indoor water conservation are on the backside of the door hanger along with another hotline number.

IN BRIEF... The **California Association of Nurserymen** certified 76 of 199 nurserymen during its June exams, bringing the total of California Certified Nurserymen to 3,073. Advanced level exams are also available. Call Laura Holybee at CAN for details, 916/567-0200...Persons engaged in the maintenance, research, teaching or use of turf surfaces at educational institutions, municipalities, parks and other facilities are invited to join the newly formed **New England Sports Turf Managers Association**. For information, contact: Bernie Keohan, Department of Facility Maintenance, Harvard University, 617/495-5929...The **Mid-America Horticultural Trade Show** is sponsoring a two-day Spouse Program during its 1993 show in Chicago, Jan. 14-16. For show information, call 708/526-2010...Nov. 2 has been selected as "Commercial User" day for the Southwest Outdoor Power Equipment Show. Contact: **The Service Dealers Association**, 1946 S. IH-35, Suite 100-A, Austin, TX 78704-3693; 512/443-7999. ■

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Century Rain Aid Merges Florida Offices

CENTURY RAIN AID and the irrigation division of Banks Supply recently merged their Florida operations. The merger creates a network of 10 branches across the west coast of Florida. Century operates 22 branches in seven states.

NWFA Supports Responsible Water Use

The second annual trade show and meeting of the National Water Features Association is set for Nov. 20-21 in Orlando, Fla. The group is made up of builders and manufacturers of water features and products that use flowing, recirculating water.

The NWFA was formed in 1990 to promote the responsible use of water features in both interior and exterior landscapes, and to develop standards of workmanship, construction and installation for the water features industry.

As a new member bonus, anyone joining NWFA before Nov. 20 will receive



free show booth space. For more information on the show and membership, contact the NWFA, P.O. Box 11198, Naples, FL 33941-1198; 813/263-4029.

ASIC Selects New Officers

New directors elected to the American Society of Irrigation Consultants are Dick Smith, president; Brendan Lynch, vice president; Dave Pagano, treasurer; Steve Smith, secretary; and Jack Donis, past president. Directors include: Mitch Johnson, Jeff Crean, Charlie Glick, Ralph Armour, Marty Dickson, Dan Benner and Rick Davis.

The ASIC is holding its national conference Sept. 12-16 at Marriott's Hunt

Valley Inn, Hunt Valley, Md. The theme of the conference is "Irrigation — The Environment and the Law."

Watering Techniques Vary During Drought

Ornamental and garden trees need different watering techniques than turf in drought conditions.

Chris Starbuck, a University of Missouri-Columbia horticultural scientist, said established trees need little attention most years because they draw water from deep in the soil profile. But water depleted from root depths takes time to replenish.

As a result, trees need watering thoroughly every 2 to 3 weeks. Water must be added slowly enough and in sufficient quantity to trickle down into the deep root layers.

Grass and trees compete for water. A weekly application of 1 inch of water will mainly be taken up by turf, never reaching tree roots. One technique is to leave leaky 5-gal-buckets under drought-stressed trees and move and refill them at intervals. Wet the soil down to about 18 inches. ■

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TOUGHING IT OUT IN TEXAS

*Diversification
and a shift away
from construction
toward maintenance
helped Greater
Texas Landscapes
survive a boom
and bust Austin
economy.*

By Julie A. Evans

"IT DOESN'T MATTER if you're male or female. As long as you do good work, I think you're respected for it," said Debby Cole, president of Greater Texas Landscapes in Austin.

Although she is a woman in a male-dominated business, Cole said she's never perceived any prejudice or favoritism in the landscape industry. In fact, she disdains gender-driven "brownie points."

"In bidding city and governmental jobs, brownie points are given for being female or minority. I don't like that and I won't bid those jobs. People should be judged on the work they do."

Cole, 43, concedes that although doors were always open for her, she didn't have to walk through all of them. After a stint as a state-hired horticulturist, Cole entered the professional landscape industry from the top — as a business owner — and grew her company from a two-person partnership in 1981 to a 51-employee corporation in 1992. And under her direction, Greater Texas Landscapes has evolved from a \$100,000 landscape design and installation company to a \$1.25 million landscape management, construction and design firm, offering interior and irrigation services as well.

CLASSROOM TO BOARDROOM. Education has played an important role in Cole's professional development. She holds a bachelor's degree in biology and history with a concentration in botany from the University of Texas, and a master's degree in landscape horticulture from Texas A&M.

"At that time (mid-70s), there weren't many people with a bachelor's or master's degree in horticulture in Central Texas," she said.

Cole landed the state horticulture position, which she described as "pieced together for me," upon graduation from Texas A&M. That role required caretaking of the governor's mansion, state cemeteries and other state-supported properties. After hours, she was the garden editor for the now-defunct *Austin Homes and Gardens* magazine.

Cole left her position with the state after two-and-a-half years and concentrated on her writing. A book resulted, "Gardening in Austin and Central Texas," which she described as putting her master's thesis into a practical gardening guide.

Next career stop was education: Cole taught horticulture to learning disabled children for a year on an "emergency certificate" until school officials were able to find a certified candidate for the position.

Despite the round-about path she chose, Cole finally found her niche in landscaping as a successful business owner. In 1981, she founded Greater Texas Landscapes with Kay Wagenknecht, a landscape architect. According to Cole, the timing was right because Austin was on the verge of a building explosion.

"In 1981, there weren't many landscape companies in Austin," she said. "Austin was provincial — there were two commercial landscape companies that I know of."

The building boom that would hit the area had yet to take off and professional land-





Cole said she gained management experience through the school of hard knocks, trial and error and making mistakes.

from a management viewpoint.”

In fact, Cole had no management experience prior to owning her own company. “I had no business background — none,” she said. “It’s so common among people who start a business to have an area of expertise, but no business background. But now I do much more ‘business’ and less horticulture. I learned by getting involved with the school of hard knocks, through trial and error and making mistakes.”

She also learned through association involvement. In 1982, Cole attended a conference of the Associated Landscape Contractors of America. The meeting opened her eyes to how little she really knew, she said. “From then on, I began to approach the business much more seriously.”

Today, Cole is a member of ALCA and the Professional Grounds Management Society; a member and past president of the Texas Association of Landscape Contractors; and a member of several real estate and property management groups, including the Real Estate Council of Austin, the Building Owners Management Association, the International Facilities Management Association and the Austin Chamber of Commerce. All this in addition to her career and family — Cole is married and the mother of two daughters.

To squeeze all aspects of her life into a 24-hour day, Cole rises at 4:30 a.m., takes care of some work at home, arrives at the office by 6:30 a.m. and leaves by 6 p.m. In between, she manages to run her company and attend various board meetings and luncheons.

scaping was not given the respect it is today. “In those days, a shopping center would come out and put up a parking lot and no trees. There were no landscape ordinances.”

It wasn’t until 1982 when construction picked up and landscape ordinances were issued that more landscape companies emerged on the scene.

TURNING POINT. Their first year in business, Cole and Wagenknecht worked alone, providing landscape design and installation

services to the residential market. Shortly thereafter, they added two employees — one full-time and one part-time. In 1983, a full-time office worker joined the staff. But 1985 was the year that it all came together for Greater Texas Landscapes.

By that time, Cole’s partner had married and relocated to another state, and Cole was alone in the leadership role. The company had done some mid-sized commercial work, usually around \$40,000 to \$50,000 accounts. One day, Cole was asked to bid on a job that

would bill for \$450,000.

“I remember saying, if this job doesn’t work out, the company will go under. If it does (work out), it will be a turning point.”

Cole was awarded the bid and the job was a success. It proved to Cole that the once-small company could assume larger accounts. More importantly, it sharpened Cole’s organizational skills and gave her a boost of confidence.

“It was only a year after my partner left, so I was still a little nervous about taking it on myself

Nighttime is her time, she said. But even after hours, she volunteers time to a teen leadership program in the local school district. Through this program, 10 mentors are selected to work with 25 high school seniors singled out for their leadership potential. Cole is the only woman business-owner mentor.

She also meets one night a week with the Travis County Horticulture Committee, for which she is on the advisory board.

When asked how she manages to balance work, volunteerism and family with business, Cole replied, "It's a matter of not getting too lopsided, not letting work become dominating."

TEAM WORK. Cole does not work solo, of course. She has assembled a team of workers with whom she entrusts the ability to make their own decisions.

"Always, from the beginning, it's been a fairly democratic operation. It's not a matriarchal society by any means."

James Cannon, Jim Bailey and Carl Dixon head up the landscape

GREATER TEXAS LANDSCAPES INC.

HEADQUARTERS: Austin, Texas

FOUNDED: 1981

PRESIDENT: Debby Cole

PRIMARY SERVICES: Landscape management, landscape construction, irrigation services, interior design

EMPLOYEES: 51 full-time, 15 seasonal

1991 NET SALES: \$1.25 million

management group. They supervise all landscape maintenance, foremen and crews.

Lynda Courtney is a landscape architect responsible for residential design. She also oversees construction on her projects.

Judy Mullins is the interior manager and takes care of all interior sales, service and necessary follow-up.

Angel Gamboa is the irrigation service manager. He coordinates with Cannon on maintenance ac-

counts that opt for irrigation services.

Cole is in charge of the construction division as well as marketing and sales.

Employees work together as members of a team, Cole explained. "It sounds hokey to make it sound like family, because we're not family. We're a team and we're really supportive of each other."

Cole said she tries to keep as much of her staff employed year-round as possible, despite slow-

downs in January and February. "It's interesting, when I go to ALCA meetings, they talk about laying people off. And I guess profits would be higher, but I just couldn't do that. They give so much to the company."

To keep employees busy during slow periods, Cole puts them to work on internal improvement projects. For example, employees put a new roof on the mechanic shop last year. Strategic planning also occurs during that time.

To Cole, management means communications and shared responsibility. It also means providing employees with education and training. Cole is big on continuing education and encourages participation in a statewide certification program. Since the program began in 1990, seven of her employees have become certified landscape contractors in Texas.

Her support of continuing education extends to the industry as a whole.

"I'd like to see some of the smaller companies become better educated, be it by joining

(continued on page 24)



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Texas

(continued from page 22)

TALC, ALCA, attending seminars and so on. It's in everyone's best interest to continue learning. We're called in a lot to correct what someone else messed up.

"I see too many companies going in and making uneducated guesses. I wish there was a forum for better education for some of our local contractors."

SAGGING MARKETS. As time would tell, it would take educated contractors to survive in Austin's volatile real estate market. No sooner had the Austin economy boomed than it began to bust apart at the seams. As the mid-80s building frenzy screeched to a halt, many landscape construction companies were caught unprepared. The high rate of savings and loan failures in Texas only made matters worse. By 1986, building activity was at a standstill.

"The town used to be dotted with cranes," Cole said. "Now there are a lot of buildings sitting empty."



Greater Texas Landscapes, by then a \$1.2 million company, was not spared the brunt of the slowdown. Revenues dropped to \$600,000. "We had a difficult time in 1986-87," Cole said. "Until the end of 1986, we had steadily climbed in income and commercial installation. Then all commercial construction stopped."

Cole's conservative business approach may have steered the

company away from the fate of less fortunate landscape companies. "I don't know whether it was luck or smarts," she said.

For starters, Cole was careful about the clients she worked for and strived to develop good relations. Unlike some of her competitors, "I was never left holding the bag," she explained.

The company also shifted its focus away from landscape con-

Diversification from construction to maintenance revitalized Greater Texas Landscapes.

struction and emphasized maintenance instead. It proved to be a good move. The company shifted from 70 percent construction and 30 percent maintenance (pre-building boom) to 40 percent construction and 60 percent maintenance (post-building boom).

"But still, revenues dropped drastically with the same overhead, so it took some footwork on my part to make it," she said. "To this day, we do little commercial construction. It used to be unusual if I didn't go to three pre-bid conferences a week. Now there may be one a month."

Cole said bidding has become much tighter and more controlled; whereas in the past, "people were throwing out bids so quickly they were all over the board."

