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capabilities to ensure profit
and progress in a
saturated metro market.*

In this issue:

**Seed Harvest
Report**

Storing Pesticides

**Quality Compost
Guidelines**

Snow Removal

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USE READER SERVICE #100

Lawn & Landscape MAINTENANCE

VOLUME 15, NUMBER 9

SEPTEMBER 1994

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Editor's Focus

JUST BEFORE THE first Green Industry Expo took place in Nashville back in 1990, I applauded the organizers of the event for the foresight and strength of character put forth to merge two struggling trade shows into one.

Indeed, the effort was tremendous and today three associations — the Associated Landscape Contractors of America, the Professional Lawn Care Association of America and the Professional Grounds Management Society — are poised to unveil the fifth Green Industry Expo Nov. 14-17 in St. Louis.

At the time of the first show, not only did I dwell on the marvelous undertaking of a bigger and better national landscape show, but I pondered the unending possibilities the alliance could bring.

For instance, what other associations might join the Green Industry Expo? What about the possibility of a complete alliance between one or more of the green industry associations? It made perfect sense then — although I didn't find anybody who would do more than speculate on the subject — and it still does today.

Maybe the idea isn't so far-fetched. Consolidation is taking place at both the supplier and end user levels, why not in other areas? Today, ALCA and the American Association of Nurserymen are considering a "unification." Already, the two groups cooperate in a number of arenas — the largest of which is on legislative issues.

Although no conclusions have been reached, a member task force has been formed to conduct preliminary research. Their charge is to outline the challenges and opportunities involved in combining the two organizations.

The logic behind the move is simple: If the nursery and landscape industry wants to grow in size and profitability, it must invest additional resources in industry promotion, government representation, public relations and research. It's expected the task force will continue through July 1995.

The process of unification is not one to be taken lightly. Both organizations are strong in their own right and represent several thousand small business owners. But I encourage the task force and any member of each of the associations to seriously consider the proposal.

Not only is it innovative and strategically sound, but it's courageous. It takes guts for two organizations to put the future of the members and the industries it serves first to unite for the benefit of all. Landscapers, nursery growers and retail garden centers, among others, will receive the benefit of enhanced government representation and a larger base organization from which to develop educational programs.

I realize this process will take time and I



look forward to the various exchanges. In the end I hope the industry welcomes the marriage of two, strong trade associations.

As is becoming customary, the lawn and landscape industry has had to endure its share of negativism this year on the pages of the consumer press.

Articles on pesticides causing cancer, leaching into the groundwater and generally being overused, along with articles on the hazards of power equipment emissions, hit the presses several times throughout the season.

But nothing this year has shocked me more than a new book by Virginia Scott Jenkins titled, "The Lawn: A History of an American Obsession."

The general message from Jenkins: You have been conned and bullied by skillful manipulators into spending billions of dollars annually plus untold hours and energy to befool the air, endanger the environment and waste precious water.

Jenkins is a cultural historian teaching at Catholic University in Washington, D.C. Viewing the care and management of a landscape as a national obsession, she asks, "What do front lawns tell us about American culture?"

The book is filled with alleged facts and figures among them linkages between several pesticides and long-term health problems.

While I personally don't place stock in her evaluation of the lawn and landscape industry, the review I read said the book is a well-documented expose of the actions of special interests including the lawn care and golf course industries among others.

While the lawn and landscape industry won't get the chance to discuss the issues with every reader of the book, we can take the time to better educate our work force and customers. — *Cindy Code*

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The Ohio Turfgrass Foundation
American Association of Nurserymen
National Landscape Association
The Composting Council

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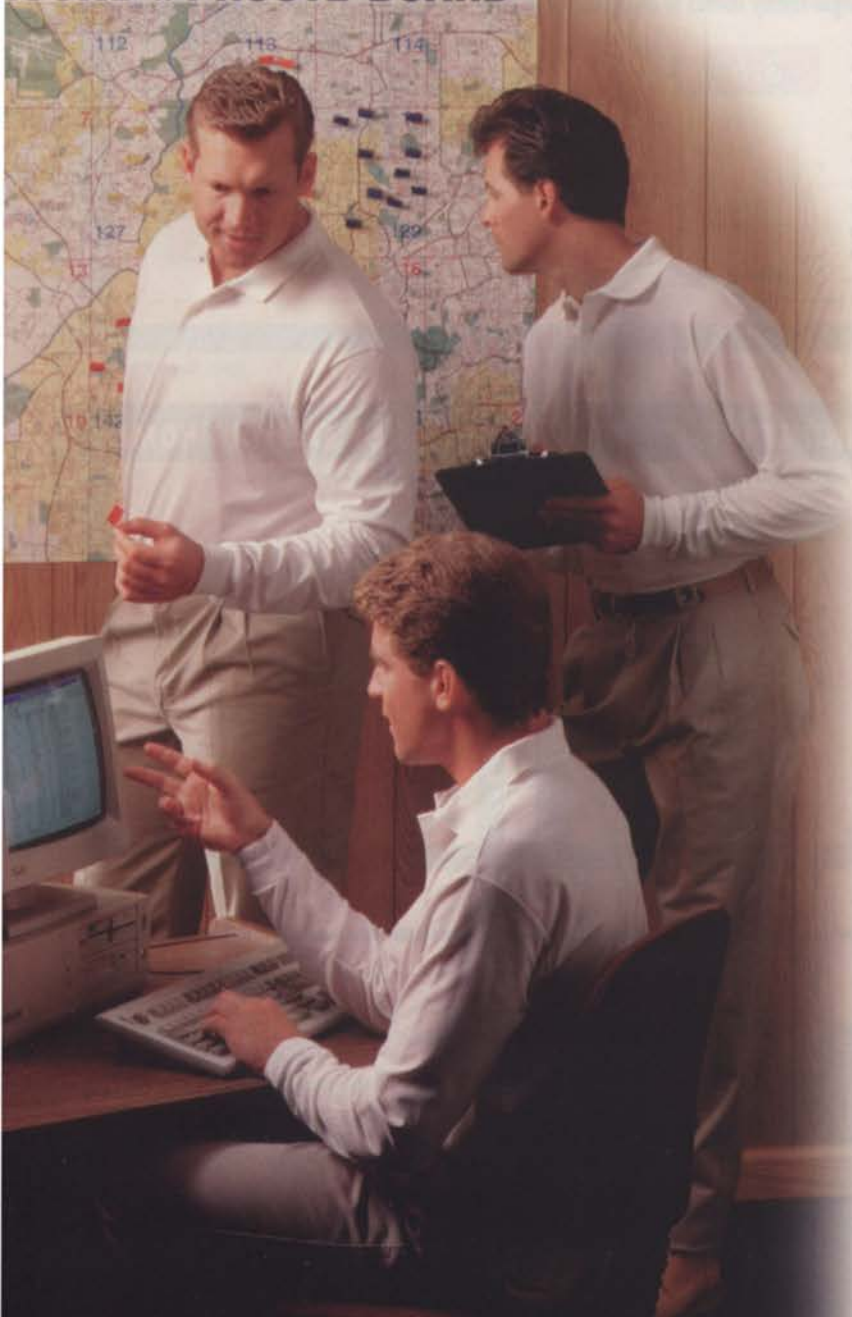
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USE READER SERVICE #61

Business Watch

THE NEWS ON the housing front for June was discouraging for landscape firms looking for potential residential construction jobs. All three key indicators of real estate activity — housing starts, sales of new homes and sales of existing homes — were down. The sharpest drop was in sales of new single-family homes, which took a 14.1 percent dive, providing further evidence that rising interest rates are acting as a heavy brake on growth in the housing market.

New home sales fell 14.1 percent to an annual rate of 591,000 units, from a revised May figure of 688,000, the Commerce Department reported.

"It's a very big drop," David Berson, chief economist with the Federal National Mortgage Association, recently told *The Wall Street Journal*. "The housing market is slowing. There's no question about that."

Economists expected a decline in home sales, but were surprised by the extent of the drop. But because the home sales report is often substantially revised and has a large margin of error — plus or minus nine percentage points — many economists believe the large June decline is overstated, and that the figure will be revised upward.

CONSUMER PRICE INDEX*

APR.	MAY.	JUN.	JUL.
+0.1	+0.1	+0.3	+0.3

SALES OF EXISTING HOMES*

MAR.	APR.	MAY.	JUN.
+6.0	+1.2	-0.7	-3.6

*Percent change from preceding month (seasonally adjusted).

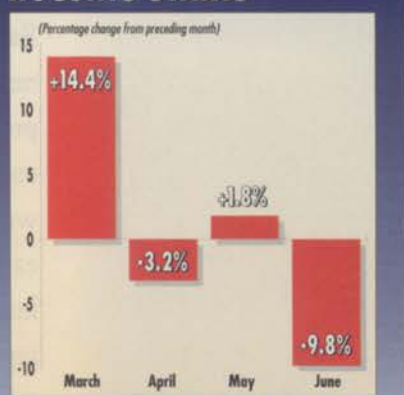
HITTING THE BRAKES

Rising interest rates caused sales of new single-family homes to drop steeply in June.



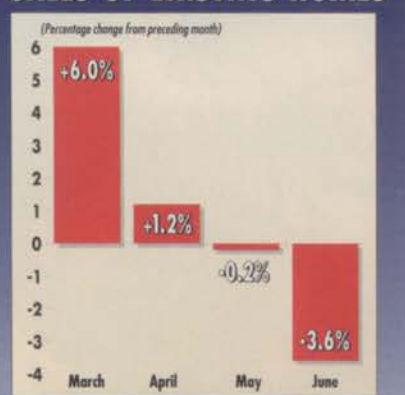
Source: Bureau of the Census

HOUSING STARTS



Source: Bureau of the Census

SALES OF EXISTING HOMES



Source: National Association of Realtors

WEATHER WATCH

WHY SUNSETS ARE RED

The blue sky, white clouds and most of the colors seen in the sky result from light being sent in different directions as it collides with air molecules, other substances or the water and ice of clouds.

1 At sunset and sunrise, sunlight is traveling farther through the atmosphere.

2 The longer trip means more light at the blue end of the spectrum is scattered.

3 This leaves red, yellow, orange light to reach our eyes or reflect off clouds.

Source: American Meteorological Society

The National Weather Service's 60-day outlook calls for at least a 55 percent chance of below normal temperatures from the northern Great Plains and Rocky Mountains to International Falls, Kansas and Missouri.

At least a 55 percent chance of above normal temperatures is forecast for the area extending from east of Alabama to Detroit, as well as most of Texas.

Above median precipitation is forecast for northern Montana and from eastern Nebraska and South Dakota across most of the Great Lakes region to the Northeastern and mid-Atlantic states.

60-DAY OUTLOOK FOR SEPTEMBER AND OCTOBER

Temperature Probability



Precipitation Probability



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USE READER SERVICE #54

Environmental Forum

HUMANS HAVE ENJOYED turf-grasses for more than 10 centuries, but only recently have they documented scientific research on the environmental, recreational and aesthetic benefits of turf. A landmark study, published in the May-June 1994 issue of *Journal of Environmental Quality*, is the work of Dr. James Beard, director of the International Sports Turf Institute, College Station, Texas, and Dr. Robert L. Green, research agronomist, Department of Botany and Plant Sciences, University of California-Riverside.

The study, which took two years to complete, distilled a diverse range of scientific studies into one article. "We read 20 or more papers for every one we used," commented Beard. The researchers then sent it to approximately 30 scientists across the U.S. for review. They then submitted the article to the *Journal*, which provided a peer review of the documentation before approval.

"This study couldn't have been done 15 or 20 years ago," said Beard, because much of the studies are fairly recent. He added, "This may develop into the key pivotal paper in the whole environmental area for turf. Hopefully, it will stimulate others to pursue additional research."

Beard and Green cited 87 sources documenting environmental benefits in the following areas:

- Soil erosion control and dust stabilization
- Groundwater recharge and surface water quality
- Organic chemical decomposition
- Soil improvement and restoration
- Heat dissipation and temperature moderation
- Noise abatement and glare reduction
- Decrease of noxious pests, allergy-related pollens and human disease exposure
- Safety for vehicle operation and extending equipment longevity
- Security for vital installations and lower fire hazard
- Wildlife habitat

An additional section offers scientific support for the recreational and aesthetic benefits such as improved mental health, greater productivity and social harmony.

Beard and Green relied heavily on research to address two issues that have a major impact on the public's perception of turfgrass use: water conservation and groundwater/surface water quality preservation.

They took exception to the statements that turfgrasses are higher water users than trees and shrubs, and pointed out that "There are no published scientific data available to support this allegation. In fact, the limited ex-



perimental data available suggest the opposite position."

Their review of evapotranspiration rate studies led them to comment on the confusion surrounding low-water-use landscape plant lists recommended for xeriscaping. "The lists are based on the incorrect assumption that those plants capable of surviving in arid regions are low water users, when these plants typically are only drought resistant. When these species are placed in an urban landscape with drip or other forms of irrigation, many can become high water users," they noted.

Beard and Green concluded that "there is no valid scientific basis for water conservation strategies or legislation requiring extensive use of trees or shrubs in lieu of turfgrasses. Rather the proper strategy based on good science is the use of appropriate low-water-use turfgrasses, trees and shrubs for moderate-to-low irrigated landscapes and similarly to select appropriate ... drought-resistant turfgrasses, trees and shrubs for non-irrigated landscape areas."

The human factor is the main cause for excessive landscape water use, they maintained. "The waste of water results from improper irrigation practices and poor landscape designs, rather than any one major group of landscape plant materials."

Their study also showed that turfgrass root systems efficiently absorb nutrients and work to filter groundwater. They noted the importance of educating the public that "the darkest green turf, which many people strive for, is in fact not the healthiest turf. A medium green turf with a moderate growth rate will have the deepest root system with less thatching; reduced disease and insect problems; and increased tolerance to environmen-

tal stresses such as heat, drought, cold and wear."

For more information on this landmark study, contact the Turf Resource Center at 800/405-TURF.

ENVIRONMENTAL, aesthetic, and economic benefits of trees will be the topic of discussion during the upcoming "Building With Trees" workshops sponsored by the National Arbor Day Foundation. Emphasis will focus on the importance of saving trees during construction and land development.

Each one-day workshop will be led by Charles A. Stewart, president of Urban Forest Management, Inc., Fox River Grove, IL. Developers, land owners, urban forestry consultants, realtors, arborists, landscape architects, city officials, foresters and others can benefit from Stewart's expertise on techniques for saving trees during construction.

The workshops are held with the support of Pella Corp. Attendees will receive a Certificate of Professional Achievement and a six-month introductory membership in the Foundation. Remaining scheduled sites for this fall are:

- Chicago (Oct. 5)
- Minneapolis/St. Paul (Oct. 13)
- Nebraska City, Neb. (Oct. 19)
- Denver (Nov. 1)
- Syracuse, N.Y. (Nov. 3)

For more information on "Building with Trees" and other fall workshops, contact the National Arbor Day Foundation at 402/474-5655.