Greater Texas Landscapes declines to bid projects that are open to all companies. Instead, it bids by invitation only. "That

(continued on page 56)

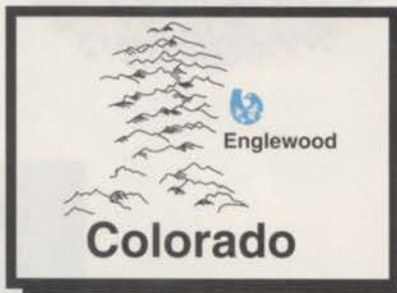
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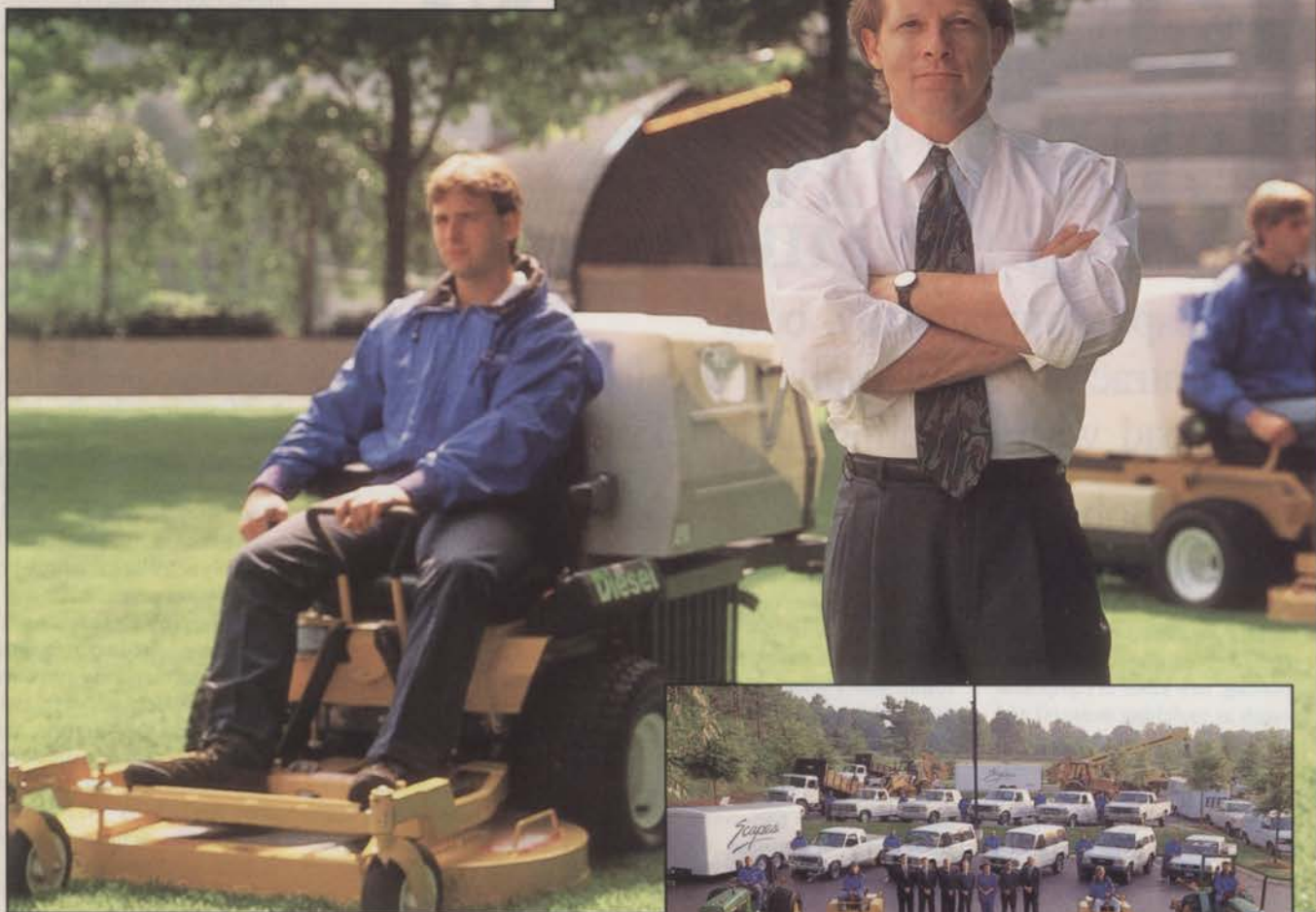
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ARE CONTRACTORS' RECYCLING EFFORTS BEING STYMIED?

Despite bureaucracy, both contractors and suppliers are forging ahead with recycling undertakings.

By Bob Gitlin

LANDSCAPE CONTRACTORS have been answering recycling and environmentally correct mandates through grasscycling, composting, new kinds of equipment (such as mulching mowers) and recyclable product packaging.

By recent count, 14 states and the District of Columbia had enacted laws barring the dumping of yard waste in landfills. But it's widely believed that such practices are expected to be banned completely — nationwide — by 1995 or 1996. This in turn has set in motion the need to compost, a business lawn and landscape maintenance professionals are beginning to go into for themselves.

The efforts of maintenance contractors to be good environmental citizens, however, are often stymied by ineptness on the part of the very public bureaucracies that issue the landfill bans. But for the most part, the industry has more recycling and product options than ever before. It's just a matter of putting them into everyday practice.

ROADBLOCKS. Sam Russo, owner of Sam Russo Landscape, Bayville, N.J., used to have his employees dump their grass clippings on a nearby farm or large

stake of land. But new laws and tighter regulations on the part of both the Department of Environmental Resources and the Environmental Protection Agency now prohibit Ocean County contractors from doing this.

"They're worried about runoff and leaching of (lawn care chemicals in) grass, so they corral us into county- or state-run recycling centers," Russo said. These

banner willingly, he said, only to discover lack of composting facilities for the remaining collected clippings.

"Obviously, you can't grasscycle all the time," he said. "The problem we have with grasscycling is in the spring when it grows at an incredible rate, crossing over driveways and sidewalks. If you didn't remove it, it would choke the established grass."

By the mid-1990s, most landfills across the country will have banned yard waste dumping.

centers do composting free of charge to those who bring the waste. "But they're not able to meet the demands of the community in our particular area."

In early August, Russo had no place to dispose of his grass clippings legally. And every landscape firm in Ocean County had the same problem. Professional mowers took up the grasscycling

Two years ago, he found a mulching mower, the Dixie Chopper, a machine "with incredible agility to mulch grass and dissipate it to where it's just not that visible."

The machine is used where Russo's employees don't have to cross driveways and sidewalks, and in inconspicuous areas. "Basically, we're using it wherever we can get away with it."

Unquestionably, professional mowers see a benefit in grasscycling; without having to collect and haul away the grass, labor costs drop and profit margins increase.

"Sometimes we have to bag it; there isn't a machine made that's going to dissipate it," Russo said. "But for the most part, this year I'd say we averaged 30 percent fewer clippings. Our company was cutting 500 cubic yards of grass a day two years ago. We've reduced that to 300. But with a dump site only allowing us to dump 40 cubic yards a day, I have a 260-cubic-yard-a-day problem."

Commenting wryly on what he sees as a political chokehold in New Jersey, he added, "I would open a composting place, but I'd probably be looking to retire when I finally got permitted."

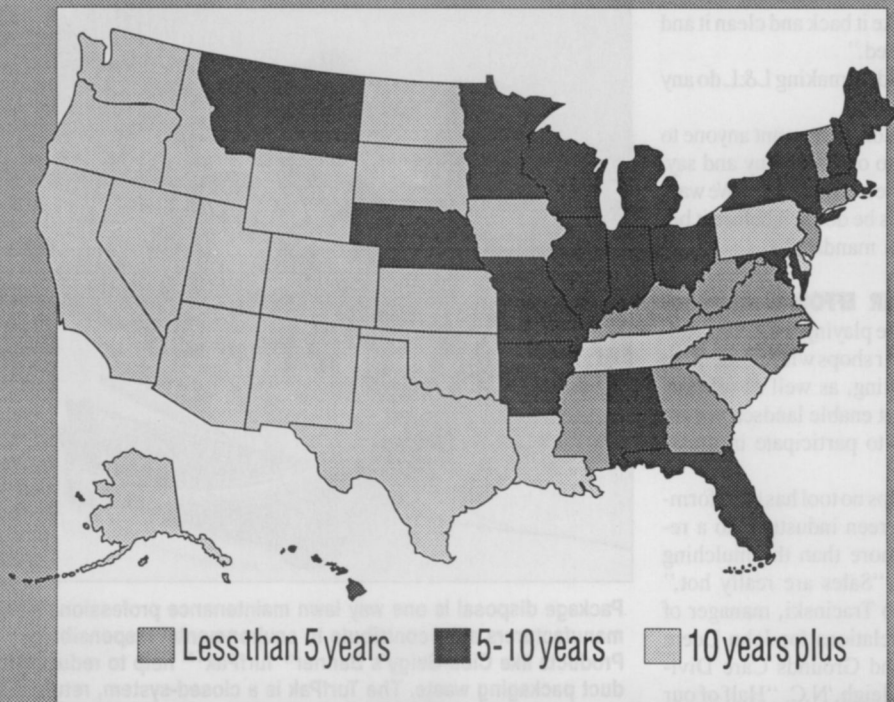
Zoning problems encountered when setting up compost facilities are intense. A poorly run compost heap issues a stench that will fell a horse; a well-run pile, properly windrowed and maintained, has a smell a lot like a rich forest floor. But NIMBY — "Not in my back yard" — is the outcry from skittish local residents.

David Middlemiss of L&M Lawncare in the Pittsburgh, Pa., area, was all ready to operate a new composting facility, but ran into problems with the local municipalities. In other words, he can't find a place he'll be allowed to put it. Although grass clippings in Pennsylvania are still acceptable in landfills, a recent state bill proposed taking all grass clippings out of landfills and putting them into compost heaps. Right now, Pennsylvania landfills reject all yard waste other than grass.

As grass is potentially the foulest olfactory threat, laws exist governing proportions of composted materials. Middlemiss would be held to no more than 33 percent grass clippings.

Some contractors who are ready to comply with composting mandates are already sort of doing it

U.S. LANDFILL CAPACITY



Source: NSWMA, 1992

anyway. Tecza Brothers, Elgin, Ill., has employees bring all landscape waste it generates back to its own yard, where it's separated according to type, and reused if possible. But no specific steps are taken to catalyze decomposition.

Grasscycling is a hard sell to homeowners, said Ed Reier, sales and marketing manager for Tecza Brothers. People think leaving the clippings on the lawn will suffocate it, or lead to thatch buildup — both misconceptions. "We state in most of our maintenance contracts that clippings will be recycled — we use the word 'recycled' — to the lawn, collected only if they become unsightly."

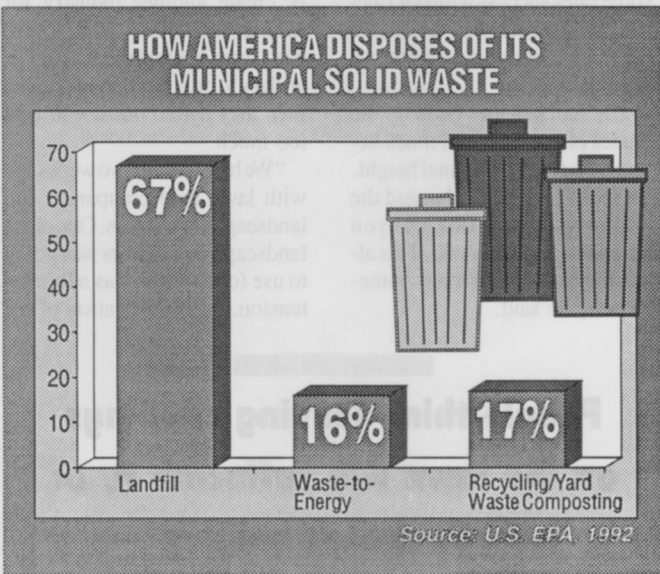
The environmental movement and more educated lawn maintenance operators has led the green industry to reduce blanket pesticide sprays and promote more walk-around analysis and targeting of pests.

"The means of control may not even be a chemical," Reier said. "It may be manual removal of an insect nest, or a new biological control such as spraying a plant in spring with a dormant oil spray to suffocate insect eggs. This is one way we use to treat an insect before it emerges and begins to do damage."

MAKING A DIFFERENCE. Based in Hudson, Ohio, LawnMark has operations in Ohio, New York, Pennsylvania, Maine and Virginia. Although LawnMark does not offer mowing services, it has still found a way to make a difference.

"This past fall we got into the first major marketing push for an all-natural program, using no pesticides, just all-natural fertilizers. We give it equal billing in our literature alongside our classic program," said Greg Johnson, LawnMark marketing manager. "The programs depend heavily on homeowner or customer cultural practices."

While the all-natural program strictly offers four fertilizer ap-



plications, customers have the option of purchasing supplemental services, including pesticides. Grub control was a frequently purchased item this year.

"So far, in this first full season we've gotten into this," Johnson said, "we're surprised to see we're getting about 5 or 6 percent of our new sales in this all-natural program, which is a tad more than we anticipated."

Rob Zolezzi, part owner of

L&L Landscape Services, Santa Clara, Calif., said a lot of his Silicon Valley clients demand he be involved in environmental issues. Other than grounds maintenance, L&L does landscaping and renovation. It recycles its plastic nursery containers: all flats, 1- and 5-gallon containers and 50-pound pallets. All go back to the nursery for reuse.

Almost all L&L mowers are mulching mowers now. "We used

to fill 10 dumpsters a day with grass clippings," Zolezzi said. "And they do not compact. We used to haul out maybe 40 yards of grass clippings per day to the landfill. We've cut that in half."

Landfills still accept yard waste, but the ones nearest his area are closing up one by one, Zolezzi said. "Once you start having to haul it 100 miles, you're going to pay 10 times more per yard than you're paying now. We pay \$4 to \$5 a yard to haul grass clippings away. Eventually it's going to be \$30 or \$40 because there will be no where to put it."

L&L composts its own brush and tree trimmings, either internally or by taking them to a wood composting facility equipped with chippers and other equipment.

In California, water conservation is another example of environmental awareness. "We have certified water auditors within our company," Zolezzi said. "We take employees who are irrigation technicians, put them through seminars and have them become water auditors. Out here with the drought, it's important they can design, monitor and audit irrigation systems so we are not wasting water."

Finally, four full-time shop

mechanics recycle all dirty drained machine fluids. "We pay a company a lot of money to come in once a week and drain the oil. They take it back and clean it and it's reused."

Nobody's making L&L do any of this.

"We don't ever want anyone to walk into our company and say, 'You have to do this now.' We want to always be doing it before it becomes a mandate."

SUPPLIER EFFORTS. Manufacturers are playing their role, running their shops with an attention to recycling, as well as offering tools that enable landscape contractors to participate in grass-cycling.

Perhaps no tool has transformed the green industry into a recycler more than the mulching mower. "Sales are really hot," said Bob Tracinski, manager of public relations for John Deere Lawn and Grounds Care Division, Raleigh, N.C. "Half of our sales now involve a mulching attachment."

Tracinski also happens to be chairman of the public relations committee for the Professional Lawn Care Association of America, and has done a lot of work on the association's grass-cycling campaign.

"Public education is the key. As long as the lawn is mowed frequently and the mower is fixed with recycling attachments, mulching accessories, it's fine to leave clippings on the lawn. They do not add to thatch. They're mostly water; they decompose quickly. Twenty percent of the nitrogen goes back into the soil to feed the lawn; over a mowing season, it's like an application of a commercial fertilizer, so you save money. People need to be told this."

In Racine, Wis., Jacobsen Textron has been recycling in-house as well as providing customers with mulching mower technology.

"At the factory level," said Dave Buchanan, Jacobsen's marketing communications specialist, "we've been working on recycling hazardous waste, or eliminating the source of it. We've gone to a less caustic paint and are recycling solvents."

"As far as what we offer the industry so they can be good environmental citizens, we've seen

NEW TECHNOLOGY



Package disposal is one way lawn maintenance professionals and manufacturers alike contribute to environmental responsibility. Products like Ciba-Geigy's Banner® TurfPak™ help to reduce product packaging waste. The TurfPak is a closed-system, returnable/refillable tank, designed to limit the potential for user or environmental contamination during mixing.

some sales success with our fine-cut flail, which has gained in popularity because of the move to mulching."

The flail's blades chop up the blades of grass several times before they reach their final height. "It looks like you've bagged the clippings even though you haven't," Buchanan said. This allays the concerns of many homeowners, he said.

ly create another industry for maintenance folks. "For the most part, some leading municipalities will try to do it (composting), but then they'll find out it will cost too much.

"We had a forum two weeks ago with lawn care companies and landscape contractors. One of the landscape contractors was going to use (composting) as a line extension, a diversification of his

People think leaving clippings on the lawn will suffocate it, or lead to thatch buildup — both misconceptions.

Packaging is another area in which manufacturers are becoming more careful. For instance, some minibulk containers used by DowElanco, Indianapolis, are returnable now. Water-soluble packaging for some items is another growth area, said Keith Kohlmann, DowElanco communications manager.

He predicts that the landfill ban on grass clippings will ultimate-

business. The only hang-up is finding land where you can meet the runoff requirements and avoid the odor issues of the neighbors."

Lower-dose products that reduce the amount of packaging you need, and water-soluble packaging, are two main areas in which suppliers to the green industry are making a difference, said Jeffrey Cook, business manager for specialty products at Sandoz, Des

Plaines, Ill.

Formerly ornamentals manager for the western United States for ChemLawn, Cook thinks the environmental movement has begun to transform lawn and landscape maintenance.

"There's a lot of concern over what type of chemicals are being used and whether they're being used properly — at the right time of year, and how much on the lawn. Mulching, pruning and non-mechanical alternatives are popular now."

WATER CONSERVATION. Steve Snow, retail marketing manager for The Toro Co.'s irrigation division, Riverside, Calif., faces a barrage of intense concerns about that state's half-decade-old water shortage, and products that do something about it.

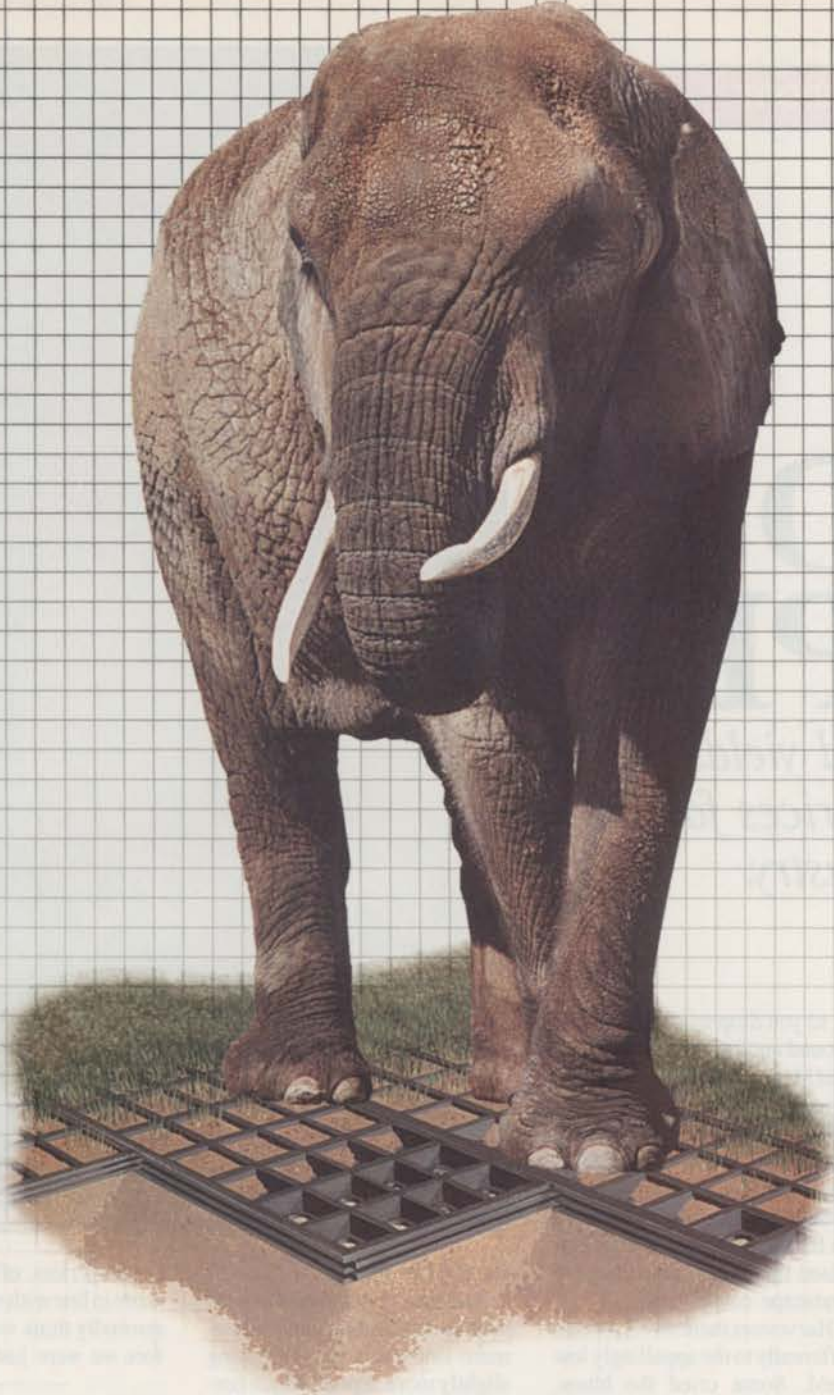
A new water conservation bill, due to go into effect in January 1993, will clamp down hard on water wasting. Drip irrigation is the big talk out here now, new ways to water with as little water as possible. Toro's TechLine, a subsurface irrigation device, is used by the city of Vacaville to water median strips between 4 and 10 feet wide. This eliminates the wasted water caused by over-spraying.

Other Toro products are designed to shut off sprinkler systems automatically when they're vandalized or damaged. Micro Spray applies water in gallons per hour instead of typical sprinklers, which are rated in gallons per minute.

"We're seeing more and more controllers with hookups and sensors," said Keith Shepersky, product manager, Rain Bird Sprinkler Manufacturing Corp., Contractor Division, Glendora, Calif. The new above-ground Rain Check and a new line of Aqua Miser underground soil sensors both inhibit any electricity to the valves should readings indicate there's enough water already.

"Sales of these types of products are just starting to pick up. We've had Rain Check for five years, Aqua Miser three or four. When I wrote the Rain Bird landscape drip irrigation design manual in 1984, everything sat as far as drip was concerned. We hit the drought — everybody's interested in irrigation." ■

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



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WEATHER TAKES A TOLL ON SEED SUPPLY

Low grass seed yields mean higher prices for the landscape industry.

By Bob Gitlin

MOTHER NATURE conspired this past season against an abundant grass seed harvest in the Pacific Northwest. That means sod and seed — especially bluegrass — will cost landscape contractors more this fall and next spring.

"If you could have planned for the four main crops to come out on the short side," said Dennis Combs of Fine Lawn Research, "you had to do about 10 things, and all 10 happened."

The first thing that went wrong was a dry fall of '91, which hurt red fescues and, to a lesser extent, bluegrasses. Next, a "soft" winter set in instead of the hard, cold winter that grass crops need to vernalize (start producing seed as a survival reflex). A mild wet spring would have salvaged bluegrass; it turned out hot and dry.

Then, a hot spell in May damaged annual ryegrasses and tall fescues. Perennial ryes fared a bit better because they came up a little later and some rain helped them get through. During harvest time, however, untimely rains shattered seed off the heads, whittling down the crop.

"If it rains when the crop has been windrowed, you have to bluff

it, so you drop more seed on the ground and lose more that way," said Mark Grundman of Medalist America, Minneapolis, Minn.

Sod farmers who had put years of long-term investment into bluegrass cried for contract re-negotiations and got them. To make up for the loss, seed companies raised the prices they charge to landscape contractors.

Harvestors themselves reacted differently to the appallingly low yield. Some cried the blues; others welcomed what they saw as a corrective upswing in the market. Newer, smaller companies, struggling for a toehold, suffered from an inability to expand; established companies saw the low yield as a blessing in disguise, eliminating weaker competition and strengthening prices.

"The cost of common Kentucky blue was as low as 35 cents a pound, and all your elites are pegged to common," said Barry Green Jr. of Jonathan Green, Farmingdale, N.J. "That cost today is about \$1.80 for common, and your elites are well up there. A lot of sod orders are being sold, but at more than \$3 a pound. This is a shock to sod growers; last year they bought the same level of seed



for \$1.75 to \$1.90."

And that's just the cost of seed sold to distributors and middlemen. End-users will be paying slightly more, a price which covers freight and mark-ups.

"Grass prices are going up 20 percent to 30 percent on average," said Mike Baker of Pennington Seed, Lebanon, Ore., "except bluegrass, which is out of sight. Last year we offered an improved variety, Huntsville, at 60 cents. This year it'll be \$1.75 to \$1.80."

But not to worry, said Art Wick of Rocky River, Ohio-based LESCO. Not enough lawn maintenance people realize seed is the smallest part of the cost of establishing turf, he said. "Labor, prep and other factors are significantly more expensive than the seed. You don't have to charge a lot more to recoup your original costs.