EDUCATING THE PUBLIC to the positive benefits of lawns and landscapes is a never-ending job, but new resources appear every day. The Lawn Institute, Marietta, Ga., has published a series of eight brochures designed to educate the consumer on the basics of lawn care, selecting grass seed for different geographical areas, fertilizing and watering.

The brochures are intended as handouts and are written to inform and educate homeowners. "How the Environment Benefits from a Well Maintained Lawn" stresses the important role that proper mowing, watering and fertilizing play in developing healthy lawns. The six-page brochure explains how healthy turf conserves water, cleans the air, conserves energy, generates oxygen, builds soil, adds real estate value, increases comfort and reduces the need for chemical treatments.

Brochures are available from the Lawn Institute at quantity discounts. For more information about obtaining these brochures, contact the Institute at 404/977-5492. ■

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Stop summer weeds with Barricade and boost customer confidence all year long. Barricade herbicide is the only preemergence with low solubility that gives you a full season of crabgrass control from a single application. And when used at recommended rates, Barricade will not cause staining problems on your customers' fences, walkways, or driveways, so you can treat those high pressure areas with confidence. Barricade herbicide. The best way to help grow your business with more satisfied customers. To receive your **FREE** brochure and product label, call **1-800-435-TURF (8873)**.



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USE READER SERVICE #60

NEWS DIGEST

Woods Equipment Co. Acquires Gannon Mfg.

Woods Equipment expanded into the construction markets by acquiring Gannon Manufacturing Co., a California-based producer of industrial attachments.

Woods traditionally sold tractor mounted attachments for agricultural, industrial, residential, commercial and government markets.

Encore Reaches Nearly 80% Growth

Encore Manufacturing closed 1994 fiscal year with a sales increase near 80 percent. The company, founded in 1988, sells its commercial mowers and turf equipment mostly to commercial lawn maintenance contractors, as well as cemetery, golf and park maintenance crews.

"The growth can be attributed to both our walk-behind mowers capturing a larger market share and the introduction of...new products like our riding mower and Power-Comb dethatcher," said Dick Tegmeier, president.

ASPA Changes Name; Takes on New Logo

The American Sod Producers Association unanimously voted to change the name and logo of their 27-year-old organization to Turfgrass Producers International. The change reflects the association's increasing international membership.

The 940-member organization comprises 227 international members in 35 countries, including 152 outside of North America.

New Rep Group Forms In Southwest

DLT Associates and the Garland Newman Co. merged to combine TNT Associates, to represent the Southwest irrigation industry.

TNT Associates represents manufacturers in Texas, Oklahoma, Arkansas and Louisiana. Through its subsidiary, TNT AG/Nursery, the company also serves Colorado and Wyoming, as well as other states through its turf division.

PBI Gordon Opens Stock to Employees

PBI Gordon Corp. established an employee stock ownership plan, which recently acquired a majority ownership interest in the company.

The move was one of many selling options considered that would keep ownership "in the family" and allow the company to retain its current structure," said W.E. Mealman, PBI's president and chief executive officer.

EXPO '94 Slowly Shifts to Commercial Focus; Draws All Types of Attendees

AMID THE USUAL post-show facts and figures, a few small points indicate the International Lawn, Garden and Power Equipment Expo — whether intentional or not — may be seeing a stronger commercial product focus.

First, while only 15 percent of exhibitors exclusively displayed commercial products, 75 percent displayed a mix and 10 percent exhibited all consumer. Last year, the figures were 15 percent, 13 percent and 72 percent, respectively.

Second, out of the 28,000 people participating in the 11th annual EXPO 94 in Louisville, 4,200 — or 20 percent — were commercial mowing contractors and landscapers. That figure is up 21 percent from last year's. Other industry segments represented include 11.5 percent manufacturer representatives, 3 percent merchandisers/buyers, 3.5 percent equipment rental dealers; 18 percent distributors; and 44 percent dealers/retailers.

Last, manufacturers and show exhibitors made it easier to locate their commercial offerings. A number of larger manufacturers, such as Homelite, divided their products into consumer and commercial sections. The outdoor demo area was again divided between commercial and consumer product displays. Additionally, EXPO devoted an island indoors and a tent outdoors for commercial product manufacturers to display their newest commercial products and their booth numbers.

Some commercial product manufacturers claim success at the show and in annual sales in general.

"This has been a banner year for Gravely, both in sales and here at the show," said Joe Threet, district manager in Clemens, N.C. Gravely is the commercial mower division of the Ariens Co. "Commercial is a very aggressive market. A lot more people are hiring contractors to mow their lawns now that the economy has turned around."

Jim Elmer, a representative for Tanaka, Kent, Wash., which introduced their commercial line of trimmers last year, said the lawn and landscape market holds opportunities the company could not ignore. "It's unmistakably a growing segment of the market," he said.

Overall, more than 159 companies attended EXPO 94 that did not attend last year, according to EXPO on-site survey figures. A total of 581 exhibitors displayed their wares throughout the 816,000 net square feet of indoor and outdoor space.

Survey results also show 23 percent of attendees were first-timers, 47 percent had attended between two to five years, 19 percent had attended for six to nine years and 11 percent had attended for 10 years.

Dennis Dix, president and chief executive officer of the Outdoor Power Equipment Institute, reported that visitor registration increased 13 percent over last year; dealer/retailer categories were up 13 percent; distributors, 16 percent; landscapers/commercial mowers, up 21 percent; and equipment rental dealers were up 72 percent. More than 1,300 international registrants visited Louisville.

Dix largely attributed EXPO 94's success to a healthier business climate. An on-site survey showed that nearly all respondents expected their companies' revenues to be higher this year than last. About 34 percent said they expect profits to be up 15 percent or more.



EXPO continues to draw more attendees and exhibitors each year. EXPO 94 totaled 28,000 participants.

Cyanamid Accepts \$9.7-Billion Megadeal

American Cyanamid Co., Wayne, N.J., ended a fast and furious two-week takeover campaign by accepting American Home Products Corp.'s offer for \$9.7 billion. The campaign, which included a hostile tender action, executive meetings in seclusion and a take-it-or-leave-it, 24-hour-only offer to

Cyanamid's board, ended with an agreement of \$101-a-share.

Both companies' sales of prescription drugs, chemicals, vaccines and consumer products are estimated to reach more than \$12 billion. American Home Products will assume nearly \$9 billion in debt, which may result in large layoffs of employees in a massive effort to slash costs.

The deal may bring into question the fate of

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Profitable seasons don't just happen. They start early, with an application of Barricade, your year-long business tool. Barricade is the only preemergence that gives you season-long control of crabgrass from a single application. Its low solubility keeps Barricade in the weed germination zone for optimum performance — with less active ingredient for reduced environmental load. Add no staining concerns and you have three more advantages that increase customer satisfaction. Barricade herbicide. The best way to build profits from winter through fall. To receive your **FREE** brochure and product label, call 1-800-435-TURF (8873).



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USE READER SERVICE #57

American Cyanamid's agricultural chemical business. This fast-growing division with combined research and marketing expertise could bring from \$3 billion to \$5 billion if sold, said industry insiders.

According to *The Wall Street Journal*, Jack Stafford, chairman of American Home Products, denied any plans to sell the agricultural chemical business, saying that the division was a good fit with American Home Products' current research operations. Sources at American Cyanamid had no new information on plans for the division.

AAN, ALCA Contemplate Merge

The American Association of Nurserymen and American Landscape Contractors Association formed a task force to investigate the potential of the two associations merging. The concept, while still in its infancy, holds a myriad of implications for members and the green industry in general.

Foremost, the move would create a stronger legislative front to "better represent more segments of the green industry. But we need to evaluate how that will impact business aspects of both associations," said Fletcher Flemer, incoming president of AAN.

Additionally, the move also would dam the "mainstreaming of the environmental movement," stated task force's interim report. "Without broader, constructive involvement and advocacy by our industry, this 'green' movement could prove ultimately to be a negative factor in the industry's growth and prosperity...The industry must speak more loudly, more often and more cohesively in order to ensure that the public's interest in ecology remains a positive force for us."

Under the proposed unification concept, the umbrella organization would handle public and government relations, marketing, research and administration. The association also would encompass five divisions: wholesale growers, landscape installation and maintenance, environmental horticulture, interior plantscaping and retail garden centers.

The association's boards began contemplating the idea last December, although their first joint effort, a government relations alliance, began in mid-1990. A short time later, ALCA

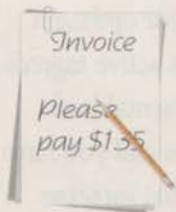
and AAN's National Landscape Association landscape division began to jointly market association publications. Since then the associations have considered many joint projects. Through at least 1995, the task force will review the feasibility of such a merge and, possibly draft a transition plan.

NCSU Offers On-Line Resource

North Carolina State University developed a revolutionary on-line technical database



Steve Hodges (second from right) demonstrates TurfFiles.



Handwritten

1894



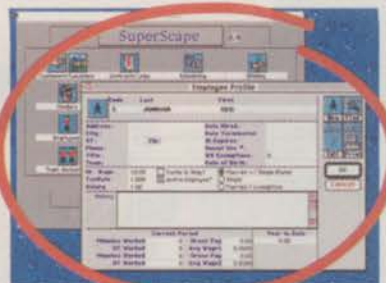
Typewriter

1924



DOS personal computer

1984



SuperScope for Windows

1994

Evolution . . .

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SoftQuest offers the *SuperScope* landscape maintenance software as your passport to the Windows Revolution. Everything you need from automatic billing to work orders is provided with the point and click ease of Windows on either your Macintosh or PC computer.

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USE READER SERVICE #86

called TurfFiles to provide a wealth of data on cultivar selection, weed and pest control, watering, fertilizing and dozens of other turf-related topics. The database can be accessed through use of a computer, modem and an Internet provider.

While the system is geared toward homeowners, county extension agents and professional turf managers are expected to test pilot the program, according to Arthur Bruneau, an associate professor of crop sciences at NCSU. Bruneau said users will be able to access TurfFile's toll-free number through the state's information superhighway by way of regional "gateways" or hubs.

"We're developing TurfFiles so it can be continually enhanced as new telecommunications and computer technologies are introduced," Bruneau said. "One day we hope to offer multimedia video presentations so that, instead of just reading about a fertilizer application, a user could actually see how the material is applied safely and effectively."

The project team plans to have a demonstration version of TurfFiles ready by year's end and the system on-line possibly by mid-1995.

Much of the program is funded through a \$24,000 grant from the John Deere Foundation.

Green Industry Grows In Georgia

A 1992 farm gate values survey for Georgia's growers of landscape stock showed a total of \$152.2 million in sales, making it the 10th largest commodity group in Georgia.

The survey, taken by the Georgia Agricultural Statistics Service, calculated only the farm gate value of sales and did not include marketing, distribution, services and supplies related to the industry.

"If you factored in the related and elements of the industry — labor, equipment, fertilizer, chemicals and maintenance — down to the installed product, the industry would easily be number one in economic value," said Ken Morrow, treasurer of the Georgia Turfgrass Association.

The survey also showed that Georgia's 61 sod growers produced \$24.6 million in sod on 11,490 acres. A total of 19,294 acres were in production overall for nurseries, sod farms and greenhouses.

Longhorn Donates Toro Mowers

The call was for professional type mowers to mow the lawn at Pleasant Hills Children's

Home, Fairfield, Texas. Longhorn Supply came through.

Pleasant Hills in its news bulletin requested the donation of commercial mowers to maintain the facility's nearly 30-acre property. The company had been trying to use consumer mowers purchased though a local merchandiser to mow six days a week. The mowers had to be replaced every few weeks, according to the bulletin.

Longhorn Supply, Dallas, Texas, came through with two Toro Pro-Line Recycler mowers, one mid-sized walk behind and one riding mower.

Next project for Longhorn and the children's home is installing an irrigation system by year's end.

CORRECTION

The July 1994 article "Wetting Agents, Polymers Find New Niche," misquoted James Quinn, president of Industrial Services International, Bradenton, Fla., as saying, "if a 3-inch caliper tree receives a recommended treatment, at a cost of \$150, it should be sufficient to absorb and hold 5 to 7 gallons of water..." The cost should have read \$1.50.

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USE READER SERVICE #35

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USE READER SERVICE #32

Association News

THE AMERICAN Association of Nurserymen elected Fletcher Flemer III, owner of Ingleside Plantation Nurseries, Oak Grove, Va., as its 1994-95 president. Jack Long, J&L Nursery Co., Silverton, Ore., was elected vice president and will continue as Region VI director. Region III director, Thomas Pinney, Evergreen Nursery Co., Sturgeon Bay, Wis., was elected treasurer.

Flemer is past president and board member of the Southern Nurserymen's Association and the Virginia Nurserymen's Association, and has been active in the Wholesale Nursery Growers of America and the International Plant Propagators Society.

Flemer said AAN carries a full plate this year, with three issues battling for prominent position: increasing membership, establishing a task force with the Associated Landscape Contractors of America to examine the possibility of merging the two associations and polling AAN membership to monitor support for the Garden Council's proposed promotion order.

The **Professional Lawn Care Association of America** has raised half of its targeted \$60,000 needed to fund its Risks vs. Benefits

For more information...



AAN

1250 I Street, NW
Suite 500
Washington, DC 20006
202/789-2900

PLCAA

1000 Johnson Ferry Road, NE
Suite C-135
Marietta, GA 30068
800/458-3466

CC

114 South Pitt Street
Alexandria, VA 22314
703/739-2401

PGMS

120 Cockeysville Road
Suite 104
Hunt Valley, MD 21031
410/584-9754

ALCA

12200 Sunrise Valley
Drive
Suite 150
Reston, VA 22091
703/620-6363

of Turf campaign. The association is counting on member firms to contribute additional money.

PLCAA opened this year's national grass-cycling campaign by sending turf-related articles to 3,000 newspapers and magazines nationwide, and by producing radio and television public service announcements.

The Risks vs. Benefits campaign is a follow-up program to continue educating national media about the benefits of turf. Supplier firms have donated money to the cause,

and PLCAA has pledged matching support from its members.

Currently, the association is working to identify which media should be targeted, according to Ann McClure, executive vice president of PLCAA.