"In the '80s we produced lush harvests and prices went way

down. Prices offered now are more in line with what one would normally think we'd charge. Before we were just cheap."

Presented below are seed yield reports for various producers. This is not an all-inclusive list of producers or varieties, but a representation of the 1992 harvest.

E.F. BURLINGHAM & SONS, Forest Grove, Ore. Burlingham welcomes the low yield and the opportunity to increase pricing, according to the crop analysis of Mike McCarthy. "The weather's been good. As far as what we've got to harvest, it's gone well."

But then he does admit yields are down. "I guess some people call that bad. Looking at our oversupply last fall, some people would say it's good. We brought supply and demand a lot closer than we anticipated. I expect that



Billions of Kentucky bluegrass seeds drop into an underground receiving area to be quickly moved to cleaning machinery. Photo: Jacklin Seed.

prices have firmed.”

New varieties include Banner II fine red chewing fescue, to be marketed by O.M. Scott & Sons, ideal for home lawns and parks. “We will also be coming out with some new tall fescues that are not commercially available at this time but will be soon,” he said.

FINE LAWN RESEARCH, Lake Oswego, Ore. Perennial ryegrass is off 15 percent to 20 percent in yield over last year, annual ryes are off 25 percent, Kentucky blues and red fescues are off 50 percent. Prices will rise accordingly. Production of new varieties is higher than last year, but per-acre yield is less, Combs said.

Supranova poa supina (annual bluegrass), available in limited supply, is ideal for high- or dramatic-use areas, where nobody can get anything else to grow, he

said. “It’s the hardest-use crop in the shade. It’s on the Chicago Bears field, and it’s being installed in Detroit’s Silverdome on new sod.”

JONATHAN GREEN, Farmingdale, N.J. “Grass seed markets have been affected differently,” Green said. “Common Kentucky blues did the biggest price jump ever, from the lowest price ever.” They’re up 200 percent, fine fescues 100 percent, perennial ryes and tall fescues 30 percent to 50 percent.

“Last year we got 700 pounds of bluegrass seed per acre; this year, 200,” Green said. Montauk and Duke elite tall fescues yielded last year a record 1,400 pounds of seed per acre; this year, 600 to 700. “Four varieties have been affected in a very big way for us.”

Washington Kentucky bluegrass, which came in at half the

expected yield, is a promising new drylands variety that stands up to lack of water and greens up a month earlier than other bluegrasses.

GREENSEED, Gallatin, Tenn. Another tall fescue shows fine leaf texture, spring green-up and pythium and leaf spot tolerance, said Mike Cline. Dark green Astro 2000 tall fescue, with dense tillers of intermediate density, is suited to high traffic. Affinity perennial ryegrass, very dark green and fine-textured, is a premier variety for Southern overseeding or permanent turf in the North.

Seed yields for GreenSeed varieties were significantly reduced by early hot weather during pollination stages of seed production in Oregon’s Willamette Valley, Cline said. “Yields were 50 percent to 60 percent of nor-

mal. Therefore, seeds for improved varieties are in short supply and it is expected that they will sell out early. Early booking is recommended.”

GREENSIA INTERNATIONAL, Los Angeles. Greensia enjoys a position immune from the ups and downs of a bad U.S. harvest. This company imports zoysiagrass seed grown in Asia. “All zoysiagrass seed is imported. We have a very large supply of it because the latest harvests have been good,” said Sean Pendergraph.

Greensia offers other seeds harvested by Farmer’s Marketing, whose Numex Sahara bermudagrass and Midnight Kentucky bluegrass go onto Greensia’s biodegradable seeded fabric. The fabric, which comes in rolls, holds the seeds for placement in the ground. “All you need to do is roll it out and water it. You don’t have to apply topsoil on top of seeds. You don’t have to spread it with a spreader.”

Prices of zoysia seeds will be the same as or lower than last year due to an abundant Chinese harvest.

INTERNATIONAL SEEDS, Halsey, Ore. “We are going to be shorter on seed than we were intending,” said Steve Johnson. “But everything we were planning on coming to the market with is still proceeding.”

Eureka hard fescue is ultra low growing — in both mature and canopy plant height — comes up slowly and is a nice low-maintenance grass, he said. Marker slender creeping red fescue takes mowing better, answering a big complaint about the strong creeping red fescue which contractors often want to mow low for a more groomed look. Stress-tolerant Banjo Kentucky blue puts up with heat and has good brown patch resistance.

JACKLIN SEED, Post Falls, Idaho. New Kentucky bluegrasses include Apex, which performs well under shaded conditions, has dark green color, good fall and winter density and is available by request for seed samples only this season, said Gayle Jacklin.

NuBlue, medium dark green, offers extremely good early spring green-up and has shown outstanding resistance to leaf rust and leaf spot/melting out, and intermediate resistance to pink snow mold. NuStar is moderately dense, dark green, with excellent turf quality performance and superior resistance to powdery mildew and summer patch.

New turf-type tall fescues include Pixie, an elite with semi-open canopy, dark green color and excellent summer stress resistance; GO tall fescue, with exceptional brown patch resistance and dense growth habit; and Oasis, with superior brown patch resistance, medium dark green color and low growth habit.

Improved perennial ryegrasses include Advent, which promises high density and good resistance to summer diseases attributable to high endophyte content; and the elite APM, offering high tillering potential and excellent summer stress resistance (due to high endophyte content).

New Ecostar hard fescue features high turf density, excel-

Although seed yields are down this year, harvest is still an anticipated site in the West.

Photo: Lofts Seed

lent texture and exceptional resistance to dollar spot, Jacklin said.

LESCO, Rocky River, Ohio. "The Pacific Northwest had one of the earliest harvests on record," Wick said. Kentucky bluegrass yields bottomed out, and prices jumped accordingly. Fine fescues did not fare well either, he said.

New varieties: Lancer dwarf turf-type tall fescue has a unique fine leaf, low growing characteristic and dark green color. Shamrock Kentucky blue hybrid exhibits improved disease resistance, dark green color, good density and fine texture.

LESCO continues research on two new low growing, dark green, high endophyte turf-type perennial ryegrasses. The company also plans to introduce a high-endophyte creeping red fescue and a very fine-textured chewing fescue containing endophyte.

LOFTS SEED/GREAT WESTERN,

Bound Brook, N.J./Albany, Ore. According to yield estimates compiled by Dr. Virginia Lehman: Rebel II, Rebel Jr. and Rebel 3D tall fescues are down 15 percent to 20 percent over the previous year's figures; Jamestown II and Jamestown chewings fescues are down 20 percent; Reliant hard fescues are down 20 percent; Palmer II, Prelude II, Yorktown III, Repel II, Palmer and Prelude perennial ryegrasses are down 20 percent to 25 percent; P-104, 1757, Sydsport, Ram I, Baron and

Georgetown Kentucky bluegrasses are down 25 percent; and Laser poa trivialis and Southshore bentgrass are normal.

MEDALIST AMERICA, Albany,

Ore. "Blues, ryes, fine fescues and, to a lesser extent, tall fescues all suffered low yields throughout the industry," Grundman reported. A decent crop of tall fescues exists, so supply problems and inflation may not pose a significant problem.

"As a matter of fact, our prices are relatively stable compared to last year on the tall fescues. Common bluegrasses, ryegrasses and fine fescues, though, are coming in at best at 30 percent of projections."

Due to irrigation, proprietaries enjoyed decent yields, he said, "but farmers tie pricing of proprietaries to the common market. As the common market increases, so does the price on proprietaries." Prices on blues, ryes and fine fescues will be up, but tall fescues will remain somewhat stable.

New varieties include APM perennial ryegrass (offered jointly with Jacklin Seed). "The original germ plasm for NuBlue Kentucky bluegrass (also offered jointly with Jacklin) was found growing in the Southwest, making this new variety extremely drought-tolerant," he said. Sun Devil bermudagrass will help a large number of lawn care companies running into bermuda damage. A new zoysia, Sun Rise, is co-marketed with Medalist America.

PENNINGTON SEED OF OREGON,

Lebanon. "It's a mixed bag here," said Baker. "Our newest variety, Virtue tall fescue, yielded extremely well. We'll introduce it in January for spring planting. Everything else we grew was average at best; most of it was down."

Virtue did well because it was fall planted and irrigated on good ground. "Normally you'd think everything would be down, but that particular one, we had several hundred acres in and it just did fantastic."

PICKSEED WEST, Tangent, Ore.

"We're down 22 percent of a normal seed harvest," said Don Floyd, "and the seed isn't as dense as it has been in other years." Prices will be up. Tall fescues commonly offered include Crossfire and Shortstop. Pickseed bluegrasses include America, Touchdown and Alpine. Ryegrasses include Blazer II and Express.

O. M. SCOTT & SONS, Marysville,

Ohio. A crop disaster afflicted the common Kentucky bluegrass harvest in the drylands of Idaho and Washington, said Virgil Meier. "That is a considerable, significant portion of the total bluegrass production." The overall crop has been 25 percent of normal. Most improved varieties of Kentucky blue are grown under irrigation and were not highly affected by the drought, but common Kentucky blues were ravaged. As most production contracts with farmers are based on common prices, prices for all Kentucky blues skyrocketed, he said.

"Common prices have, depending on who you talk to, doubled and tripled, maybe even quadrupled over last year. That affects prices of improved varieties — and availability of bluegrass, because there is a lot of substitution between improved and common varieties."

Dry weather had considerable effect on almost all fine fescue yields; prices have doubled and tripled.

"It's a double whammy," Meier said. "Short on bluegrass and fine fescues, most people do some substitution. That leaves perennial ryegrass, which you can substitute to some extent. But then those prices go up to meet increased demand."

New varieties: Available now,



Aztec tall fescue is very dark green, fine textured and slightly lower growing than competing varieties, Meier said. Brigade hard fine fescue is also new, as are Molenda chewings fescues.

TURF MERCHANTS, Tangent Loop, Ore. All crops were light, some extremely so, and prices have behaved accordingly, said Steve Tubbs. "We harvested 40 percent less this year than last. The fine fescues were the hardest hit: 50 percent off of last year. Normally we get 800 pound yields; we only got 400 this time."

Seed is still the smallest cost of establishing turf.

On hard, sheep and chewings fescues, with half of normal supply, prices have "virtually tripled." Yields of half of normal of Kentucky bluegrasses have quadrupled their price. Fine leaf perennials are only about 30 percent off.

A promising new variety being offered is Evening Shade, a dark fine leaf perennial.

TURF-SEED, Hubbard, Ore. "Tall fescue yields are below average, but with existing inventory should be adequate for most varieties," said Tom Stanley. Debuting Safari and Tomahawk will have limited supplies, as will Silverado. Perennial ryegrass yields are below average due to the drought; supplies will be limited on most varieties especially the intro Brightstar.

Kentucky bluegrass yields are also below average due to weather conditions: Midnight and Blacksburg supplies are extremely limited; and supplies of Challenger, Columbia and 4-Aces will be tight. Fine fescue yields are about 50 percent of normal due to a warm winter and dry spring; all varieties will be in short supply.

ZAJAC PERFORMANCE SEEDS, Haledon, N.J. (Other companies, such as Garfield Williamson, Fairfield, N.J., purchase varieties from Zajac and sell them.) Proprietary Kentucky bluegrasses came in at 20 percent of expected yield.

Ryegrass yields are down 10 percent to 20 percent. Tall fescues are down 20 percent to 30 percent. Zajac reports fine fescues down 50 to 70 percent from normal yield.

New varieties: Vista, a stragg creeping red fescue, offers low maintenance needs and high drought tolerance. NV perennial ryegrass features good cold tolerance and effectiveness in overseeding. Prism ryegrass, though promising, is available now only in sample quantities. Nordic hard fescue is also severely limited in supply. ■

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

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ARE ENGINES TOUGH ENOUGH?

*Today's engine makers
have come a long way in
designing engines for specific
commercial uses.*

By Gary Burchfield

ENGINES FOR commercial turf maintenance equipment are lasting longer than they used to. This is due in part to better engineering and design by engine manufacturers. But, it's also a result of increased awareness of proper engine maintenance by landscape contractors.

"Ask how long an engine will last and you'll have a hard time getting a definitive answer," said John Hicks, engineering project manager at Cushman, Lincoln, Neb. "Engine life expectancy depends pretty much on how the engine is used and how it is maintained."

The "duty cycle" plays a big part — how much time the engine is operated at full throttle and how much time at idle or half-throttle. "It's kind of like an Indy 500 race car," Hicks said. "At 200 plus miles per hour, the engine does well to last through the entire race. But, put the same engine in your car and run it down the freeway at 65 miles per hour, change the oil on schedule, change the air filter regularly and it should last well in excess of 100,000 miles."

Hicks said engine makers sometimes get a bad rap for making so-called "throw-away" engines, which basically were designed for inexpensive consumer application such as a lawn mower that was used two to four hours a week. Some equipment manufacturers tried to adapt those engines to commercial use, but they didn't hold up.

Today's engine makers have come a long way, however, in designing engines for specific types of commercial use.

Kohler, for example, now designs its air-cooled engines for specific "severe" types of application, and they test engines to that type of cycle, according to Wayne



Tests to ensure commercial durability are more common. Photo: Kohler

Anderson, chief engineer for new product development.

"We correlate our own tests with experience from the field," Anderson said. "We look at typical consumer use, where the engine might be run four hours a week, and for commercial applications where they put 40 to 60 hours of use on an engine."

Kohler's test program involves running engines at wide open throttle for part of the test, then under maximum torque for an additional period, along with inter-

mittent idle periods.

"We design engines for a minimum of 1,500 hours of operation without failure," Anderson said, "but we expect many engines will go 4,000 to 5,000 hours without a rebuild."

Kohler is also participating with equipment manufacturers in field trials and development programs to better fit engines to specific uses. "We get feedback from our own field representatives, as well as feedback from the equipment makers," he said.

Anderson said Kohler sells about half of their annual engine output into the turf equipment market. "We think it's a growth market, especially in such applications as wide area mowers."

George Thompson, director of corporate communications at Briggs & Stratton, said the company has increasingly developed engines to meet the specialized requirements of all segments of the turf maintenance industry.

He cited such improvements as their I/C engines with cast iron cylinder sleeves, automotive type air filters, mechanical compression release and automatic lubrication systems. Briggs' premium engine line also includes overhead valve design, which makes for cooler operation, increased efficiency and less carbon buildup which extends valve life.

Honda engines have built up a favorable following with turf equipment users in recent years, and one factor is that all their engines are OHV design, according to Dave Haack. Haack is OEM development manager for the Honda Engine Group at Duluth, Ga.

"We've found that our engines are very popular with both the commercial turf equipment market and the rental industry," Haack said. "The OHV engine is about 30 percent more fuel efficient and up to 50 percent more oil efficient. The OHV design is more environmentally friendly, too; it is more apt to meet the emission standards, such as CARB (California Air Resources Board) which go into effect in 1994."

Haack said Honda does not test engines to any longevity standard, but "with proper maintenance, they last a long time."

(continued on page 36)

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 **BPA MEDIA
INTELLIGENCE**

Engines

(continued from page 34)

A VIEW FROM THE OTHER SIDE. Bill Davids, executive vice president at Clarence Davids & Co., Blue Island, Ill., a large commercial landscape management company in the Chicago area, said they don't worry too much about engine longevity, especially for the first five to six years after they buy new equipment. The company runs in excess of \$2 million worth of equipment.

"Every piece of equipment is serviced once a week — every Saturday — during the season," Davids said. "The foreman of each crew is in

charge of service and it is his responsibility to see that the necessary preventive maintenance gets done. When necessary, they can call in our mechanic for assistance."

Clarence Davids rebuilds its own engines when necessary, but it's not often required.

"One of our main problems with engines is hard starting. Most equipment is trailered to the job site, and the bumps, handling, etc., tend to flood the engines enroute, so they're hard to start when the crew unloads the equipment."

Davids said the company specifies Honda engines for air-cooled applications whenever possible. "We've found them to be more re-

liable and longer lasting." For larger turf equipment, Davids specifies diesel engines "for the extra power and added life."

Larry Burklund is operations manager for World of Green, a major landscape maintenance firm in Lincoln, Neb. "We really don't have many engine problems," he said. Their bigger mowers are equipped either with liquid-cooled gas engines or Kubota diesels.

"We recently had to replace a timing belt on one of the gas engines, but it was our own fault because we didn't change it on time." They try to change timing belts every 1,000 to 1,500 hours of operation.

"Occasionally, we have to change a fuel pump or starter on one of the diesel engines. Except for that, we literally never touch them. But, we have what we consider an excellent maintenance program, which includes an oil change every 40 hours."

World of Green keeps 18 trim mowers, equipped with Suzuki two-cylinder engines, out in the field all season. "We don't have any problems with them — but we trade the walk mowers every year. Running every day, five or six days a week, we just wear them out."

Cushman generally recommends changing oil every 25 hours in their air-cooled engines. "People tend to think that's too often," said Marv Goodding, regional service manager for Cushman. "But, if you figure that engine is running at a full 3,600 rpm most of the time, it's equivalent to running your car at 80 mph for 2,000 miles."

Another item contractors often overlook is cleaning off engines frequently — at least daily. "Paul Scholten, service manager at Kohler, used to say there are three basic rules for getting maximum life out of an air-cooled engine," Goodding said. "Keep the engine clean on the outside, keep it clean on the inside (with clean air coming in) and keep it filled with clean oil. Those are good rules to follow today."

Cushman's Hicks said diesel engine users sometimes get careless about oil change frequency, believing it's not necessary. It's true that a diesel engine will tend to outlast a gas engine, but it's a fallacy that diesel engines don't need the same level of maintenance as gas engines.

"Whereas a gas engine will have a compression ratio of eight or nine to one, a diesel engine requires a compression ratio of 22 or 23 to 1 to ignite the fuel. That means clean air is vital to a diesel engine; it takes twice as much air as a gas engine.

"And, diesel engines aren't as forgiving when it comes to fuel quality either. Dirt in the fuel or through the air intake will quickly plug the injectors. Then, the engine stops. A gas engine will still run, even with a little wear, but the same wear in a diesel engine and it won't run."

EMISSION STANDARDS. Haack and his firm, Honda, believe OHV engines are the "trend of the future" because it will be easier to meet imminent standards than with older, L-head type engines. CARB standards are set to take

(continued on page 38)

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USE READER SERVICE #38

Engines

(continued from page 36)

effect in 1994, and Haack figures Honda will be ready.

Briggs & Stratton's Thompson said their new OHV engines are environmentally friendly, too, but that the California standards will likely require some engine modifications, which ultimately add to engine cost.

"Another problem," he said, "is that the EPA is working on its own standards, tentatively set to go into effect in 1997. We may be faced with two sets of standards at some point — California and the EPA. How the two mesh together still needs to be worked out."

Standards or no, the big thing for today's lawn maintenance manager is keeping his equipment running, with as few engine problems as possible.

"You may need to adjust the valves," Hicks said. "But, if you really take proper care of it, an air-cooled engine should last 2,000 hours before needing major work."

"The key again for getting maximum life out of any engine is using it properly for the right application and giving it proper maintenance."

How long can you expect engines to last? In large part, the answer depends on you. ■

The author is a free-lance writer based in Lincoln, Neb.

UNDERSTANDING ENGINE OILS

SELECTING AN ENGINE oil can be confusing.

Every engine oil on the market is a mixture of a base oil and numerous additives. The base oil can be mineral oil, refined from petroleum crude oil or synthetic oil produced chemically. While the large number of additives make it difficult to classify them, remember that all quality engine oils have an additive package to enhance performance quality.

Consult your owner/operator manual to find the recommended oil for your engine. The manual will specify both SAE viscosity numbers and API service classifications.

The Society of Automotive Engineers (SAE) established a scale which indicates oil thickness (viscosity). SAE numbers include, for example, 10W-30, 5W-10 and sometimes just a single number such as 5W or 40. The "W" next to a number means the oil thickness was measured at extremely cold temperatures, as low as -35 degrees F, when the oil is thickest. A number without a W suffix indicates the oil thickness was measured when the oil was hot (210 degrees).

A couple of numbers separated by a hyphen indicate a multi-viscosity oil. These oils are tested at both hot and cold temperatures and are recommended for all-season use. Equipment manuals specify which oil viscosity to use under specific weather conditions.

The American Petroleum Institute (API) classified oils based on their overall quality, and are labeled using letters of the alphabet. If a particular oil performs well it gets a high quality rating such as an F or G. New quality ratings are assigned as better classes of oils are developed and tested. Generally, the new higher quality oils can be used where lower ratings were specified for older engines.

In addition to the basic quality rating, API recognizes two engine service groups: S series and C series. The S stands for spark ignition-engines fueled by gasoline, alcohol, natural gas or propane. The C stands for compression ignition-diesel fueled engines. The S and C are combined with the quality rating to give service classifications such as SA or CD. — David Ross, Extension Agricultural Engineer, University of Maryland, College Park, Md.



IRRIGATION
TRAINING SERIES

PRESSURE, THE UNSEEN MENACE

Improper water pressure, resulting in the loss of precious water supplies, is the number one problem facing the industry today.

By Larry Keesen

RECENTLY, I WAS evaluating an irrigation system and, as I expected, the system had pressure problems. This is typical of most existing systems because many designers and contractors either do not understand the importance of pressure control or they don't care.

The irrigation system we were evaluating had a static pressure of 62 PSI on the building silcock, and an operating pressure of up to 72 PSI at the nozzles of the pop-up spray heads and small impact rotors. I knew at this point that the building was protected by pressure reducing valves (PRV), so I went into the mechanical room and checked the pressure upstream of the PRV's and found the pressure was 113 PSI at the point of connection for the irrigation system.

NEEDLESS TO SAY, the rotors ran like "machine guns" creating a bank of mist that drifted away from the area it was intended for, while greatly reducing the longevity of the head. The pop-up spray heads misted and shrieked from the high velocity of flow, and some leaks were apparent around the heads and wiper seals.

For example, one impact rotor head zone was twice as large as the rest, and water pressure in the system was low at 30 to 35 PSI.

Improper operating (dynamic) water pressure is the most common and often unnoticed problem with landscape irrigation systems. Water pressure at the sprinkler head is either too high or too low. Both high and low water pressure situations cause a distortion of the spray pattern resulting in poor uniformity of coverage.

SCATTERING WATER. When water exits the nozzle of the irrigation head it explodes into droplets of water. Low operating pressure causes the water to explode into larger droplets which produces soil compaction and also reduces the effective radius of coverage. High pressure causes the water to explode out of the nozzle into a higher number of very tiny droplets that range in size from 1.0 millimeters (moderate rain) to 0.10 mm (mist).

A 1.00 mm drop falling from 10 feet in a 3 mph wind will drift 5 feet, and a 0.10 mm drop will drift 50 feet. This reduces the effective radius of coverage and causes the water to appear as a drifting mist. This mist or group of small droplets



will evaporate much faster than larger droplets, and will easily drift away from the irrigated area.

Imagine the water wasted by drift in a 5- or 10-mile-per-hour-wind. If the irrigation system is operated with improper pressure, waste results.

The Soil Conservation Service of the U.S. Department of Agriculture has tested sprinklers and published a recommended operating pressure range for various sprinkler flow rates. (See chart on page 42)

WIND DRIFT		
DISTANCE DRIFTED DURING A FALL FROM 10 FEET IN A 3 mph WIND		
DROP DIA. (mm)	TYPE OF DROP	DISTANCE DRIFTED
1.0	Moderate rain	5'
0.5	Light rain	8'
0.3	Drizzle	13'
0.2	Drizzle	17'
0.1	Mist	50'

Source: Delavan, 1982

For more information on droplet size, wind drift and the sail index, contact the Center for Irrigation Technology, California State University, Fresno, CA 93740-0018.

PRESSURE POINTS.

Ideal operating pressure (and therefore adequate droplet size to meet the needs of plant materials) for small pop-up spray heads is 20 to 30 PSI. A pressure of 30 to 50 PSI is suggested for most rotor head applications.

Pressure problems are sometimes hard to identify visually when pressures are only moderately high, say 30 percent to 60 percent higher than the manufacturers' recommended operating pressure. Some or all of the fol-

A PSI reading can be taken with a Pitot tube (left), but make sure it's placed about 1/4-inch away from the face of the nozzle.

Photo: Larry Keesen

lowing symptoms may be apparent when pressure problems exist:

HIGH PRESSURE	LOW PRESSURE
✓ Reduced radius of coverage	✓ Reduced radius of coverage
✓ Floating fine mist	✓ Large water droplets
✓ Dry areas between head patterns	✓ Doughnut shaped coverage
✓ Fast rotor rotation speed	✓ Slow rotor rotation speed
✓ Rotor rotation failure	✓ Rotor rotation failure
✓ Leakage at the head	✓ Head failure to set and seal

A word of caution: Misting can occur when heads are operating at the proper pressure if heads are tilted or too low, and the turf interferes with the spray pattern and breaks it up into smaller droplets.