In other news, PLCAA extended its deadline for accepting nominations for its environmental improvement and community services awards. The deadline, originally set for Sept. 15, has been changed to Oct. 11. The

(continued on page 18)

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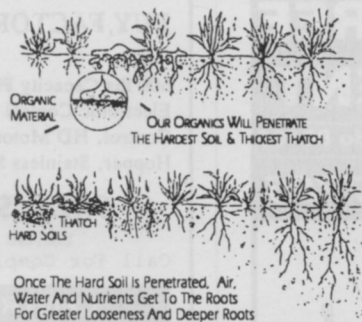
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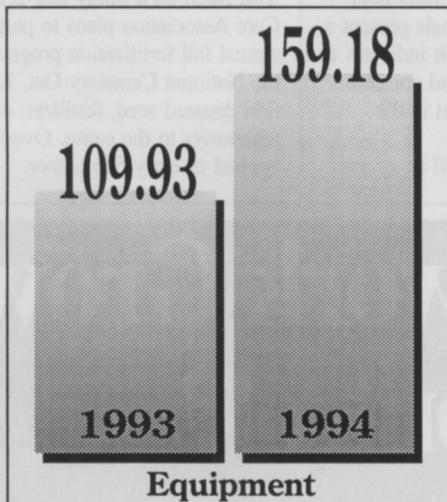
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USE READER SERVICE #93

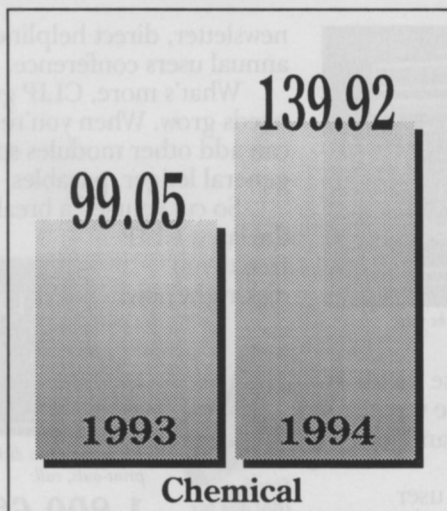
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"Lawn & Landscape Maintenance has always been at the forefront of industry happenings. LLM is committed to providing interesting and meaningful information that can be valuable to running a business in today's green industry." — Gary Thornton, president, Thornton Gardens, Cincinnati, OH

"Results! This one word effectively describes why we advertise in *Lawn & Landscape Maintenance*. Its reach into the market makes it the smart dollar spent in advertising. Which brings to mind another reason for staying with LLM ... Sales." — Tom Sayward, president, Tuflex Mfg. Co. Inc., Pompano Beach, FL



"Lawn & Landscape Maintenance magazine keeps me abreast of industry trends and events. LLM is a vehicle for me to keep my business running smoothly." — Lou Wierichs, president, Pro-X Systems, Appleton, WI

"Quality leads and exposure to decision makers are what we want for our advertising dollar. *Lawn & Landscape Maintenance* is an excellent means of accomplishing this goal. Our leads reflect we are reaching decision makers in lawn service companies, both large and small." — Robert Brophy, Turfco Mfg., Minneapolis, MN

During the first half of 1994, Lawn & Landscape Maintenance continued to show dramatic increases in advertising support. Today, LLM is the fastest-growing magazine in the green industry.

**Lawn & Landscape
MAINTENANCE**
LEADERSHIP IS MEASURABLE

Association News

(continued from page 16)

awards will be presented at PLCAA's annual conference in St. Louis Nov. 14-17.

A half-day backyard composting training session will highlight **The Composting Council's** fifth annual conference Nov. 16-18 at the Vista Hotel in Washington, D.C. Registration fee for the session is \$125 standalone, or is included in the conference fee of \$350 for members and \$425 for non-members.

The training session, scheduled for Nov. 16, will cover reducing odor and noise, tools for successful operations, innovative markets, innovative technologies, financing and a technical symposium on taking compost operation from theory to practice.

The overall conference's theme is "Expanding the Boundaries of Organics Recovery," focusing on the industry's efforts over the past five years to forge business development, project innovation and technical evolution.

The **Professional Grounds Management Society** kicked off its third PGMS/MAPPA conference offering a diversified educational program for more than 100 attending com-

pany representatives.

PGMS continues to work with the Association of Physical Plant Administrators and other regional associations to promote grounds maintenance and educational opportunities within related industries.

Educational sessions covered composting regulations, aerification and overseeding, prairie grasses used in landscaping, fungicide update and master landscape planning and athletic field management.

Have you ever stood back and evaluated your company's image as if you were a customer?

Richard Akerman, president of The **American Landscape Contractor's Association**, posed that question to ALCA members in his monthly newsletter address, asking readers to reevaluate the effectiveness of their business marketing plans.

Akerman outlined a number of key points to running a successful landscape business that are commonly overlooked. Most notably, he recommended professionals present a "unified, consistent image, which indicates a level of thought, organization and commitment, and makes a firm stand out in the minds of homeowners."

Other key points that help mold a

company's image include: uniforms; personal appearance, which includes dress, demeanor and attentiveness; receptionists' greetings and phone techniques; logos on letterhead and all correspondence; office atmosphere; equipment; community relations; association memberships; awards; presentation styles; and clients.

Other non-personal points to consider include brochures, direct mail pieces, videos, photography, advertising and publicity/publications.

IN BRIEF...The National Arborist Association slated the Tree Care Industry Expo '94 for Nov. 19 at the Pennsylvania Convention Center in Philadelphia. The seminar lineup includes topics by industry-prominent speakers including Jim Ingram, vice president of the Bartlett Tree Expert Co., who will speak on "Plant Health Care Now and in the Future" and Paul Wolfe, Integrated Plant Care Inc., who's topic is "Everything You Need on a Spray Rig"...The Ohio Lawn Care Association plans to participate in the annual fall fertilization program for the Dayton National Cemetery Oct. 1. The association donated seed, fertilizer, equipment and manpower to the cause. Overseeding was applied in early September.

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USE READER SERVICE #85



NEW SUPER BOOM™

What makes you so tough?

With the New Holland Super Boom™ skid-steer loader, the answer is simple: everything. The new Super Boom is the most durable, reliable and productive machine you'll find.

There when you need it

The new Super Boom is built tough to work when you need it. The drive chains never need routine adjustment and the Advanced Warning System keeps you informed of all major functions. There's a new electrical system with reduced connections and new hydraulics with a better routing system. And, the new Pick Up 'n Go™

universal attachment system will get you hooked on this machine for any tough job.

Built to last

The new Super Boom is built strong to last. It has a tougher boom and frame to handle the heavy loads of landscaping and nursery operations, and massive loader pins for long life in any application. The powerful engine and new attachment system will let you move mountains ... or just the trees. And, it's been field tested with customers like you to insure that it starts up time after time ... even in the toughest conditions.

Easy to service

The new Super Boom is built intelligently for easy maintenance. You'll have quick access to all the routine service points with the boom down.

And, if it ever needs major repairs, the entire boom and cab tilt forward for

the best engine and transmission access anywhere.

Best in productivity

The new Super Boom is still the best for productivity and safety because of its superior boom reach, lift height, lift capacity and stability.

So, what makes the New Holland Super Boom™ so tough? Reliability, durability and superior performance.

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NEW HOLLAND
The winning team

Getting better weed control in your turf and ornamentals doesn't require the use of more herbicides.

In fact, like most turf and landscape managers, you probably want to use less

herbicide. Which is why you should use Gallery® herbicide.

The unique chemistry of Gallery can reduce the need for multiple applications of herbicide. Because Gallery is a preemergent herbicide, it stops the emergence of weed seedlings. So they never even break the surface of the soil.

In a single, low-rate application, Gallery can control the growth of 95 broadleaf weeds in



*A Story Straight
From Crooked Stick.*

By switching to Gallery the superintendent at Crooked Stick Golf Club in Carmel, Indiana, reduced herbicide applications on his fairways from five a year to one. The very particular PGA officials who inspected those fairways for the 1991 PGA Championship raved about their outstanding condition.



ornamentals or turfgrasses for up to *eight months*. That means you can go all season long without worrying about whether spurge, oxalis, plantain or other weeds will show up to mar your landscapes and turf.

Other herbicides would require five applications to deliver season-long control. Gallery delivers all season long with only one application.

Although Gallery is activated by water, it remains stable on the

soil surface without rain for up to 30 days. It resists breaking down by sunlight, so you can be assured of maximum performance even under dry conditions. Gallery doesn't have any of the harsh effects of other

Gallery. For the to do more



ose who want e with less.

long-residual herbicides. And there's minimal risk of off-target damage.

When you use Gallery along with Snapshot* and Surflan,* you can now get the long-term weed control you want in sensitive areas

where ornamentals, shrubs, trees, perennial flowers or turfgrasses are growing. Snapshot controls both broadleaf and grassy weeds in ornamental beds for up to eight months. It is labeled for over-the-top

application of woody ornamentals.

Of course, you've got more than broadleaf weeds to worry about. To



Activated by water, Gallery creates a control area around weed seedlings.



Gallery shuts down the growth process for up to 8 months.



With Gallery, seedlings die before you ever see them.

prevent grasses that invade beddings, combine Gallery with Surflan herbicide to create the ideal long-term weed management program. Surflan is gentle on labeled established plants, as well. And when used according to label directions, it can be sprayed over the top of more than 200 different species of established ornamentals, trees, shrubs, ground covers and field-grown fruit trees.

Our 40-page book, The Nursery And Landscape Guide To Responsible Pest Control can fill you in on developing your own weed management strategy. It also contains useful information on controlling insects and turf diseases more effectively. For your free copy, return the coupon or call our toll-free number. And learn more about using less herbicide.

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USE READER SERVICE #83

Carving A Specialty Niche

LANDON REEVE'S entry into the green industry came about when he and a friend distributed postcards throughout the neighborhood seeking part-time work.

The teenagers landed jobs at a local nursery, where Reeve worked for five summers. He immediately got a taste of the hard work, long hours and deep-down satisfaction acquired through working with outdoor plants.

He became hooked instantly.

"I enjoyed it. I enjoyed the challenge, enjoyed working with plants and I enjoyed the people I worked and dealt with," he said.

But little did he know his love of plants would lead to his owning an \$8.5 million landscape firm some 30 years later. "As a teenager I had a goal that some day I would have my own business. Specifically at that point I didn't know just what. It evolved really from working part-time for the nursery. That was how I got into this whole business."

In 1963, as a recent college graduate, Reeve moved on to work for a local garden center in Silver Spring, Md. One year later, he and a coworker opened Woodside Gardens, a garden center and landscape business located in Rockville,

In a metropolitan market saturated with competing landscape firms, Chapel Valley Landscape Co. maximizes its design/build/manage capabilities to ensure profit and progress into the next century.

By Cathy Hoehn

Md. "I handled the landscaping and my partner handled the garden center. After four years, I sold my interest in the firm."

Reeve's pre-Chapel Valley experience whet his appetite for landscape work but not the grueling hours needed to operate a garden center. "When you're involved with a landscape business and garden center you get to work seven days a week. For four years we worked every day from 6:30 a.m. to 7:30 p.m. It became rather gruesome."

So, in the interest of spending more time with family, he and the

partner divvied the business and in 1968 Reeve started a little landscape firm with his wife Janet.

RIPE MARKET. The Washington, D.C., market was a different animal in 1968 than it appears today. Foremost, there was plenty of landscape work available and minimal competition.

"The 1960s were a good time — at least in the late '60s. There were a number of firms in the market that had been around for awhile, but there wasn't as much competition as you see today," Reeve said.

The slightly tapped market provided the ideal business setting for a progressive-minded, hard-working landscape

entrepreneur. "We basically did whatever we had to do. We were very small at first. The first year I think we had three employees and two part-time workers."

From Woodside Gardens, Reeve brought with him one employee, one truck, some tools and a portion of debt from three suppliers. He made an arrangement with the debtors to extend his credit, allowing him to pay them back over one and a half years. The company actually paid the debts within a year.

Despite his objection to the long hours required by the garden cen-

ter, Reeve put in about as many hours getting Chapel Valley Landscaping on its feet. Janet, who held a bachelors degree in education, handled most of the in-house, support work such as typing, bookkeeping and payroll, until 1973 when she returned to school to study pre-med. "It wasn't until 1976 that I hired anyone at management level other than field personnel. We got to be about \$1 million by then."

Reeve attributes a large part of his early business knowledge to interacting with other local and national trade association members.





"If you're involved in growing a business, (associations are) a critical avenue for learning things quickly. Small businesses tend to become introspective and think, 'well, I won't participate while I'm small.' In reality, that's the best time for them to learn."

Chapel Valley's revenues reached \$185,000 the first year. Thereafter, annual revenues increased 10 percent to 20 percent except during recession years.

The company offered only landscape design and installation at first — 60 percent commercial and 40

percent residential. Reeve delayed the move into the maintenance market until 1980 when it became clear that landscape maintenance had earned a reputation as a viable, stable profit source.

"We did a lot of large, corporate campuses, and the question came up as we finished our work, 'who's going to take care of it?' And we would say 'not us. We don't do that.' After awhile, we really saw the opportunity to not only provide customers with the best on-going service, but we saw that the long-term relationships with customers

Landon Reeve has brought the fledgling, \$185,000 Chapel Valley Landscape Co. of 26 years ago to an \$8.5 million company. He largely credits devoted employees and clients. Photo: Erik Kvalsvik.

CHAPEL VALLEY LANDSCAPE CO.

HEADQUARTERS: Woodbine, Md.

BRANCHES: Sterling, Va.

FOUNDED: 1968 by Landon and Janet Reeve

PRIMARY SERVICES: Exterior landscape design/build/manage and landscape consulting. Specialties include water management, sports turf, tree preservation and colorscaping.

EMPLOYEES: 160 year-round, 60 seasonal. Includes eight certified pest applicators, seven licensed landscape architects and designers, two certified landscape professionals (American Landscape Contractors Association's certification exam for managers) and 22 certified horticulturists (Maryland Nurserymen's Association's certification exam for plant identification for technicians).

1993 REVENUES: \$8.5 million

PROJECTIONS: 1994 projected revenue, \$9.5 million; projected profit, 5 percent. 2000 projected revenue, \$15 million; projected profit, a minimum of 5 percent.

EXECUTIVE SUMMARY

THE CONCEPT: To be a leader in the environmental industry by providing quality products and professional, innovative services which exceed clients' expectations; enable employees to reach personal and career goals; and earn a fair profit.

FUTURE CHALLENGES: Maintaining a leading edge in a competitive market; dealing with regulatory changes that constrain companies' abilities to offer top-rate service at an affordable price.

THE PRESIDENT & CEO

J. LANDON REEVE, IV

AGE: 54

FAMILY: Widower, his wife Janet passed away in May of this year. Son, James; daughter, Deonne; and grandson, Bradley.

EDUCATION: Bachelor of science degree in ornamental horticulture from the University of Maryland.

JOB HISTORY: Worked for a local landscape firm for one year after college. Co-founded Woodside Gardens, a garden center and landscape business, in 1964.

PHILOSOPHY: Teamwork is the secret of design/build/manage. From landscape architect to crewmen, teamwork ensures that the client receives full value for his or her investment in a landscape. Also, employee training is integral to successful market leadership.

AVERAGE WORK WEEK: 55 hours

EQUITY HELD: 100 percent

made sense."