If you want to verify the operating pressure at the head, you can install a tee with a pressure gauge under the nozzle of a pop-up spray head, turn on the zone and read the operating pressure. With rotor heads, insert a Pitot tube (with a pressure gauge attached) into the stream of water that exits from the nozzle.

Don't insert the Pitot tube into the nozzle as this will result in a false reading. Keep the Pitot tube about 1/4-inch away from the face of the nozzle. Another way to check rotor head pressure is to install a temporary tee with a pressure gauge under the rotor head.

A 5/32 nozzle operating at 30 PSI will have a flow rate of 4.0 GPM. If the pressure is increased to 50 PSI the flow will be 5.2 GPM, and at 70 PSI it will be 6.0 GPM. As

A PSI gauge showing a 45 PSI. The higher the pressure the greater the flow from the nozzle. Photo: Larry Keesen



you can see, the higher the pressure the greater the flow will be from the nozzle.

High water pressure can also cause surges in lateral lines, especially if the lateral is drained or partially drained after every cycle. This results in damage to the equipment, water leaks and a reduced system life-span. Install heads with check valves to prevent low head drainage and save water at the same time.

Once the pressure is measured and the prob-

lem is identified how do you make corrections? For high pressure, pressure reducing valves should be installed throughout the system to provide for optimum pressure. Replacement of all pop-up spray heads with new 4-inch pop-ups designed with an individual pressure reducing device (set for 30 PSI), and installed as an integral part of the pop-up head would solve the pressure control problem for pop-up spray heads. Pressure reducing valves could be installed in the system with the automatic control valve to control pressure for the rotor head zones.

Separate plastic pre-set PRV's can also

be installed under the rotor head zone. In the near future we will see rotor heads with built-in pressure reducing valves. Whenever the static pressure in a system is more than 70 PSI, I like to install an adjustable PRV at the point-of-connection to protect the system from unnecessary water surges.

If the water pressure is low, try reducing the nozzle size (smaller nozzle/lower flow) if spacing is 50 percent to 55 percent of the original designed radius. Another method of correcting low pressure is to split the zone and add another electric control valve. If everything else fails, a booster pump should be considered. (Some water agencies will not allow booster pumps for irrigation from potable water supplies).

Low water pressure at the head can also be caused by a restriction or blockage in the system if there is a large variation between the static pressure and the operating pressure. Check the main shut-off valve, isolation valves and flow controls on the electric valves for restrictions. Check valves in the mainline or backflow preventer can also fail and cause severe restrictions.

PROBING. Several years ago, we designed a streetscape irrigation system for a small residential development. After the system was installed, the contractor called and complained that the system wasn't working properly. I went to the site first thing the next morning and operated the system, but I could see the system was marginal.

This site had approximately 50 feet of elevation change from the entry down to the bottom of the cul-de-sac. I checked the static pressure at the bottom and it was 20 PSI. I took another pressure reading part way up the hill and it was 15

PSI. When I saw these pressure readings all sorts of thoughts were racing through my mind: Did we miscalculate something? Was this system ever going to function properly?

The next thing I did was check the pressure on the home across the street (a home not part of this development), and the pressure was 80 PSI. Now I felt that there was a restriction in the system and proceeded to check every valve with the contractor, but they were all wide open. So I decided to talk to a few homeowners to find out if they were having similar pressure problems.

They said the pressure was OK in the morning, but was so low in the evening that they could not use the shower. Then it occurred to me that this subdivision

USDA			
SPRINKLER FLOW GPM	RECOMMENDED PRESSURE RANGE PSI		WETTED DIA. (no wind)
2	20	25	75'
4	30	35	79'
6	35	40	88'
8	35	40	96'
10	40	45	100'
15	40	45	117'
20	45	50	123'
30	50	55	134'
50	60	70	175'
100	70	90	210'

had a new water main that extended into the site, and that the isolation valve on the water main was barely open. Overnight the pressure built up in the city water main and allowed for higher pressure. I called the water department which in turn found that the valve was barely open. The situation was soon corrected.

As you can see, a lot of water can be wasted if the pressure is not correct. Are the systems that you design, install and/or maintain operating at the proper pressure? Correct irrigation system operating pressure and the control of this is a must for designers and contractors who want to provide their clients with an efficient,

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The next article will deal with how we can "fine tune" the irrigation schedule and apply less water, how to perform catch can tests and how system uniformity affects application rates. ■

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

COMING NEXT MONTH

In the October issue of Lawn & Landscape Maintenance magazine, we'll discuss what landscape firms are paying their employees as well as what kinds of perks and benefits are being offered. We'll also bring you a look at the increasing popularity of the Hispanic work force.

In addition, the October issue will contain our fourth irrigation training lesson, focusing on systems management and water audits, a glimpse at look-alike pests and an overview of the relationship between landscape contractors and the irrigation field.



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USE READER SERVICE #57

IRRIGATION QUESTIONS

1. How far will mist drift in a 3 mph wind from a height of 10 feet?
2. What is the optimum operating pressure for a large rotor head with a flow rate of 15.0 GPM and a triangular spacing of 55 feet?
3. What is the best operating pressure for pop-up spray heads?
4. Visually, what do high pressure droplets appear as in a large group?
5. How is the operating pressure obtained for rotor heads?
6. Will the nozzle flow increase if the water pressure is raised from 30 PSI to 60 PSI?

Answers appear on page 52 of September LLM.

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USE READER SERVICE #59

Trees & Ornamentals

HELPING TREES SURVIVE IN THE URBAN ENVIRONMENT

TREES ARE MAJESTIC plants, meant to grow tall, spread wide and live long. Trees contribute greatly to the urban setting. Their natural beauty enhances the city's harsh combination of glass, metal and concrete. They supply islands of cooling shade and give off needed oxygen, enhancing environmental conditions.

But the average urban tree has a life span of only seven years. What a waste of plant material, labor, resources and funds.

A combination of factors contribute to the early death of urban trees. Identifying these hazards and working to eliminate them is just part of the battle for longer survival. The other part is selecting the right tree for the chosen spot.

Technical tree care issues come into play, from the planning stage through the planting and maintenance of urban trees.

Many urban trees must fit into already overcrowded situations in heavily populated cities. Planning for islands of green rather than isolated trees, allowing adequate space for tree development and



Urban trees should be pruned to allow for ease of passage. Photo: Steve Trusty

making provisions for irrigation and controlled drainage can reduce plant stress.

Take the light factor into consideration.

Will existing or planned buildings block light access? Will extensive strips of concrete and building surfaces reflect additional light and buildup of unacceptable heat levels?

Watch for winds channeled along streets and through openings between buildings that can desiccate trees by sapping more moisture from the foliage than the roots can replace.

Use planting techniques that will help trees live longer. Where possible, eliminate subgrade compaction that may act as a barrier to root growth. Clean up soil debris such as leftover building materials, rocks and crushed pavement. Test soil for nutrients and pH, and compensate for deficiencies as needed.

If soil quality is poor, mix soil amendments into the existing subsoil to provide a gradual transition for root growth into the surrounding natural soil. Placing different types of soils in layers, or as a "block" within the planting hole, will

(continued on page 46)

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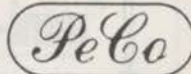
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Trees

(continued from page 44)

restrict root development and water penetration.

Use barriers, ground cover plants or mulches to help shield the soil around urban trees from additional compaction from foot or bicycle traffic. These deterrents may also ward off dog damage and help cut down on damage caused by improper motor vehicle parking or "creative" driving.

A major hazard affecting tree growth in colder climates is salt buildup from deicing materials. High levels of salt cut down on the soil's ability to hold water, thus limiting the water supply to plant roots. Salts absorbed through the roots may reach toxic levels, resulting in leaf "scorch" symptoms similar to those seen in some potted plants. Channel runoff away from planted areas whenever possible. Salts that have collected in the soil may be washed beyond the root zone with deep watering.

Deicing salts, mixed with melted snow, may be sprayed on evergreen foliage by passing traffic. Apply antidesiccants to protect against the excessive drying this can cause.

Watch watering closely. Because of the additional exposure to wind, heat and other stresses, urban trees may need more frequent deep waterings than similar-sized plants in a traditional landscape setting. Beware of overwatering which can force needed oxygen from the soil. Avoid the use of "gray water" that might contain harmful substances.

Plan a fertilizer program according to soil test results. If fertilizer is needed, make the first application in the early spring, just before active growth begins. Make a second application in midsummer to avoid forcing late-season growth.

Damage from air pollution will vary with the tree's location, the size of the city and local weather conditions. Good cultural practices will increase plant health, making trees less susceptible to the effects of pollution.

Destructive vandalism will also vary with the plant's location. Community education programs that stress the value of trees to the city ecosystem will help. "Adopt a Tree" programs have also proven beneficial.

Keep trees in top condition. Trim away dead and damaged branches. Prune trees to allow for easy passage of pedestrian

and vehicle traffic. Monitor plants closely for signs of insect and disease problems. Use the proper products as necessary to control destructive conditions.

Cultural diversity — using a number of different trees rather than one variety — will guard against devastation of an area's plantings by insects or diseases. Choosing the trees best adapted to the site increases favorable odds in the battle for survival. The search for suitable trees to fit tough urban conditions has expanded greatly.

A resource to help your efforts in urban tree planting is the *Urban and Community Forestry Program National Resources Directory*. For information on the directory, contact the National Tree Trust, 1455 Pennsylvania Ave. NW, Suite 250, Washington, DC 20004; or call 202/628-8733.

In addition, the Center for Development of Hardy Landscape Plants, a coordinated effort involving 50 institutions, can be used as a resource. For information, contact Dr. Harold Pellett, coordinator, Center for Development of Hardy Landscape Plants, P.O. Box 39, Chanhassen, MN 55317. — *Steve and Suz Trusty* ■

The authors are partners in Trusty & Associates, Council Bluffs, Iowa.

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THE ACTIVITY OF soil organisms is extremely critical to the development of productive soils and healthy plants.

Soil organism activity is largely dependent upon the presence of a sufficient amount of organic matter in the soil, with the organic matter either naturally occurring (as in most forest soils) or added as an amendment or topdressing in the form of composts, peat or manures.

Soil organisms, having no chlorophyll for their own production of food, depend upon soil organic matter for energy and carbon to sustain themselves. Organic matter is decomposed as the soil organisms flourish.

TYPES OF ORGANISMS. Soil organisms can be divided into two broad categories, microorganisms (cannot be seen) and macroorganisms (can be seen by the eye). Both categories of organisms play a critical role in soil and plant health.

Soil *microorganisms* are varied and are generally present in tremendous quantities

COMMON SOIL MICROORGANISMS

ORGANISM	NUMBER IN ONE POUND OF SOIL	POUNDS OF ORGANISMS PER 1,000 SQ. FT.
BACTERIA	910 Billion	12
PROTOZOA	620 Billion	8
ACTINOMYCES	20 Billion	17
FUNGI	450 Billion	35

Table 1.

(Table 1) in soils with sufficient organic matter. The most important microorganisms, from smallest to largest, include:

- **bacteria** — single cell, found in greatest abundance, largest impact on soil organic matter decomposition

- **protozoa** — amoeba-like, single cell but more organized than bacteria
- **actinomycetes** — resemble molds, filamentous, provide soil with an "earthy" smell
- **fungi** — filamentous mycelium, often

From snow country. . .

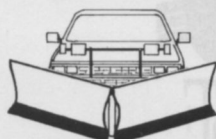
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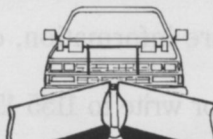
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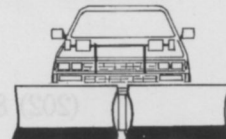
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visible, consist of molds, yeasts and mushroom fungi

• **nematodes** — small, wormlike organisms; a few species are parasitic to plants and can cause severe plant damage

These microorganisms all play an important role in organic matter decomposition. As soil amendments and topdressings, some organic matter sources such as composts and manures are rich in these microorganisms. When added to the soil they are capable of significantly increasing soil biological activity.

Many peat sources, on the other hand, while highly organic, will not carry an abundance of microorganisms since they can be highly decomposed and may no longer act as a substrate for biological activity.

Soil macroorganisms also are abundant in soils containing sufficient organic matter, and they also play a vital role in the productivity and health of the soil. These organisms include a wide variety of insects (ants, millipedes, mites, beetles, slugs, snails, centipedes, spiders) and earthworms.