Similarly, the influx of large commercial and industrial projects in the D.C. market had caused Chapel Valley to dismantle (except for some large jobs) its residential service in 1975. "At that time a lot of corporations were moving their headquarters into the Washington, D.C., area. We had the opportunity to do larger projects, so we concentrated on commercial landscape work."

The company maintained its mostly commercial status until 1988, when demand and opportunity coaxed it back into the residential market. Chapel Valley altered its approach this time around. "One of the things we did when we started back in residential was develop it separately from commercial. We now use different people, different equipment — it's a different profit center. Our residential crews focus purely on residential."

The separation of services is essential, at least in the D.C.-area market, contended Reeve. "People have a more objective view of commercial work. Residential is a whole different mentality. People who sell and design residential are totally immersed in the emotion and feelings of their clients. Commercial work, on the other hand, is cut and dried. If the contract says plant a tree here, that's what you get. There's no leeway." Essentially, he said, residential clients request more attention and adjustments to work in progress, while commercial clients' projects are much more tied to specific contractual agreements.

GROWING PAINS. Chapel Valley didn't aspire to become an \$8.5 million company. "It seemed to just happen," said Reeve.

"Growth has never been a driving force for me, to be honest with you. I've always been more interested in doing a good job, having good people... People ask me, 'did you ever expect to get this large?' No, I didn't... We picked up business, people were happy with our service and kept us."

From the initial \$185,000 season, Chapel Valley moved up to about \$275,000 annual revenues in year two and about \$450,000 in year three. Annual growth remained steady between 10 percent and 20 percent until 1990, Reeve said. "Growth comes in plateaus and jumps. If the marketplace is hot, we tend to grow a little faster. The



biggest growth was in the middle '80s. Between 1984 and 1989 or '90, we grew about 3.6 times what we were the year prior (about 360 percent growth).

"In 1990 we purposely shrank back during the recession because we saw the market shrinking. We decided to find ways to reduce costs and expenses — at our pace and our thinking, rather than be forced into making decisions we didn't want to make."

The company earned about \$10.5 million in revenues in 1990. Anticipating an economic downturn, the company began to slowly restructure, eliminating full-time positions, laying off employees and reducing the number of part-timers. "We gradually reduced the number of employees from about 180 to 140 over six months to a year. We reduced costs, took a hard look at everything, saw what things we could do for less money and still retain the integrity and quality of our work."

The cutback resulted from a hard lesson learned in the early '80s. "In the '80s we did the opposite. We tried to maintain the business, cutting prices considerably. This time

around, we decided we would not cut prices 30 percent. We would do more business and try to make it up in volume, which is very difficult to do. But we were able to stay alive and healthy."

Healthy is as healthy does. Over the three-year recession starting in 1990, the company averaged 1 percent to 2 percent profit. Only one year did the company sink into the red.

"The mid-'70s recession didn't take much toll on the company, which was much smaller then. "Small companies have the advantage that they don't have to cut back as much. They don't have much overhead," Reeve said. "But larger companies have the advantage of being able to increase business faster. It's a tossup."

Chapel Valley sometimes felt forced to lower prices during economic recessions, particularly for management services. "We had clients that stayed with us but asked for price concessions. They were getting prices considerably lower from other companies. In some cases we were able to maintain our prices. In others, we had to go closer to the low end. We made the decision case by case," Reeve said.

Chapel Valley focuses on strengthening all aspects of its design/build/manage to provide better service for clients.

Reeve recommends focusing on current clients to ward off competition. "I think we've been able to hold our market share and customer base pretty well; primarily by hugging our customers more, sticking with them, paying more attention, being a little bit more aggressive. We try to get more business through referrals from our existing client base."

PRESENT DAY. Reeve's philosophy for attaining success is simple. "The goal is really to keep customers, keep them happy and keep them long term. People will stay with you if they think they're getting the quality and getting treated right. If they're not satisfied, they're going to go elsewhere. The burden is on us to keep that relationship going." Chapel Valley hopes to boost its design/build/manage services and develop specialty niches — namely water management, colorscaping and sports field management — to help carry the firm to its projected \$9.5 million revenue and 5 percent profit growth for 1994; and \$15 million and minimum of 5 percent profit projected for 2000.

Currently, only 40 percent of Chapel Valley's revenue comes from design/build/manage. But the company plans to increase that to 75 percent by 2000. The remaining 60 percent is generated via negotiated sales and limited bid work, which Reeve hopes to diminish.

Interestingly, Reeve doesn't consider the firm's computer-aided design system — which has yet to be integrated with the company's new computer and software package — much of an advantage. "We're using the CAD machine where appropriate. It's not the end-all to everything. But for day to day usage, it's good for designs that are a little more complicated, where you anticipate a lot of changes — a new parking lot, etc. Once you put in the design, you can go back and change it easily."

The company's residential jobs are all designed by hand. "That gives us the ability to be more flexible. There aren't as many changes in residential as in complex, commercial jobs. We're still figuring

(continued on page 26)



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USE READER SERVICE #55

Cover Story

(continued from page 24)

out what's best where, so I don't have the ultimate answer," he said.

Chapel Valley Landscape operates six profit centers between company headquarters in Woodbine, Md., and its branch in Sterling, Va. (which opened in 1985 when traffic became so congested in the D.C. area that Chapel Valley employees couldn't get to jobs quickly, which decreased production). The six profit centers include Virginia landscape, Virginia landscape management, Maryland landscape, Maryland landscape management, residential landscape and water management.

Together, Chapel Valley's landscape offices generate about 50 percent of business, while the remaining 50 percent is from the landscape management and water management profit centers. Residential landscape and water management are based out of the Maryland office.

Reeve shies away from negotiated (subcontracted) and bid work. "Landscape construction (as bid

FLEET SIZE. Chapel Valley's fleet includes 100 tagged units as follows; 18 cars, 19 tractors and backhoes, 59 trucks from S-10 to Tandems, and 23 trailers from the three-ton to 20-ton. The firm employs four full-time mechanics and one shop supervisor.

EQUIPMENT IN SERVICE. Chapel Valley has 93 mowers in service. That number breaks down as follows: 10 tractor-mowers, 41 walk-behind mowers and 42 push-mowers in use. In addition, 235 pieces of small engine equipment are in service, about 10 percent of which is specialty equipment. The company currently uses 70 weed-eaters, 70 edgers and 70 blowers.

work) is a much higher risk, much more volatile, less profitable. One year you can have a great year, the next year you can have a slow year. We're now shifting emphasis to design/build because that builds more of a steady, long-term relationship with customers."

The company touts its irrigation design, installation and maintenance as a separate profit center.

"We've seen good growth in irrigation. We also do sports turf irrigation and drainage on football fields, etc. That's an area we've seen some interest and growth the last couple of years. We've also seen growth in the design and in-

stallation of systems for commercial, residential and institutional. Hospitals, parks — that's an area we will continue to grow."

Similarly, the company plans to grow its colorscaping service, which is becoming a popular add-on service nationwide.

TRAINING ESSENTIALS. Reeve and his wife Janet, who passed away in May, set up an extensive training program for employees. Reeve considers it one of the company's better investments.

"The contribution we make to employee training upgrades employees' skills, improves customer

service and reduces work-related injuries," he said.

Janet spearheaded Chapel Valley's training and education program efforts. The most progressive feature of the program is the extent to which it caters to the company's Hispanic work force. About 80 of Chapel Valley's 160 employees migrated from Nicaragua, El Salvador, Mexico and other Spanish-speaking countries.

In the following question/answer session, Reeve outlines the finer nuances of Chapel Valley's training program; specifically, its bilingual offerings.

(continued on page 28)

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USE READER SERVICE #63

Cover Story

(continued from page 26)

Q. What is the greatest stride you've made in dealing with a work force that largely doesn't speak English?

A. Putting together a training program and educational material that is geared toward our Spanish-speaking employees. We've started to get that moving forward. Everything we do is in Spanish and En-

glish. We have an interpreter. All of our company meetings are interpreted in Spanish and English. All of our written material—including our newsletter, "The Valley Times," which usually runs 10 to 15 pages—is in Spanish and English. All of our handbooks are in both languages.

Q. Have you found many outside technical resources in Spanish that offer the information your employees need?

A. Not currently. To give you an example of how much that information is looked for: Our local association brought in a Spanish professor from Arizona State University for their summer field day. They had one day where all their programs were conducted in Spanish. About 80 people attended and the response was really excellent.

This year they repeated it, and we worked our training day and company meeting in the day before and had the same person come here

and spend the day with us and train our people. The response from our people—we have about 80 people that speak Spanish—they were tickled pink with it. They were really glad we were able to offer technical training, not just translations. That's a program we're developing and will be doing more of.

Q. Does Chapel Valley have any Hispanic people in management?

A. Yes. There are some foremen. We're just gradually getting to training and bringing more people into higher positions. Seven years ago we had no Spanish-speaking people in the company. So we've had to work really hard to make this thing work.

Q. How did your Hispanic work force grow so quickly?

A. We started with a few—six or seven—they're still here as employees. At one point, the market was booming and there were more Hispanics looking for work than any other nationality. Our Hispanic employees are really confident and willing to work hard, long hours. They are reliable, dependable and easy to work with.

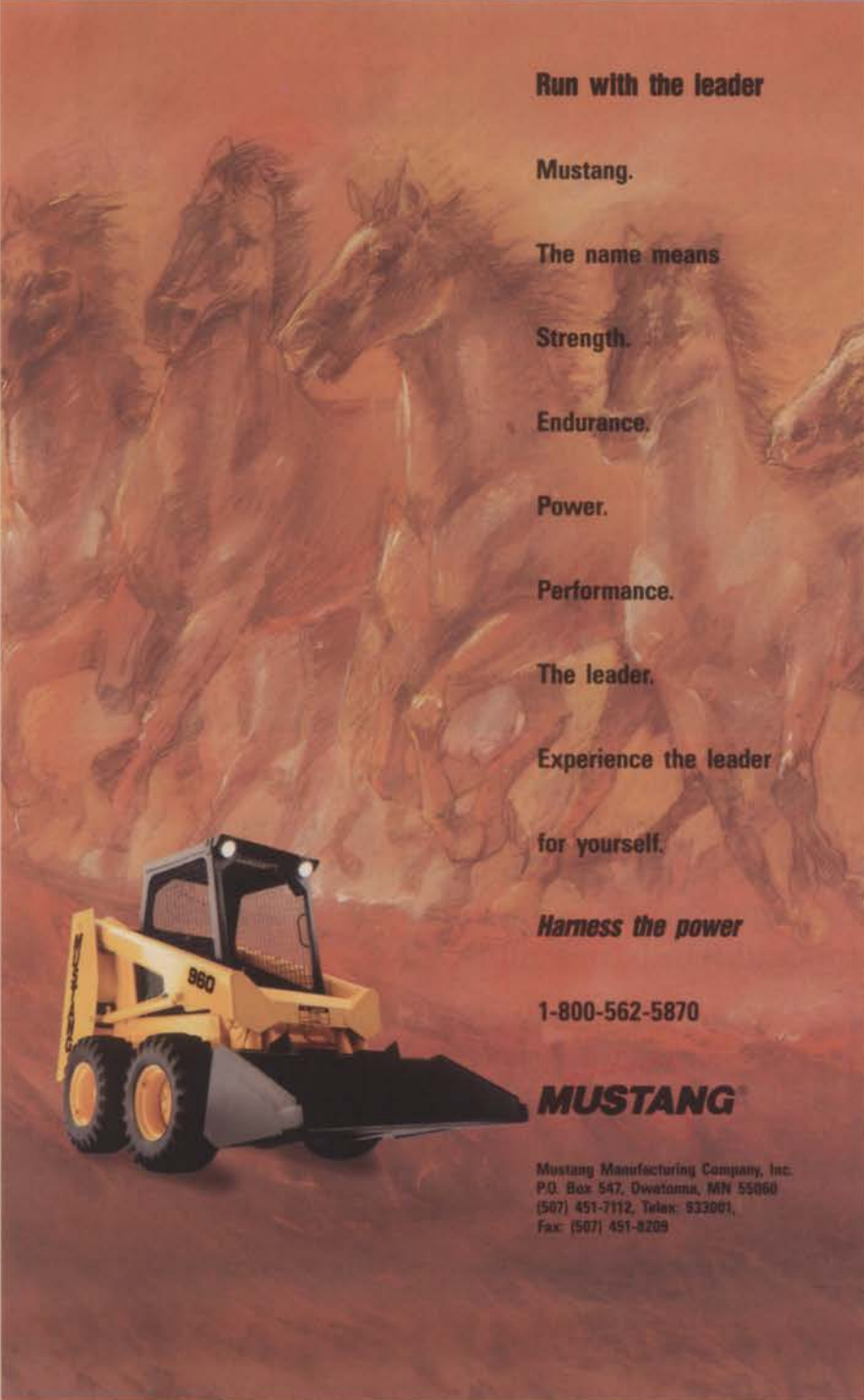
Q. What constraints, if any, do you have in hiring immigrants?

A. We have to make sure they have legal immigration papers. We're very strict about that. We would not consider hiring someone that does not have legal immigration papers. We made that decision a long time ago. It's not a gray area.

Q. What other standards do you set for hiring?

A. We also have an alcohol and drug testing policy. We test everyone we hire and do random testing throughout the company. My wife spearheaded that. She (and) a task force of about five or six people put together the Employee Assistance Program over a three-month period. They had it reviewed for legalities and then introduced it to the company in Spanish and English. It took a lot of time to research and develop, but it's been well accepted by our employees. ■

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



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Promoting Quality Compost

To ensure quality compost is used in various market settings, manufacturers of compost materials must educate the end user on product parameters and market uses alike.

By Ron Alexander

THE POPULARITY of compost production has grown exponentially over the past several years, a trend expected to continue. The acceptance of compost products in the landscape has grown similarly

because quality compost provides excellent agronomic and horticultural benefits, in turn leading to field successes.

Compost use can be substantiated by the economic benefits it pro-

vides. Compost is typically less expensive than other soil amendments, and has the ability to improve soil characteristics to a degree that plant/crop death is reduced, thus decreasing replacement materials.

Several environmental benefits of compost products have also been identified including: reduced soil erosion, improved microbial population and improved cation exchange capacity. Benefits and successes aside, many green industry professionals have not tried compost. Maybe they're not confident in the results compost is said to provide, or maybe they don't know enough about the products or how they should be used.

Confidence in composted products will continue to increase with successful compost usage. This can be accomplished by the producing consistent, quality compost and by providing accurate, thorough product information to potential users.

Because growing conditions and plant needs differ, compost users should be supplied with accurate characterization data pertaining to the compost products they use. This data will enable a landscaper to use



The quality of the end product in composting is an important ingredient for successful establishment in a landscape setting.

compost most suitable to individual growing conditions.