Earthworms are often found in soils at up to 1 million per acre. Just as with microorganisms, macroorganism soil activity can be increased dramatically

through the addition of organic matter to soils.

BIOLOGICAL INITIATIVES. Ensuring adequate soil biological activity through the regular addition of organic matter sources rich in microorganisms, and capable of sustaining their continued growth has many benefits to plant growth. For example:

• Microbial decomposition of organic matter plays a critical role in improving soil productivity and plant growth. Not only does decomposition provide for a slowly available source of nutrients for growth, but soil structure also is improved as the decomposition process produces materials which help to bind individual soil particles together into soil aggregates. Subsequently, soil aeration and drainage are improved, and soil compaction is reduced.

• Microbial decomposition also leads to humus formation. Think of humus as the stable end product of organic matter decomposition. As we'll see in future articles, humus plays a major role in soil structure and also the availability of certain plant nutrients. It can actually promote root activity and plant growth directly.

nutrients are released and become available for plant growth. For each 100 pounds of dead microorganisms, 10 pounds of nitrogen, 5 pounds of P_2O_5 and 2 pounds of K_2O are released. If you compare these figures to the data in Table 1 showing the number of pounds of microorganisms which can live in 1,000 square feet of soil, it can be seen that such nutrient release from dead microorganisms can be a major factor in plant nutrition in soils rich in organic matter.

• Specific fungi in close association with plant roots play a critical role in helping roots extract nutrients from soils. This association is called mycorrhizae. Nutrient availability on low fertility soils, especially where phosphorous is limited, is greatly enhanced when these mycorrhizal fungi are present.

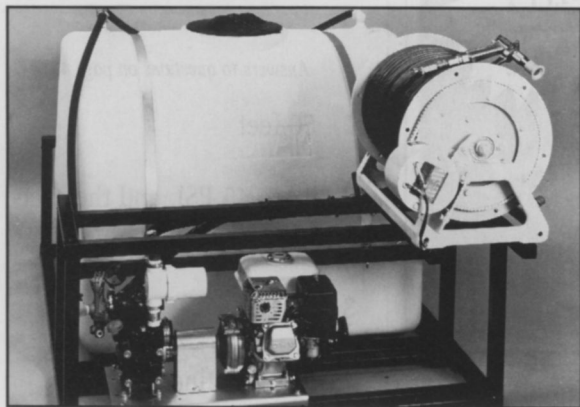
• Sufficient levels of organic matter also encourage the growth and development of earthworms. A high earthworm population affects soil productivity in two ways. First, their tunneling activity improves a soil's water infiltration and aeration, and helps to alleviate compaction.

Second, as earthworms pass soil and organic matter through their digestive

(continued on page 58)

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People

SEVERAL CHANGES and additions have been made in upper management at Ariens. **Michael Ariens** moved from president to chairman of the board; and **David Vander Zanden** and **Jurgen Buller** joined the firm as president and vice president, sales and marketing, respectively. Buller replaces **Charles Berry**, who is retiring after 23 years with Ariens.

Paul Pesci was named director of sales and distribution for the professional lawn care division of Ransomes America Corp.

Jacobsen Textron named **Wayne Whitehead** director of product management. Whitehead previously served as the company's commercial products manager.

The company also promoted **Robert Krick** to product planning manager. He most recently served as international product manager.

Sam Noffsinger and **Dan Simler** were named district managers for the contractor division of Rain Bird Sales. Noffsinger is responsible for product sales and support in Oklahoma, eastern Texas, Dallas and Fort Worth. Simler is responsible for product sales and support in North Carolina;

South Carolina; Virginia; West Virginia; Washington, D.C.; Delaware; and Maryland. Noffsinger and Simler also assist distributors with marketing, sales, service, contractor development and training.

Also at Rain Bird, **Doug Parker** was appointed product coordinator for the contractor division. He assists in new product development for the valve and controller product lines.

Scott Glahn joined The Toro Co.'s irrigation division as district sales and service manager for the North Central district. Prior to the position, he was the landscape architect/project manager and estimator for Total Terrain in Pueblo, Colo.

Mary Anne Hartman was named technical sales representative for Whitmire Research Laboratories.

Stephen Abernethy joined Hardie Irrigation as district sales manager for the southern United States turf region. He is based out of Durham, N.C.

Todd Mohr was appointed area specifications manager for the commercial and contractor divisions of Rain Bird Sales. His Southern California territory includes



Whitehead



Hartman

San Diego, Imperial and southern Riverside counties.

Kalo Inc. introduced **Mike Jones** of M & R Specialty Sales Co. as sales representative in Alabama, Florida, Georgia, Mississippi, North Carolina, South Carolina and Tennessee.

Weather-matic appointed **Ray Dueweke** as regional sales manager for the Great Lakes region, including Michigan, Wisconsin, Indiana, Ohio, Illinois, Kentucky and eastern Missouri.

Thomas Savage was appointed general counsel of Briggs & Stratton Corp. He was formerly vice president — general counsel and secretary for Sta-Rite Industries. ■

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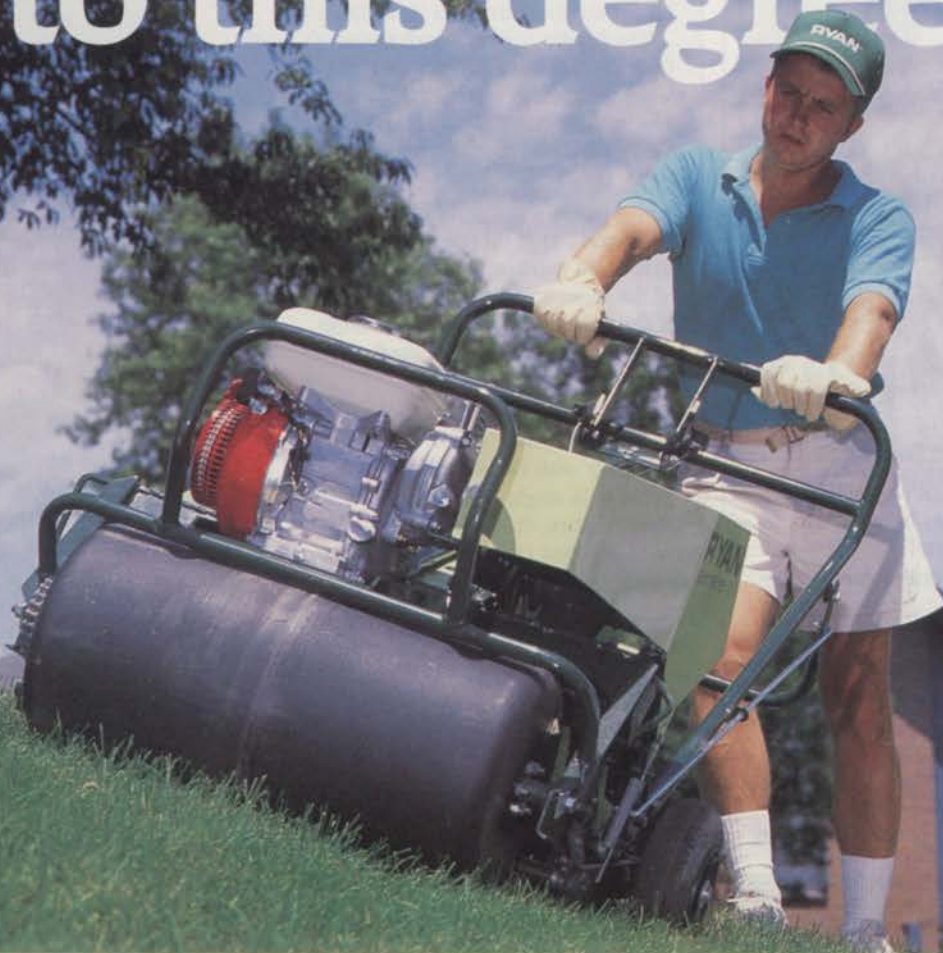
IRRIGATION TRAINING SERIES LESSON THREE

Answers to questions on page 43.

1. 50 feet
2. 40 to 45 PSI, and the spacing has no affect on this.
3. 30 PSI
4. Floating fine mist.
5. A Pitot tube and pressure gauge.
6. Yes, it increases proportionately to pressure increases.

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Products

V & B Manufacturing Co. added three light-weight, long-handle tools to its Ground-breakers line of landscaping products.

Available are 12 combinations of tools in a wide range of sizes, weights and lengths.

Tools include a tiller, axe, pick, combination trencher-cultivator, planter-axes

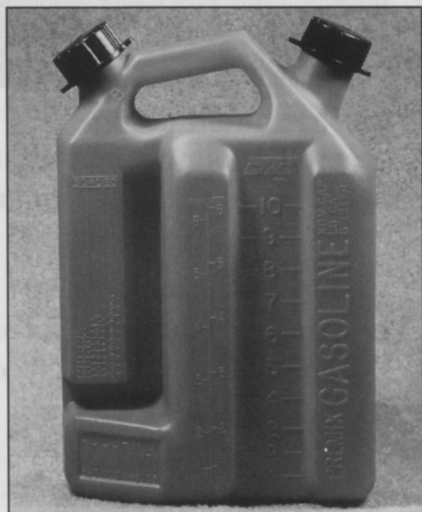


and chisel picks, as well as planters and trenchers. Some models have curved handles for added control.

Circle 126 on reader service card

Accu-Products offers a line of products designed to facilitate mixing and pouring. The Accu-Mix™ container provides 10 pre-mix quantities and 8 mixing ratios, and is suitable for transporting gasoline. Heavy buttress gas caps and O-ring assure a leak-proof seal.

Milliliters and liters, ounces and quarts



are added for lubricants, gas additives, horticulture products and other concentrates. Nominal capacity is 1.7 gallons or 6.4 liters.

Product Spotlight

JACOBSEN'S IS NOW offering its turf rake with carbon steel rake blades to remove thatch and allow air, water and nutrients to reach the soil. A 5-position lever adjusts the blades to proper raking height.

It has a 5-h.p. engine and its self-sharpening blades are mounted on a reversible shaft.

The handle adjusts to suit the user's height. Operator presence control stops the rake when the handle is released. In addition, the handle collapses for transport.

Circle 125 on reader service card



The Accu-Flo™ oil pour spout fits all brands of oil containers and eliminates the need for funnels. Two tip sizes are available for large and small filler openings.

Circle 127 on reader service card

John Deere introduced the Gator utility vehicles. The 10-h.p. Gator 4X2 rolls on four wheels with two-wheel drive. It's powered by a single-cylinder air-cooled engine. A 10-cu.-ft. cargo box hauls 500 pounds. Payload capacity with operator and passenger is 900 pounds.



The 18-h.p. Gator 6X4 rolls on six wheels with 4-wheel drive and is powered by a twin-cylinder liquid-cooled engine. An 11-cu.-ft. cargo box hauls 800 pounds, with total payload capacity of 1,200 pounds.

Both feature low center of gravity and wide-stance front end for stability.

Circle 128 on reader service card

A biodegradable compost bin is available at a volume discount to landscapers. The Groundskeeper cylindrical bin from **The Delvin & Taylor Co.** measures 3 feet by 3 feet and holds 150 gallons — approximately five commercial lawn-refuse bags of yard waste — at one time. The composting process begins immediately.

One bin composts up to three quarters of a ton of organic waste. After a season's use, the bin is torn into pieces and placed



into a new bin where it decomposes in weeks.

Circle 129 on reader service card

THE **STEINER** Model 220 2 X 4 turf unit provides a low center of gravity for a turf-hugging machine. A single foot pedal controls the hydrostatic drive train. Constant traction is maximized through finger-tip selection of the hydraulic weight transfer traction booster.

Individual wheel brakes assist in tight turns and a differential lock provides even traction when mowing in wet conditions, along hillsides or other difficult terrain.

Attachments are available.

Circle 130 on reader service card

New from **Illustrious Products and Services** is Easy Trim, a mower attachment that allows the operator to trim around hedges, trees, flower beds and other areas while operating a riding mower.

Easy Trim is not a trimmer — it holds a trimmer in place during mower operation.

Circle 131 on reader service card ■

Calendar

SEPT. 24-28 Oregon Association of Nurserymen, Annual Convention, Shilo Inn, Lincoln City. Contact: OAN, 2780 S.E. Harrison, Suite 102, Milwaukie, OR 97222; 503/653-8733.