Specific characteristics of a compost product dictates how it can best be used, and in which applications and markets. By providing accurate characterization data, compost users can purchase the appropriate product for a given project or application.

BUILDING CONFIDENCE. To assist in cultivating user confidence and to further address the needs of compost end users, the national Composting Council in Alexandria, Va., and the Florida Department of Agriculture and Consumer Services funded an important project to develop a list of minimum quality compost parameters.

These parameters were designed with the intent of educating both current and potential users of the benefits and proper uses of compost. Because of the immature nature of composting, it's up to the

manufacturers of compost to pass needed information on to end users so they become adept at properly using compost in a variety of market settings.

The first part of the project contained parameters representing the basic chemical, physical and biological data needed by compost users to assure successful compost use and overall satisfaction. Basic characterization data gives compost users greater confidence in using compost products because they'll know what is being purchased and have a better understanding of how it should be used.

A list of suggested compost parameters was developed by an expert review team of compost researchers, producers and marketers, as well as the Compost Council's Marketing Committee, to enhance compost use and improve user satisfaction. Quantitative data, with respect to the eight

COMPOST PARAMETERS*	RATIONALE FOR INCLUSION:
pH	Necessary for system management; effect on pH adjustment.
Soluble Salt Content	Necessary for system management; potential toxicity; effect on watering regime.
Nutrient Content (NPK minimally)	Necessary for system management; effect on fertilizer requirements.
Water Holding Capacity	Necessary for system management; effect on watering regime.
Bulk Density (lbs./yd. ³)	Product handling and transportation issue, estimation/conversion of application rates.
Moisture Content	Product handling and transportation issue.
Organic Matter Content	Necessary for system management; relevant in determining application rates. Some use as measure of value.
Particle Size	Necessary for system management; effect on porosity. May determine usability in specific applications.

parameters outlined above, are tools which producers and marketers should use to help promote successful compost use and overall satisfaction. (See box above.)

Additionally, qualitative data with respect to these parameters should be routinely provided to compost users, when appropriate, based on feedstock.

COMPOST PARAMETER*	RATIONALE FOR INCLUSION:
Trace elements/heavy metals	Necessary for system management; effect on fertilizer requirements. Potential toxicity. Necessary to address and reduce public concern.

During the research and technical review process, both maturity and stability were also suggested as minimum compost parameters. However, unlike other parameters, industry standard test methodologies for these two areas do not currently exist. As testing guidelines are established the information will become part of the parameters.

COMPOST PARAMETERS	RATIONALE FOR CONSIDERATION:
Maturity	Necessary for system management; effect on seed germination/plant growth.
Stability	Necessary for system management; effect on nutrient availability (nitrogen), odor generation.

* Recommended Test Methodologies for all proposed parameters may be found in the national Composting Council's Recommended Test Methods for the Examination of Compost and Composting, Draft 4.3, Jan. 11, 1994.

UNDERSTANDING PARAMETERS.

Each of the eight quantitative parameters are discussed in detail below including the rationale for its inclusion, specific testing methodologies and related information.

pH: pH is the numerical measure of the acidity, alkalinity or hydrogen ion activity of the soil. The pH scale ranges from 0 to 14, with a pH of 7 indicating neutrality. Most compost has a pH between 6 and 8.

Specific plant species will flourish when grown within a specific pH range. But, based on typical compost application rates, the addition of compost may affect the pH of a growing media. Consequently, pH is a necessary parameter to be aware of since it can affect maintenance practices.

pH is adjusted through applications of lime (alkaline) and sulfur (acidic). If liming agents are used in the production of a compost, the information should be provided to end users. While lime in the composting process may not dramatically affect the compost's pH, it will have a pronounced effect on

calcium availability. Also, it's often difficult to adjust the pH of limed composts because of its higher buffering capacity.

Soluble Salts (salinity): Soluble salt concentration is the accumulation of soluble ions in a solution, and is measured by the ability to carry an electrical current. Many nutrients are supplied to plants in salt form and are not considered problematic in manageable levels, while other specific soluble salts can be more detrimental to plants (e.g. sodium and chlorine salts).

Most plant species have a salinity tolerance rating with predetermined maximum tolerable quantities. Excess soluble salts can cause phytotoxicity to plants, as in the case of fertilizer burn. Soluble salt levels are measured in mmhos/cm or dS/m. Compost may contribute to, or dilute, the cumulative soluble salt content of a growing media or soil. Thorough watering can reduce soluble salt content.

Nutrient Content (NPK): Nitrogen, phosphorous and potassium are the three nutrients used by plants in the greatest quantities, and are the nutrients most often applied through fertilization. These three nutrients are measured and expressed in a dry weight basis in the form of a percentage.

The content of these nutrients should be provided allowing users to make decisions regarding the addition of supplemental nutrition.

Although large quantities of nutrients are not typically found in compost, it is generally applied at higher rates than most fertilizers representing a significant cumulative effect.

Water Holding Capacity: Water holding capacity is the ability of a given volume of compost to hold water under one atmosphere of pressure. It also measures the potential benefit of reducing the required frequency of irrigation, as well as gross water requirements.

The water holding capacity is important to allow end users to monitor, or estimate, the effect of the compost on crop watering regime and growing media. Water holding capacity is measured as a percent of dry weight.

Bulk Density: Bulk density is the weight per unit volume of compost and is used to convert compost application rates from tonnage to cubic yards. An application rate expressed in cubic yards per acre is extrapolated to express a rate represented as a depth in inches.

Bulk density is also used to determine the volume of compost which may be transported on a given occasion by a specific vehicle. A product's bulk density may also affect other handling issues. It is typically measured in grams per cubic centimeter and converted to



pounds per cubic yard.

Moisture Content: Moisture content is the measure of water in a compost product, expressed as a percent of total solids. In compost, it can affect bulk density and issues regarding transportation.

Moisture content is also relevant because it affects product handling and application. Dry compost can

Debris management is a critical facet of the landscape industry. As outlets for compost grow, so too does compost's popularity.

resist wetting and be dusty and irritating to work with, while wet compost can become heavy and clumpy, making its application more difficult and delivery more expensive.

Organic Matter Content: Organic matter content is the measure of carbon-based materials in compost, and is typically expressed as a percentage of dry weight. This figure may be needed to determine application rates for soil incorporation and topsoil production.

In these instances, standard agricultural soil test kits are used to determine the recommended application rate of compost. However, these rates determine organic matter quantity on a per acre basis.

Typically, rates are not designated for specific types of organic matter. Therefore, the organic matter content of the compost must be known to convert the application rate to a usable form.

Particle Size: The degree to which compost particle size is measured should be based on the end use of the product or your customer's specific needs. For most applications, merely specifying the product's maximum particle size or the screen size is sufficient. However, for specific applications, such as potting/nursery media component, a full particle size distribution may be required.

A compost's particle size distribution will affect the porosity of the media to which it is added. Particle size distribution measures the amount of compost meeting a specific particle size range by using a series of sieves (screens) to capture compost particles of specific size. Particle size distribution figures are expressed as the percent of material retained per sieve size.

The particle size of a compost
(continued on page 34)

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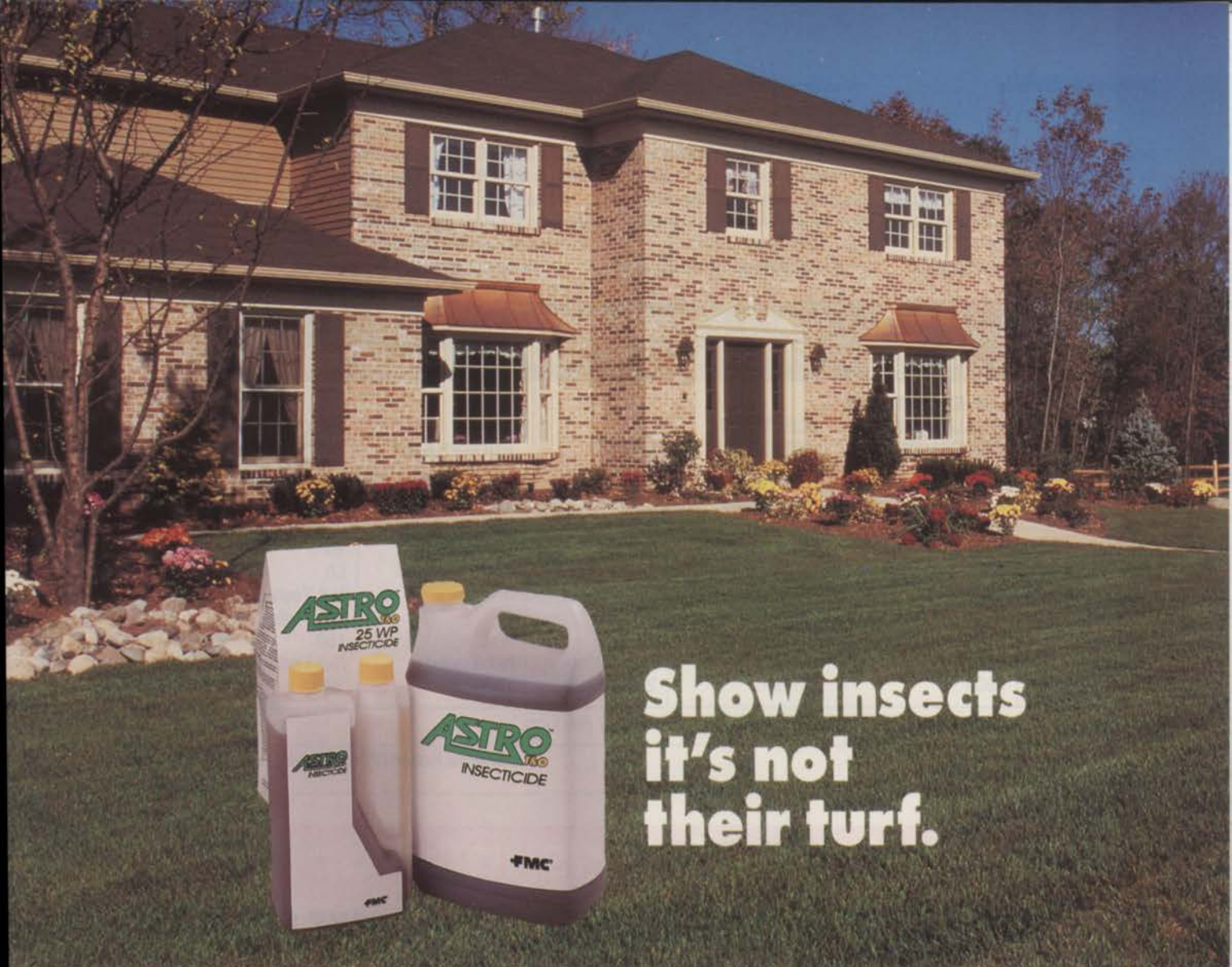


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Compost Guidelines

(continued from page 32)

product may also determine its ability to be used in specific applications. For example, a compost product with a maximum particle size of 1/2 inch or greater may not be acceptable as a turf topdressing, while

a product with a maximum particle size of 3/8 inch or less is acceptable.

QUALIFIED PARAMETERS. Qualitative data with respect to the above-mentioned parameters should also be routinely provided to compost users, when appropriate.

Issuing qualitative data only as it

pertains to trace elements/heavy metals can avoid the overkill an all-inclusive chemical analysis may create. A quality assurance statement is also offered in its place.

For example, "Our product meets the federal EPA's definition for an exceptional quality product." Or, "Our product is approved for un-

limited distribution and therefore can be used on..." Data outlining the content of these specific elements should be made available upon request, and presented in a usable form. This data may be necessary to help specific end users adjust their fertilization programs.

(continued on page 94)

TRACE ELEMENT/HEAVY METAL CONTENT OF VARIOUS PRODUCTS (ppm or mg/km)

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Chromium	1200	20	6.8	320	200	17.8
Copper	1500	1440	17	5.9	10	19.4
Lead	300	Not Tested	110	5.6	50	16.4
Mercury	17	Not Tested	Not Tested	0.10	Not Tested	0.10
Molybdenum	Not Applicable	20	15	7	Not Tested	2
Nickel	420	4	17	303	150	18.9
Selenium	36	20	Not Tested	Not Tested	Not Tested	Not Tested
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* Analysis pertaining to one specific product, not indicative of all similar products.

Table 1.

Source: Robert O'Dette, Environmental Waste Recycling Inc.

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Early Demand Sparks Seed Sales

Overall reports indicate a healthy turf seed market.

While most species showed slightly below average yields, growers anticipate adequate supply of common types. Elite varieties may fall short, however.

By Cathy Hoehn

A COLLECTIVE sigh of relief likely resounded throughout the Pacific Northwest as turf growers prepared for this year's crop harvesting. The hot, dry July—ideal harvesting weather—promised quicker harvest, early shipping, higher yields of a few early-harvest crops and generally less headache.

Mix that with a mild winter and drier than normal May, however, and yield reports bounce like a bad check across the board.

"This year has been extremely dry. That's good for some species, not for others. It depends on what part of the valley you're in, on what kind of soil conditions you have," said Doug Pope, a spokesman for E.F. Burlingham, Forest Grove, Ore. "The south valley (in Oregon) had a little bit harder time than the north valley."

"Last year it just rained and rained. It was amazing, the beating things took and yet turned out pretty well," said Bob Richardson, vice

president and general manager of Great Western, a subsidiary of Lofts Seed in Albany, Ore. "This year I think we're poised to have the supply situation pretty close to demand across the board. I think the Oregon grass seed industry is pretty upbeat and positive."

Richardson believes the bol-

stered national economy will spark overall demand this year. "When people have money to burn they spend it on their lawns, play a little golf. When the economy is struggling, however, the last thing they worry about is their lawns," he said.

Most 1994 turf seed crops showed slightly below average

yields. Growers anticipate adequate supply of common types but a shortfall on elite varieties. Prices overall should range from lower than average to average, with exceptions in elite varieties. Healthy sales are expected through fall based on strong early demand.

Overwhelmingly, growers and seed producers say an extensive surplus of Canadian creeping red fescue could drive down not only fine fescue prices, but perennial ryegrass and tall fescue prices as well. Their reasoning is that companies will replace the latter species with low-priced creeping fescue in seed mixes.

While original predictions showed Canadian red fescue crops would yield a record-breaking 80 million pounds of seed, that estimate dropped to 60 million pounds as yield reports trickled in. But considering an average crop yields about 35 million pounds, even the

(continued on page 38)



Weather conditions were ideal for this year's harvest. Photo: Jacklin Seed.



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Seed Harvest

(continued from page 36)

lower sum appears a heady figure.

"The Canadian crops have driven the market right through the floor," said Dennis Combs, vice president of Fine Lawn Research, Lake Oswego, Ore. "We'll have the lowest prices I've seen since 1964 or '65."

"We'll see low prices on common types due to the large Canadian crops, even though U.S. yields were generally down," concurred Mike Baker, general manager for Pennington Seed, Forest Grove, Ore. "U.S. yields appear not quite as high as originally expected. But there will be heavy usage."

Reports indicate low to average yields for perennial ryegrass. Two trains of thought exist regarding its price, according to Kevin Turner, manager of seed production and the research program at O.M. Scott & Sons, Marysville, Ohio. "A lot of people think price is just about where it's supposed to be. I personally think that as we get into the market a little farther, people will realize there's not a lot of perennial



ryegrass available, and we're going to see the price go up — maybe a nickel over the next four or five months," he said. "Worldwide, there are shorter crops than there were a year ago, yet pricing is about where it was a year ago. Time will tell which viewpoint is correct."

Although tall fescue yields were down (up to 40 percent below average), lack of foreign varieties on the U.S. market will help balance supply. Crops in Australia and New Zealand showed poor yields as well, so those countries will import rather

than export. That's good news for U.S. seed growers who will sell more product, but end users may see rising prices by spring.

"Right now companies are charging very little for their tall fescue. If we have the usage here like we had last year, obviously we won't have enough seed. The way we ration seed affects price," Combs said. "I doubt we'll see a price increase in the fall. But if we have a good spring, I do foresee higher prices in tall fescue."

Oversupply of tall fescue has

Yields depend largely on crop age, location and maintenance. Photo: Seed Research of Oregon.


dwindled and reports show there could actually be short supply.

The word on bluegrass is...spotty. Yields were all over the board, depending mainly on age and location of the crops. Common bluegrass yields appeared average, so prices will likely be "considerably down," according to Scott Harer, sales and marketing representative for Advanta Seed West, Albany, Ore. Proprietary yields were reported down, with the exception of Jacklin Seed's, which saw high proprietary yields and soft prices.

Overall, common and "low-end proprietary" bluegrass may produce adequate supply to meet demand.

Presented below are seed yield reports for various products. This is not an all-inclusive list of producers or varieties but a representation of the 1994 harvest.

Advanta Seed West, Albany, Ore., reported average yield for perennial ryegrass and expected prices



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to maintain their current level. Annual ryegrass prices should drop to "more normal levels," said Harer. "They might not come down to what they were three to four years ago, but they will probably come down about 20 cents."

In chewings fescues, "We don't see a lot of movement in price. We expect that to remain stable. It was an average crop," Harer said.

Common bluegrass crops showed average yield, while proprietary yields dropped slightly below average. "Bluegrass was spotty. On the whole it was very average," said Harer.

Advanta Seed plans to offer limited quantities of its new high-endophyte perennial ryegrass in 1995, as well as very limited quantities of its new, fast-germinating hard fescue this year.

Barenbrug, Tangent, Ore. Annual ryegrass yields were up; tall fescues and perennial ryegrasses were down, according to Tom Peters, national sales manager. "I haven't heard anybody saying turf-type tall fescues and perennial ryegrasses were heavy yielders. It doesn't look to me like we'll have a tremendous amount of seed available. And I know our prices have been down the last couple of years because of intense competition. With shorter yields and less seed to go around, I certainly hope we get the price structure back to a healthy level," he said.

Barenbrug is offering a dark-green Kentucky bluegrass that shows early spring green up, fine leaf texture and plant density, as well as a new dwarf-like, turf-type tall fescue showing good rooting ability.

Cascade International, Aumsville, Ore. Perennial ryegrass supply is strong but bluegrass might run short, according to Irv Jacobs, president. "Perennial ryegrass yields have increased 5 percent over the last 10 years. This will be a record year," he said.

In other species, Jacobs reported that tall fescues showed below average and below expected yields. Supply will be down, largely due to strong demand last fall and spring and to declining acreage. Price has increased between 25 percent and 40 percent in the last three months. Usage has been up particularly in North Carolina and Virginia, he said.

E.F. Burlingham & Sons, Forest Grove, Ore. Pope appeared fairly optimistic about the overall harvest. "We had an earlier harvest this year than last. That's very positive. We started shipping much earlier. There seemed to be very good early demand. If we can get good weather through the fall, I think we'll have an excellent end of the season," he said.

Reports showed below average tall fescue crops. A carryover from previous years balances the supply, however.

Perennial ryegrass showed average yields. "The acreage was about the same, however, so it will be in ample supply," Pope said. He predicted prices will remain relatively stable.

New fields of fine fescues fared extremely well, but "the old fields — two years or older — were below average. In proprietary we'll see

relatively the same price levels we saw last year," Pope said.

E.F. Burlingham is releasing two tall fescues and two perennial ryegrass varieties, as well as an elite Kentucky bluegrass.

Fine Lawn Research, Lake Oswego, Ore., reported below-average perennial ryegrass yields. With the absence of imported perennial ryegrass on the U.S. market, total supply is down about 20 percent from last year, according to Combs.

Total supply of tall fescue, including Kentucky 31 grown in Missouri, is about 225 million pounds, down from 255 million pounds last

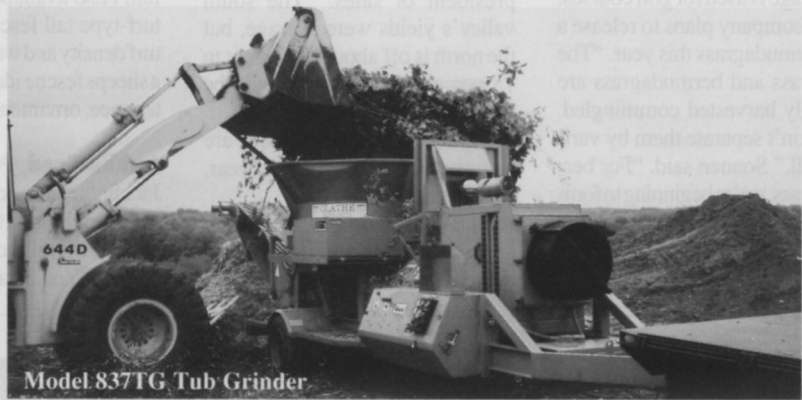
year. "We use these figures to determine how much seed to produce, and how much to charge for it," explained Combs. "It's a lot of paper work and guess work."

Fine Lawn reported harvesting about 50 percent more common bluegrass than last year, driving down price.

Supply of annual ryegrasses should equal last year's, according to Combs.

Green Seed, Woodburn, Ore., headquartered in Atlanta. "The big problem was the Missouri crop of Kentucky 31," said Rod Sonnen, northwest manager, explaining why tall fescue prices

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probably won't increase this year. "That market was probably pretty static. So even though we're short of seed here, we may not have a price increase. There's some carryover seed around too.

"One of the good things about this — being a little bit short," he noted, "is we may get carryover odds-and-ends and older varieties cleaned up and out of the way."

Word is there will be increased plantings of turf-type tall fescue for production next year. "A lot of older varieties have gone out of production," he said.

Green Seed's bermudagrass in Arizona fared well overall. The majority of its bermudagrass is spread on homeowner lawns, although a percentage is used for golf courses.

The company plans to release a new bermudagrass this year. "The bahiagrass and bermudagrass are generally harvested commingled. They don't separate them by variety at all," Sonnen said. "For bermudagrass, we're beginning to form and market specific varieties. Some do better under certain conditions than others."

International Seed, Halsey, Ore. The key difference in how well a perennial ryegrass crop fared is location. For instance, early-growing perennial ryegrass in the north valley fared better than average, but mid- to late-growing crops were

as Europe's," Dozler said.

Turf-type tall fescue showed slightly below average yields in the south valley, he said. "Acres were down from last year. Oversupplies are diminishing."

International Seed plans to re-

"We're seeing 400 to 500 pounds per acre crops (of Kentucky bluegrass) coming in. Acreage is about normal."

down. Overall, "it was an average/minus crop," said Brad Dozler, vice president of sales. "The south valley's yields were average, but the north is off about 10 percent to 15 percent. But prices should be stable overall."

Kentucky bluegrass prices are about half what they were last year, Dozler said.

Chewings and creeper yields are down overall. "And prices are down, due to Canada's oversupply, as well

lease one common and one elite variety of perennial ryegrass this fall. Also available this year are a turf-type tall fescue, which offers turf density and wear tolerance, and a sheeps fescue ideal for low-maintenance, ornamental lawns.

Jacklin Seed, Post Falls, Idaho. Jacklin's Kentucky bluegrass crops came in about 10 percent below average overall, according to Glenn Jacklin. "You're talking 600 pounds

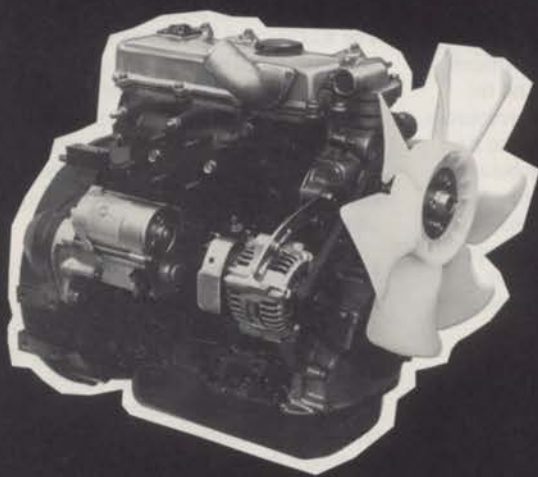
per acre is normal. We're seeing a lot of 400 to 500 pounds per acre crops coming in right now. Acreage is about normal. Proprietary crops seem to be coming in real well. Good quality seed. Proprietary is looking real good under irrigation," he said.

Bluegrass prices appear depressed "because there wasn't a lot of movement of seed this spring," Jacklin said. "And, competing species with surpluses depress bluegrass prices as well."

Jacklin Seed is geared to release three Kentucky high-endophyte bluegrass varieties showing dark green color, high density and medium fine texture, and a uniform, seed-propagated zoysiagrass variety with medium-dark green color, medium density and medium-wide leaf texture under turf conditions.

LESCO, Rocky River, Ohio. Tall fescues ran 20 percent to 40 percent below average yields, according to Art Wick, vice president of seed research and development. Fine fescue crops appeared under greater

(continued on page 42)



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Seed Harvest

(continued from page 40)

disease stress than in recent years and resulted in decreased yields. Perennial ryegrass came in 10 percent to 20 percent below average.

Oregon's Madras area, east of the Cascade Mountains, where Kentucky bluegrass and *Poa trivialis* are produced, appeared on line for average crops. Acreage of Kentucky bluegrass increased over last year.

LESCO's new varieties included two Kentucky bluegrasses: a dark green, low-growing variety showing disease resistance and color retention, and another variety promising sod-forming characteristics and moderate green color. The company's offerings also include a new, endophyte-enhanced chewing fescue and fine textured perennial ryegrass.

Lofts Seed/Great Western, Bound Brook, N.J./Albany, Ore. Tall fescue yields dipped as much as 35 percent below average, according to Richardson.

JACKLIN FOUNDER LEAVES SEED LEGACY

Spokane, Wash. — Arden Jacklin, one of the original founders of Jacklin Seed Co., Post Falls, Idaho, passed away. Jacklin was 82.

Jacklin, along with his father, brothers and a cousin, started Jacklin Seed Co. in 1935. He served as president from 1941 to 1985.

After stepping aside as president and general manager, Jacklin became director emeritus of the research program and continued to oversee research, visiting the office regularly as his health permitted.

Jacklin worked with Dr. Funk of Rutgers University in the release of Glade, which remains Jacklin Seed Co.'s most popular Kentucky bluegrass variety.

Born in Waupaca Wis., Jacklin received a bachelor of science degree in agronomy from Washington State College in 1933.

Jacklin is survived by his wife Stella, sons, Don, Doyle and Duane, daughter Ardith Bryan, 11 grandchildren and eight great-grandchildren.



Arden Jacklin

Perennial ryegrass yielded slightly below par. The perennial ryegrass market remains competitive, however, especially for golf course overseeding.

Bentgrass, fine fescue and hard fescue yields ended on target, said Richardson. Similarly, bluegrasses seemed "about dead average, I'd say. There's been a lot less stressful conditions this year," he noted.

Prices may become a little more

competitive for fine and hard fescues, again due to Canada's surplus. "It's coming on the market at very cheap prices. It's a function of a huge crop plus a 30 cent advantage on the exchange rate," said Richardson.

Common bluegrass prices appear to be down considerably. "That is reflected a little bit in some elite varieties. In general, I think those prices will go up 10 to 15 percent."

Lofts Seed offers a moderately low-growing Kentucky bluegrass whose claim to fame is good wear tolerance and its recuperative ability.

O.M. Scott & Sons, Marysville, Ohio. Turner's overall forecast calls for higher prices due to low yields across the board, except for common bluegrass and fine fescue. "Right now, an awful lot depends

(continued on page 44)

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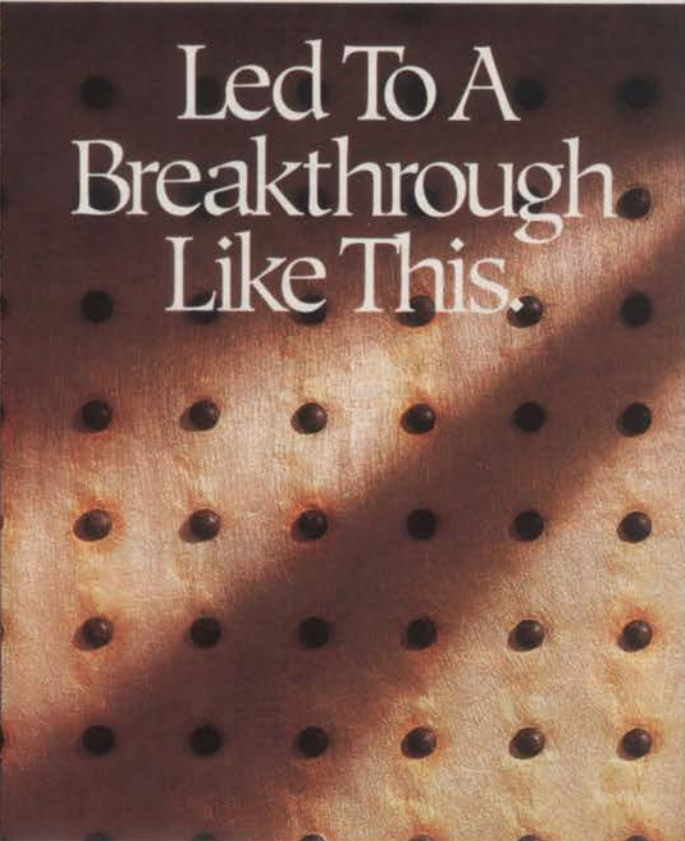
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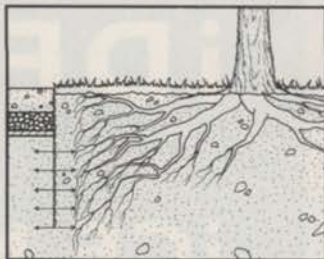


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Seed Harvest

(continued from page 42)

on demand. I would expect limited supply to result as prices go up a little, with Canadian creeper exerting moderate influence on the whole thing."