OCT. 7-9 Interstate Professional Applicators Association Convention and Trade Show, Sheraton Hotel, Tacoma, Wash. Contact: IP-PA, P.O. Box 1377, Milton, WA 98354.

OCT. 15 Plant Nutrition/Fertilizer Management, sponsored by the University of Florida Cooperative Extension Service, Sanford, Fla. Contact: Uday K. Yadav, 407/323-2500 ext. 5559.

OCT. 22-23 Xeriscape '92 — San Diego Style, Annual Xeriscape Conference, co-sponsored by Cuyamaca College Botanical Society and the San Diego County Water Authority, San Diego Convention Center. Contact: Jan Tubiolo, Cuyamaca College Botanical Society, 2950 Jamacha Road, El Cajon, CA 92019-4304; 619/443-1756.

OCT. 19-20 1992 Pacific Horticultural Trade Show, Los Angeles Convention Center. Contact: Trade Show Manager, 4620 Northgate

Blvd., Suite 155, Sacramento, CA 95834; 916/567-1133.

OCT. 23-25 New Jersey Tree Expo, sponsored by the Arborists Association of New Jersey, Sheraton Poste Inn, Cherry Hill, N.J. Contact: Bill Porter, P.O. Box 231, Cook College, New Brunswick, NJ 08903; 908/246-3210.

NOV. 1-2 Southwest Outdoor Power Equipment Show, sponsored by The Service Dealers Association, Arlington Convention Center, Arlington, Texas. Contact: TSDA, 1946 S. IH-35, Suite 100-A, Austin, TX 78704-3693; 512/443-7999.

NOV. 1-4 The Irrigation Association's International Irrigation Exposition & Technical Conference, New Orleans Convention Center. Contact: IA, 1911 North Fort Myer Dr., Suite 1009, Arlington, VA 22209-1630; 703/524-1200.

NOV. 8-11 22nd Annual Educational Conference and Show of the National Institute on Park and Grounds Management, Richmond, Va. Contact: National Institute, P.O. Box 1936, Appleton, WI 54913; 414/733-2301.

NOV. 10 Human Relations and Business Management, sponsored by the University of Florida Cooperative Extension Service, Sanford, Fla. Contact: Uday K. Yadav, 407/323-2500 ext. 5559.

NOV. 11-13 Solid Waste Composting Council, Third Annual Conference, Vista Hotel, Washington, D.C. Contact: SWCC, 114 South Pitt St., Alexandria, VA 22314; 703/739-2401.

NOV. 16-18 Green Industry Exposition, Indiana Convention Center, Indianapolis. Contact: GIE, 1000 Johnson Ferry Road, NE, Suite C-135, Marietta, GA 30068-2112; 404/973-2019.

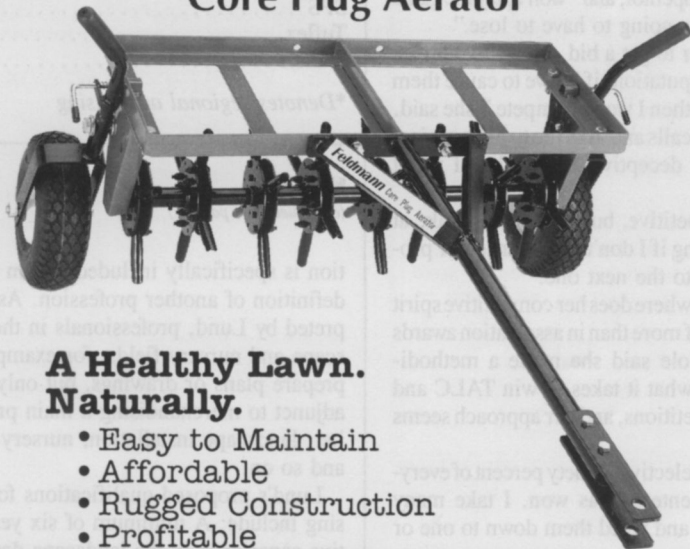
NOV. 19-21 TCI Expo '92, sponsored by the National Arborist Association and The International Society of Arboriculture, Baltimore Convention Center. Contact: TCI Expo, P.O. Box 1094, Amherst, NH 03031; 800/733-2622.

DEC. 2-4 39th Rocky Mountain Turf Conference and Trade Show, Currihan Hall, Denver. Contact: Rocky Mountain Regional Turfgrass Association, P.O. Box 29, Franktown, CO 80116; 303/688-3440. ■

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Texas

(continued from page 24)

way, we know there's been a preselection process," Cole said.

"A lot of companies that were bidding during the boom days bid themselves out of business. We're here to stay. We're not making any more profit than anyone else; we're just watching our numbers very closely."

To do so, the company keeps a tight hold on its financial statements. Monthly records are sent to a CPA, and monthly man-hours gross (gross income) and per man hour expense are tracked internally. That way, the company knows its net income on a monthly basis per man-hour, Cole explained.

"It makes sure we're bidding correctly," she said.

Offering additional services is another tack that Greater Texas Landscapes has taken to stay on top of the sagging economy. In addition to mowing, edging, pruning, chemical applications and color bed changeouts, the company added interior and irrigation services.

"We started doing our own irrigation service work and are able to service our clients much better. The same with interiors — we're not doing it because it's a great profit center, we're doing it because we're able to provide clients with a great service."

Cole estimates that 40 percent of clients subscribe to the irrigation service, which entails monthly system checks and service when something goes wrong. The company does not provide installation.

PLAY IT FAIR. With clients and competitors alike, Cole likes to play fair. She calls herself an ethical competitor, and "won't play the game if someone is going to have to lose."

"If in order to get a bid, I have to damage someone's reputation, if I have to cause them to be a loser, then I won't compete," she said. "If someone calls and asks me to bid a project and they are deceptive to me, then I won't participate."

"I'm competitive, but I don't lay awake at night worrying if I don't get a particular project. I go onto the next one."

Perhaps nowhere does her competitive spirit manifest itself more than in association awards programs. Cole said she made a methodical study of what it takes to win TALC and ALCA competitions, and her approach seems to work.

"I'm very selective. Ninety percent of everything we've entered has won. I take many photographs and weed them down to one or two entries."

As to why Cole places so much stock in association awards programs, Cole explained that winning boosts employee morale. "The people here take a lot of pride in their projects. They're crushed if they don't win." ■

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

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*Denotes regional advertising

News

(continued from page 12)

tion is specifically included within the definition of another profession. As interpreted by Lund, professionals in the landscape and nursery fields, for example, can prepare plans or drawings, but only as an adjunct to merchandising a main product, i.e., landscape installation, nursery stock and so on.

Lund's proposed qualifications for licensing include: A minimum of six years active experience in the landscape design/installation profession; supervised testing by the department of Professional Regulation and the Board of Landscape Architecture; become association members of the American Society of Landscape Architects and members of the state organization.

The designers said they are not seeking the right to plan irrigation designs. ■

Classifieds

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All classified advertising is 75 cents per word. For box numbers, add \$1 plus six words. All classified ads must be received by the publisher before the first of the month preceding publication and be accompanied by cash or money order covering full payment. Submit ads to: Lawn & Landscape Maintenance magazine, 4012 Bridge Ave., Cleveland, OH 44113. Fax: 216/961-0364.

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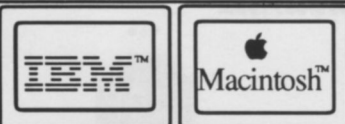
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Compost Corner

(continued from page 51)

system, their enzymes can increase the availability of plant nutrients found in earthworm casts by a factor of several hun-

dred. High earthworm populations, while disruptive on golf course greens and other closely mowed turf, are a sure sign of healthy, high organic matter soils.

•Other macroorganisms such as insects burrow through the soil, aerating and improving soil drainage.

•Thatch, a persistent problem found in far too many lawns, can be minimized through the frequent addition of organic matter high in microorganisms. Thatch development, in large part, is due to nothing more than the rapid accumulation of plant parts resistant to decomposition in the absence of sufficient biological activity. Frequent topdressings with materials high in organic matter and microorganisms can go a long way toward minimizing thatch development.

•Disease incidence on many plants may also be greatly influenced by the level and type of organic matter and microorganisms present in soils. Recent research on turf and a number of greenhouse and nursery plants has demonstrated how certain organic materials, properly processed to encourage specific microorganism populations, can suppress specific plant disease causing organisms.

Many university researchers believe the future of plant disease control lies in the balancing of soil microorganism populations through the addition of specific organic matter sources which are antagonistic to plant diseases.

Soil biological activity, as enhanced by the addition of organic matter which acts as a substrate or food source, plays a vital role in the productivity of soils and the plants growing in them. Turf and landscape managers can help to ensure successful and healthy plant growth, and perhaps minimize disease problems and fungicide use, through the addition of organic matter to soils whenever possible. — Jim Wilkinson

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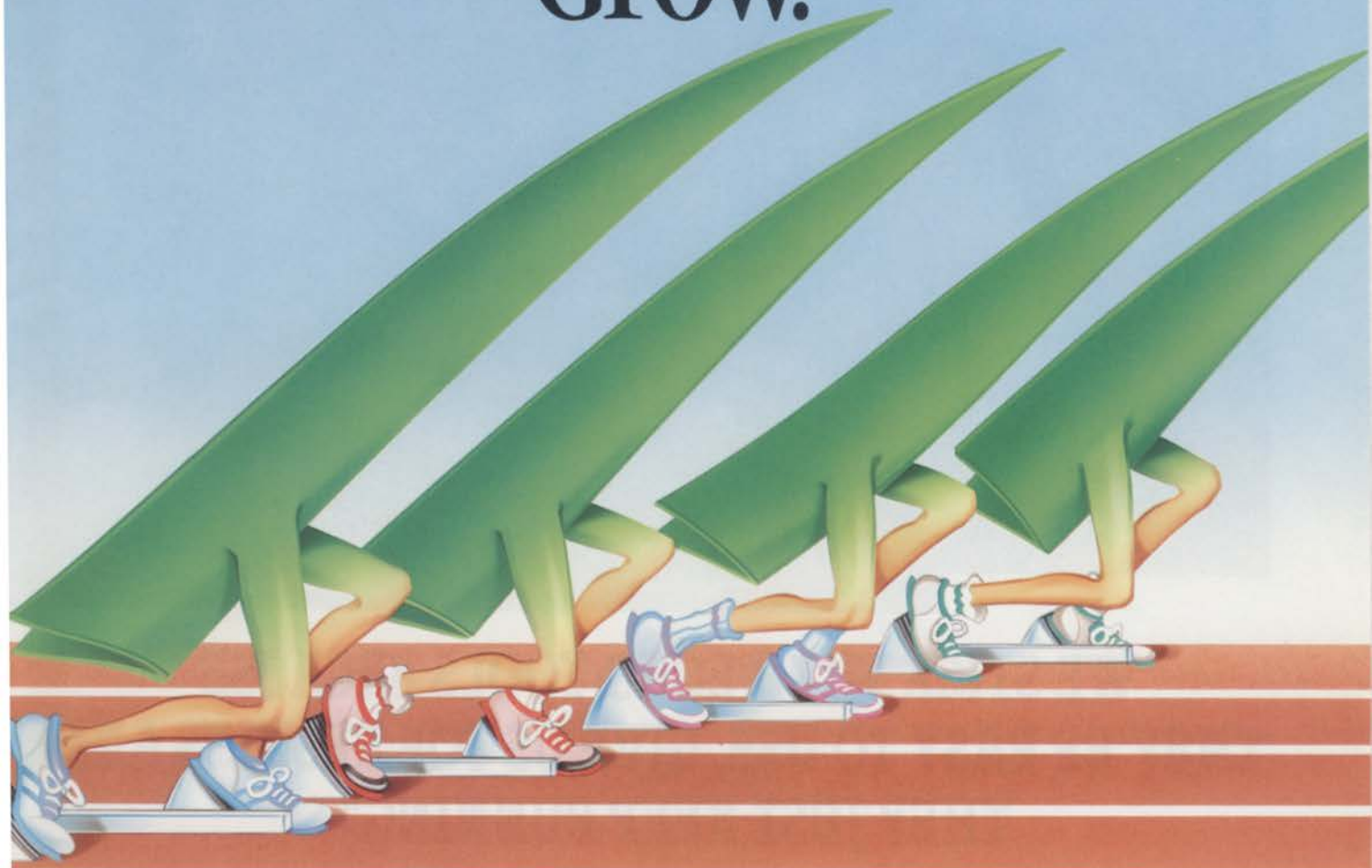


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The author is vice president, research and development and professional sales for Earthgro Inc., Lebanon, Conn.

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