Turner reported perennial ryegrass yields down 20 percent to 30 percent. "It was a pretty dry year. That impacted older fields more than younger fields," he said. "With tall fescue, it's the same situation. Yields were down 20 to 30 percent, maybe a little more." Prices for tall fescue may be slightly soft, he predicted.

Common bluegrass crops grown in the expansive dryland area of Eastern Washington came in much better than recent years, he said. "And it was probably just an average crop. But compared to other years, there's a lot better availability — mostly common types."

O.M. Scott & Sons markets most of its seed to retail. This year's offerings of new varieties include a hard fescue combining good color and high density, a chewing fescue showing high endophyte lev-

els, a tall fescue and a few Kentucky bluegrass varieties.

Olsen-Fennel Seeds, Salem, Ore. Jerry Hall, director of research, said acreage was up but lower spring

see a high price. There's no carry-over there so we won't meet demand. We could run in short supply if we have a good spring. The bad thing is we'll be short next year too because you can't harvest it for

and poor yield for second-year crops," Baker said. Prices are not expected to increase in the short-term but may creep up in spring. Adequate carryover should keep overall supplies intact.

Oregon fescue crops had poor showing, "probably just a little under average," Baker noted. Acreage was "down to fairly steady. The crop was not that large."

Pennington Seed plans to offer a new dwarf-type, lower-growing tall fescue for Southeastern regions. The variety will be available in spring. New for '94 are two perennial ryegrass varieties that appear lower growing, dark green and highly endophytic.

Pickseed West, Tangent, Ore., noted below average yields and firming prices for tall fescues, and fair yield and slightly lower prices for perennial ryegrass.

"It's really hard to judge," said David Friesen, marketing representative. "We're at the mercy of weather, market conditions, etc. All we can do is give best our guesstimate as far

(continued on page 46)

"We're at the mercy of weather, market conditions, etc. All we can do is give our best guesstimate based on past usage."

moisture hurt early perennial ryegrass crops. Late-growing crops under irrigation fared better. "Prices should strengthen. Right now, we're about even. We have about the same supply as last year. Proprietary crops are sold out, however. Prices are staying down due to intense competition. They'll move up in spring, maybe sooner," he said.

Tall fescue yields were down 30 percent to 40 percent, Hall said. Total production was down 50 percent from previous years. "We'll

one year after you plant it."

Olsen-Fennel Seeds plans to release two new perennial ryegrass varieties and three tall fescues this fall.

Pennington Seed, Lebanon, Ore. "Overall, we're quite pleased with yields this year," said Baker. "Annual and perennial ryegrass yields looked good. Worldwide production was down, which increases purchases of U.S. seed."

In tall fescues, "we're seeing some good yield for first-year crops,

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Seed Harvest

(continued from page 44)

as past usage, and go by that."

Bluegrass yields looked slightly short on some unique varieties but Friesen expects demand to remain strong.

Fine fescues will see lower prices for common and proprietary types. Yields were fairly strong, he said. Hard and chewings fescue prices should drop slightly but the species should remain in adequate supply.

Winter damage in the Northeast and upper Midwest created a need for turf seed in those areas, he said. "There's been summer damage too. Indications are this will be a real strong year."

Pickseed offers a new creeping bentgrass touted for its heat and drought tolerance, and a high-endophyte perennial ryegrass variety.

Seed Research of Oregon, Corvallis, Ore. "Harvest conditions were almost perfect," claimed Mike Robinson, president. "Oregon is still in a drought so yields were kind of spotty," he said.

Perennial ryegrass yielded 30 percent to 40 percent below average. Last year's wet summer and dry fall weakened Oregon's stands of tall fescue, which also yielded 30 percent to 40 percent below the norm.

Fine fescues, chewings, creepings and hard fescues fared "probably close to normal,"

Robinson said. "Kentucky bluegrass was very spotty. In some areas, yields were down, in others they were normal." Proprietaries were down because last year's fields were too wet for the required field burning, he said.

Creeping bentgrass yields also suffered due to extremely high temperatures.

Seed Research has tested some zoysiagrass in Florida crops, which didn't fare well due to poor monitoring. Robinson is considering moving zoysiagrass production to Georgia or another warm-season region, and growing bermudagrass in Arizona.

Turf Merchants, Hubbard, Ore. Bluegrass rallied in late July as grower resistance to selling at low levels put a crimp in supply. Erratic yields in the various production areas and the impression that the bluegrass prices had dropped too low led to some price jumps. "We expect things to calm down and remain close to this level for the rest of the fall season," said Steve Tubbs, general manager.

At press time, price for certified proprietaries ranged from \$1 a pound wholesale to \$2.80 a pound. "This will allow some newer varietal entrants into the field to gain market share at the expense of some old standards which are seemingly overpriced," Tubbs said.

Early reports showed that 100-plus degree temperatures damaged highland bentgrass fields,

which could raise prices.

Overall, yields ended up less generous than originally anticipated, while increased demand at the lower levels helped sales, according to Tubbs.

Turf Merchants offers a new creeping bentgrass for overseeding dormant bermudagrass in the transition and warm-season zone.

Turf-Seed Inc., Hubbard, Ore. Tall fescue yields fell significantly from last year's above-normal crop, particularly on older fields, according to John Kirsch, production supervisor. "I think the dry fall was a significant factor in tall fescue. Also, ryegrass and tall fescue suffered moisture stress this spring. I think those are the major factors," he said.

Proprietary fine fescue yields didn't bode well either, said Charles Mitchell, field manager. "Perennial ryegrass wasn't big at all. In terms of yield, the early fall and lack of moisture were the influencing factors. If the burned fields don't grow back right away, you can bet there will be a short yield. They don't develop enough."

Turf-Seed Inc. offers two new dwarf perennial ryegrass varieties, as well as a lower-growing tall fescue noted for its adaptability and high yields. Its Kentucky bluegrass offering includes a medium, dark-green dwarf variety. ■

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

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USE READER SERVICE #58

'95 Truck Preview: What's New, What's Hot

The '95 fleet of trucks rolling off assembly lines highlight safety and additional options, according to manufacturers. Contractors say dependability and reliability are the main features they seek.

By Kevin Tanzillo

WITH 1995 TRUCKS available in just a few weeks, contractors are readying their shopping lists, figuring out how many trucks they exhausted this year and need to replace.

They won't find big changes in the offerings of major manufacturers — mainly minor refinements in existing trucks, a few more options

and some improved safety features.

The safety features are part of a long-term trend, driven by government requirements, that will make the truck used on the job more closely resemble the cars that contractors drive off the job.

Driver side airbags are showing up in the trucks this year, ahead of government mandates for the 1997

and 1998 model years that also include side door beams and automatic slider seat belts. Headlights will be lit whenever the truck is running in one manufacturer's line, another safety feature that has been kicked around as a possible federal requirement.

No contractor buys a truck just for its safety features, of course.

Companies such as Bizon Landscape Maintenance in Wilsonville, Ore., are looking for dependability and durability.

Bizon gets all the service it can out of its pickups. Co-owner Phil Bizon said the trucks don't get many miles put on them daily, but they last a long time despite heavy use, and the miles eventually add up.

"We've had good luck with our trucks," Bizon said. "We have S-10s that have more than 200,000 miles on them and we haven't had to touch them except to put a starter and alternator on them. I have one of them approaching 250,000 miles."

Bizon said his company spends about \$60,000 a year for four pickup trucks, and plans to continue that buying pattern this year. They buy white trucks, using them in their commercial division, and paint the residential division trucks yellow.

They customize the trucks themselves, removing the truck bed and turning them into flatbeds, which he said is more efficient for dumping grass.

The fleet of 27 vehicles is almost all Chevy, with a few Fords thrown in, the result of a "good deal that we couldn't pass up," Bizon said.

"We generally buy pickups, 3/4-quarter ton heavy to 1-ton sizes," he added. "We're now looking at dual cabs to make it more comfortable for our crews."

Bizon said he'll order the trucks this fall for delivery by Feb. 1, which gives his people time to paint and customize them in time for the March 1 start of their season.

In his part of Oregon, there isn't a need for snowplowing in the off season, but Bizon Landscape does contract out for private driveway and road sanding, putting spreaders on the backs of their trucks for that wintertime task.

The quality of American-made trucks and the availability of replacement parts is important to Bizon. "For the price and the quality, I'm real happy," he said.

Except for three new trucks to accommodate a change in average crew size, Gibbs Landscape Co. in Smyrna, Ga., plans to make its current fleet do the job for another year.



Gibbs Landscape Co. uses this turbo diesel truck to accommodate its downsized crews.

(continued on page 52)



**" We compete for business,
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In Atlanta, a city known for its beautiful landscaping a city sprucing up for the '96 Summer Olympics, Isuzu Truck is the truck of choice among landscape contractors.

"I first bought an Isuzu in 1986; within 6 months I bought another one. Ever since, I've averaged one or two new Isuzus per year," says Greg Coleman, owner of Vision Scapes.

According to Andrew Baldy, vice president of Oakwood A.P.C.I., half his company's 20 trucks are Isuzus. "As we keep growing, we'll keep on buying Isuzu trucks. Reason being, we get longer life out of them. We also get better fuel mileage, easier maintenance, lower

upkeep and much better overall durability."

Ken Thomas, owner of Landscape Techniques says, "I didn't know what cargo room was until I got an Isuzu."

Adds Greg, "My mechanic loves it. He likes the tilt cab. And if you take an Isuzu in a cul-de-sac, you can almost do a figure eight"

Terry Walton of Greenscape just bought two new Isuzu trucks. "People I talked to had nothing but good things to say about the trucks."

Andrew sums it all up, "I will never go to another truck. And that's truth."

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USE READER SERVICE #64

Fleet Management

(continued from page 48)

Jeff Crawford, service manager, said a smaller-sized turbo diesel has been Gibbs' preferred truck for the last few years, and he expects to add three more for 1995. The big reason is because the company is downsizing crews to three workers rather than four or five, so they need a few additional trucks.

"We are using every spare vehicle we have. The reason for that is to keep costs down, because the market is so competitive," Crawford said.

The turbo diesel truck accommodates the smaller crews more readily, Crawford said, but the company also buys larger trucks as needed, depending on availability.

"We find it more efficient to run with smaller crews, so we can have more crews out working. In that case the smaller truck is more of an attractive buy," Crawford said.

Crawford expects to lay out about \$70,000 for three 11,000-pound turbo diesel trucks. His total budget for trucks for 1995 is \$93,000, and he hopes to buy a few small pickups



with the remainder of his budget.

"All of our equipment is very well maintained," Crawford insisted. "We will basically run them into the ground, until repair costs get out of hand. We use them to their fullest extent. With the diesel engines there is less maintenance and longer engine life. Initially, it's a few dollars more, but over the life of the truck it is worth it."

Crawford said durability is a significant factor, along with a "crew-friendly" design and ease of operation. The oldest turbo diesel he has is a 1989 model, and he expects another three years of service out of that truck.

Praising his trucks for lower maintenance costs and longer life, Crawford does say he'd like to see more horsepower.

Landscape contractors often desire customized trucks to meet specific service needs. Photo: Omaha Standard Inc.

At 126 horsepower on the diesel, he said, "it's almost underpowered."

A PAIR OF ONE-TONS. A pair of 1-ton trucks is on Larry Goss' shopping list for 1995.

Goss, owner and operator of Greenville Lawn in Greenville, Miss., is looking to spend about \$40,000 for the two trucks. This year, he spent almost that much on a pair of 1/2-ton pickup trucks, one with four-wheel drive.

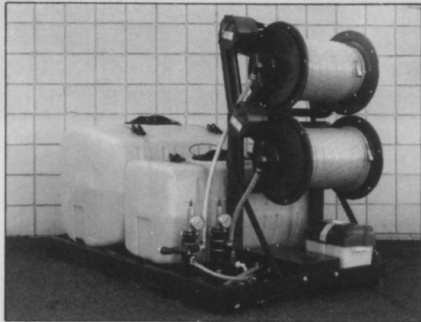
He typically buys Chevy pickup trucks, but said on the bigger trucks he "might get a Ford or Dodge with a decent engine in it." He said the bigger trucks will be "basic white" and he'll do any spray rig or other equipment outfitting himself.

"We look for longevity in a truck," Goss said, noting that he typically keeps a truck four to six years. His company follows the manufacturer's maintenance rec-

(continued on page 54)

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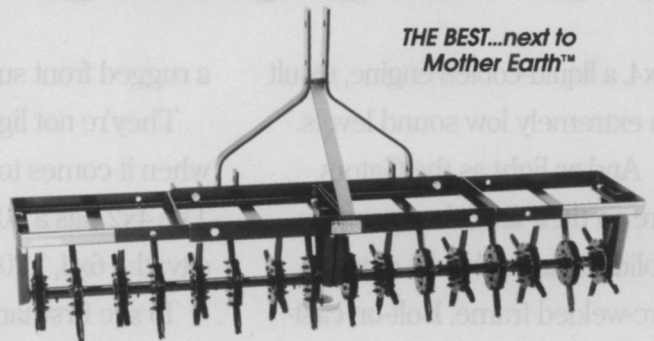
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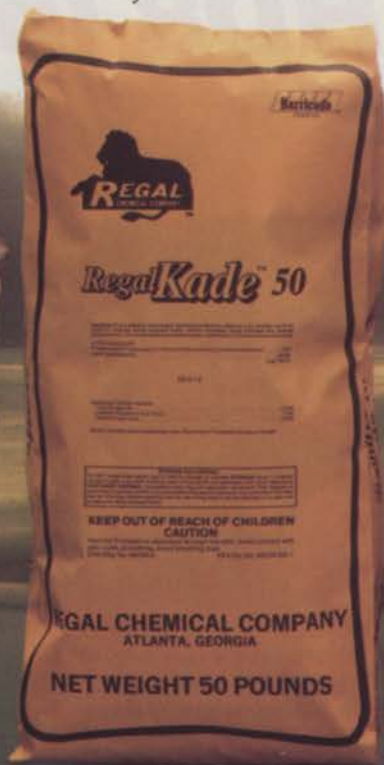
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Fleet Management

(continued from page 52)

ommendations, with work done on the vehicles every 3,000 miles.

Goss favors American-made trucks over foreign models, after a bad experience with a foreign-made vehicle, and one thing he wants to see is improved fuel mileage.

FULL ORDER. D.R. Church Landscape in Lombard, Ill., expects to order half a dozen 1995 trucks this fall, a mix of light- and heavy-duty trucks.

Dave Matthews, equipment and facilities manager, said buying plans aren't firm yet, but the general rule is to meet any increased production needs and to upgrade the fleet of 60 vehicles with replacement trucks.

D.R. Church Landscape used to run all of one particular brand in the light-duty category, but switched to another type four years ago. The company also sticks with one brand of heavier duty trucks, according to Matthews.

Durability is important, Matthews said, but much of his com-

pany's loyalty is due to top-notch dealer support.

"We are fortunate here to have dealers that take good care of you. Both dealers we use have service departments and mechanics who bend over backwards to get the trucks up as soon as possible, without a bunch of hassle."

D.R. Church keeps its light-duty trucks eight to 10 years and its 2-ton trucks about 12 years. Matthews credits that longevity to a good in-house preventive maintenance program.

Also, he added, the fleet generally doesn't rack up many miles because its mostly corporate customers are close by.

In his part of the country, Matthews said, corrosion is a problem and it is the one thing he would like to see improved in new models. If there's a rust protection secret, he said, "I wish someone would share it with me."

BACK HOME. Wayne Richards, chief operating officer of Cagwin & Dorward in Novato, Calif., said quality improvements by U.S. truck

manufacturers have led his company back to buying American.

"While we have purchased primarily foreign-made compact trucks, the quality improvements by (companies here) have led us back to buying American small trucks," Richards explained.

A typical year sees Cagwin & Dorward purchasing 10 to 15 trucks, at a cost of about \$350,000, and 1995 appears to be typical, as Richards said the landscape contracting company expects to buy two compact trucks, eight Fleetside and two specialty trucks, ordering them this fall in time for February delivery.

Richards believes in product loyalty. He stuck with one company's larger trucks for six years until a high rate of transmission failure and "poor front ends" caused him to switch two years ago.

Richards said Cagwin & Dorward gets about 10 years out of a typical vehicle, maintaining them aggressively, with preventive maintenance that exceeds manufacturers' recommendations.

"We've had three trucks on or-

der and can't get them," complained Ron Burley, landscape maintenance supervisor for Colorado Landscape Enterprises in Westminster, Colo.

"We bought heavy-duty 3/4-ton trucks, in the color we wanted, mint metallic green, to match our shirts."

Burley said the explanation he gets is that demand exceeds production capacity, but he finds that hard to swallow. Colorado Landscape bought 1994 Chevy trucks and had been promised July delivery, but Burley said in an August interview that "July has come and gone" and soon 1995 models will show up on dealers' lots.

He calls the experience frustrating, and said to get by, they rented two trucks, a Chevy and a Ford.

Chevrolet spokesman Steve Rossi, director of product information, confirmed what Burley has heard about demand exceeding Chevy's ability to produce.

"We are building to capacity," Rossi said. "If we had the production capacity and could make another 250,000 trucks, we could sell them. We will sell 1.4 million trucks

(continued on page 56)

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Fleet Management

(continued from page 54)

versus about 1 million cars next year. What we need to do is improve the efficiency of existing (manufacturing) plants."

Rossi detailed the changes in Chevrolet's 1995 models: First, the popular S Series pickups feature a driver's side airbag new for 1995, along with anti-lock brakes and a choice from among five suspension packages, tailored to the buyer's specific driving needs. The series consists of two- and four-wheel-drive models with a choice of either standard or extended cab.

Also, the S Series is one of the first General Motors vehicles with headlights that are lit whenever it is running, Rossi said. That practice has been standard in Canada for several years.

Other S Series innovations include improved automatic transmissions and transmission fluid that never needs replacement.

Stepping up from the S Series is the CK Series, ranging in payload from 2,000 pounds to 4,500 pounds. Models in the series are the 1500 half-ton truck, 2500 and 3500. New in this line is a less-cluttered instrument panel, new door panels and new seats.

Optional with bucket seats is a center-console workstation with a writing desk, map pockets and more, along with a pair of 12-volt "output ports" for cellular telephones or other equipment. The engines have been refined to make them quieter, Rossi said, and the CK Series also improved its transmissions and offers lifetime transmission fluid.

A crew cab is available in the 3500, along with a turbo diesel. Standard diesel engine is available in the 1500 and 2500 models.

Rossi noted that contractors may also be interested in the redesigned Astro minivan. The extended Astro, 10 inches longer than the 1994 standard version, will be the only size offered.

"It is a tough minivan that has great cargo capability," Rossi said. "Last year's optional engine, a 190-h.p. V6, is now the standard engine for 1995. That is 25 horsepower more than the base engine. You can go with a commercial version of this that is still a smaller van, with better gas mileage and other advantages."

A-FORDABLE. Ford Motor Co. for 1995 offers an improved diesel engine on its trucks over 8,500-pound GVW.

Woody Haines, assistant manager for Ford truck operations public affairs, said the manufacturer now has a 7.3-liter direct injection turbo-charged diesel engine. It comes with the F250 and F350 models and all versions of the F Super Duty.

"It is a state of the art diesel that offers 210 horsepower," Haines said, adding that it improves fuel economy, operating smoothness and engine life.

The new engine replaces an indirect injection



The Mitsubishi Mighty Mit totes a Reading Stake Body, which is ideal for hauling materials to and from job sites.

engine that was an interim step beyond naturally aspirated diesels. Haines noted that "This was certainly something our customers have said they wanted. We had naturally aspirated diesels for some years, and there was customer demand for higher horsepower and a turbocharged diesel."

There are also brake improvements for the F250, 350 and Super Duty, Haines added, but for other trucks, 1995 essentially will be a "carry-over" year.

Ford is offering a special High Series Eddie Bauer model on its F150 and 250 trucks for 1995. It is a "well-appointed" truck with two-tone Eddie Bauer paint scheme, color-keyed cab steps, styled front bumper, privacy glass on supercabs, deep dish aluminum wheels and tiedown hooks.

Haines deferred comment on production levels and pricing changes for 1995, saying the information won't be available until late September.

ISUZU STYLE. Isuzu's NPR low-cab forward diesel truck has a new look, with an aerodynamically styled cab it calls the "aerocube" available this fall.

The cab has an enlarged windshield and oversized one-piece side windows with lower front cutouts. The result is better visibility and a wider, unobstructed view of traffic, pedestrians and curbs. The low-cab forward design itself is said to decrease wind resistance and drag for better fuel mileage.

Inside, the cab has more head, shoulder and leg room and recontoured and repositioned seats, designed for more comfort. Offering wheelbases of 109, 132 and 150 inches, the new NPR models are available with GVW ratings of 11,050 and 14,250 pounds.

Other improvements include new front disc brake rotor and pad material, to improve brake durability, and improved rustproofing, thanks to increased galvanized areas and a new process to increase the zinc coating's thickness.

DODGE DUO. On Dodge's full-sized Ram pickup, four-wheel anti-lock brakes are available on the dual axle model, noted Alex Tsigidinos, Jeep and truck public relations manager.

(continued on page 58)

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Fleet Management

(continued from page 56)

Also, the bed of the truck was widened slightly, as was the rear opening. There is an extended cab available for 1995, with an extra 20 inches of cab space. It has a forward-facing bench seat and handles six passengers, Tsigdinos said.

"There is one change in the Cummins turbo diesel engine which we put in the 3/4- and 1-ton full-size pickup trucks," Tsigdinos said. "On the five-speed version of that engine we boosted the torque by 10 pound feet to 430, from 420. This maintained its class-leading torque. The horsepower stays the same at 175."

The Dodge Dakota mid-sized truck is a carryover from 1994, Tsigdinos added, but the full-sized Ram van now comes with a standard driver side airbag and four-wheel anti-lock brakes. Also, the across-the-board warranty now offers standard three-year, 36,000-mile bumper-to-bumper coverage. The exception to that is the turbo diesel model, which has seven-year, 100,000-mile coverage.

Total production for Ram trucks for 1995 should be about 300,000, Tsigdinos said. That's up about 70,000 from 1994, and that growth is due to anticipated production of the extended cab version.

MIGHTY MAX. Mitsubishi consolidated its truck line into a single vehicle, the Mighty Max half-ton pickup. It is a two-wheel-drive truck, and Mitsubishi eliminated the four-wheel-drive models as well as the extended cab option.

Joe Jacuzzi, production information and media relations manager, said Mitsubishi expects to sell about 12,000 of the trucks in the U.S. Prices are up about 9 percent on the standard transmission, 8 percent on the automatic, reflecting additional standard features as well as the lower value of the dollar against the Japanese yen.

New for 1995 in the Mighty Max are knit fabric seats, standard day/night rear-view mirror, single-disc CD player and an ignition key with a special code to foil unauthorized copying.

TUFLEX. At tank builder Tuflex, in Pompano Beach, Fla., company president Tom Sayward said simplicity will be the rule in new models.

"You'll see fewer moving parts,



Longevity and durability are two features contractors like in their trucks. Photo: Henderson Mfg.

which equals a more productive piece of equipment," Sayward said. "When designing spray trucks, don't design for the exception. Design for the basic use and add an auxiliary tank if needed.

"Some valving system designs require an engineer to figure out," Sayward continued. His solution is to add the auxiliary tank but avoid getting involved in the "what ifs" that lead to technological nightmares.

"You just know the valves will fail, or someone will apply the wrong product, or something else will break," he warned. Adding a 50- or 100-gallon auxiliary deck-mounted sprayer provides the added flexibility needed but also allows the option of taking the tank and sending it out on a light pickup for a spot-spray job rather than tying up a \$30,000 piece of equipment.

Sayward foresees no increase in equipment costs for 1995, barring an unforeseen jump in the cost of raw materials.

"We're holding the line on pricing. Everyone is. For sprayer and truck builders, it's just like the lawn care business," Sayward said. "We've been through three to five years of recession. That makes you produce more efficiently."

Sayward predicted sales of new equipment in 1995 will be 3 to 5 percent ahead of this year.

He noted a strong move toward fiberglass tanks and attributes that to fiberglass becoming more price-competitive relative to poly tanks.

"Poly tanks always will be cheaper," he conceded, "but it's now at the point where a buyer can spend a few extra dollars for the strength and quality of fiberglass and get a tougher container."

Tuflex has built tanks for 30 years, mounting them on GMC, Ford, Isuzu and Mitsubishi truck bodies.

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

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Snow Removal: A Specialty Service Or Necessary Evil?

Some contractors tag snow removal a lucrative, rewarding niche; others consider it a trying but necessary means for serving clients with a one-stop-shop point of view.

By Bob Gitlin



Snow removal can be a lucrative but trying add-on service. Photo: Melroe Co.

SNOWREMOVAL is becoming an add-on service enjoyed by a growing body of lawn and landscape maintenance professionals to generate income in the winter off-season.

It's often considered tedious work. But for some markets it's a sound way to gain entry into or add dimension to other grounds maintenance work.

Undertaking snow plowing and deicing is a natural fit for lawn and landscape maintenance professionals, according to Scott Egan, business manager at Byrne Brothers Landscaping, Essex, Mass.

"You're already halfway there as far as the equipment," he said. "You've got the trucks and other heavy-duty machinery necessary to plow. You also already have customers who, most likely, would be interested in removing snow as well as landscaping. Finally, snow removal provides an opportunity to keep year-round help."

Many different types of contractors — from construction to street cleaning — offer snow removal in the winter as their core business slows, said Mike Henline, attachment product representative at Melroe Co., Fargo, N.D. "They offer snow removal to offset their slow season. They have to come back with something else," he said.

Many manufacturers indicate it's difficult to break down their markets to determine the percentage of buyers that represent the lawn and landscape market. But, they concede, there is a natural tie-in.

"It depends on the city you're in," said Greg Richards, control product manager for LESCO, a Rocky River, Ohio, company which sells deicers. "But it's not a huge stretch to not only take care of the lawns chemically but come in and mow and trim and edge, and have an ornamental program where they can prune the ornamentals and mulch and spray them — and also remove snow."

SERVICE FUNDAMENTALS. In a 1993 market trend survey, *Lawn & Landscape Maintenance* readers

(continued on page 62)

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Winter Service

(continued from page 60)

indicated snow removal represents 2.7 percent of their businesses. Most companies offering the service say it's difficult to count on snow removal for income since the business fluctuates with the weather.

The volume of Byrne Brothers' snow removal business, for example, varies by season, and the company dedicates snowplows and crews to the service accordingly. The company handles all sizes of jobs. Many simple plowing jobs require a one-person operation; others, namely large maintenance contracts, call for large crews. Most jobs also entail tedious hand shoveling for clearing walkways.

Byrne Brothers offers 24-hour service for its strictly commercial maintenance clients. "If we have a contract that involves snow removal, and it's snowing hard at night and we're not going to be able to plow the next morning, we have to go out at night and plow," Egan said.

Marketing the service entails convincing existing clients of its viability.

A variety of tools, including attachments for tractors and loaders, make snow removal easier. Photo: Sweepster.

ity. "If it's something we think they'd be interested in, we suggest to the commercial property manager that we might be able to do a better job than the outfit they are using to remove snow."

Byrne Brothers emphasizes its commitment to using new equipment, despite the relatively high cost of their purchases. "We market from the aspect that, if we have the opportunity, we buy brand new equipment. We don't buy old machines and try to nickel and dime them together. If we do buy used, we make it brand new — put everything on it ourselves — thanks to our fine mechanic. We don't send out trucks that are prone to breaking during the job and get-



ting stuck out there. Customers like that assurance."

Byrne Brothers, as well as many other companies, often arrange subcontracting services when scheduling conflicts arise.

"We sub out some jobs," said Egan. "And we subcontract for other companies on occasion. If we have a large account in particular, that we need help with, we'll turn some of the work over to another company."

SLEEPLESS NIGHTS. Steve Hyland, president of Hyland Brothers Lawn and Tree Care, Fort Collins, Colo., regards snow removal as a necessary evil.

It's an unpredictable, headache-intensive business, he said. "Where we're located, you can never count on it. Sometimes it snows here, sometimes it doesn't. For budget reasons, I can't plan any income."

The services' labor-intensive nature also creates hiring difficul-



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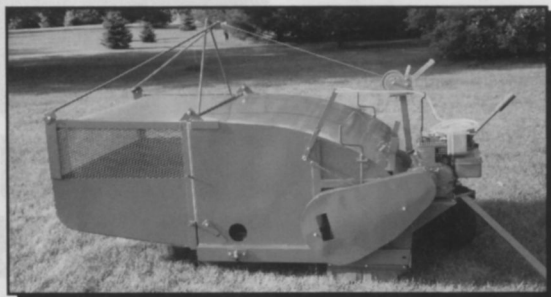
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ties, he added. "I have to somehow find the people to do the work. I have some people year round, but not enough. We do other things and wedrop everything when it snows."

Hyland Brothers runs seven snowplows and several Walker riding mowers with front-mount snowblowers. Like Byrne Brothers, the company offers a 24-hour snow removal service for a mostly commercial clientele. Its season runs from late October to about April 1.

The company owns 3/4-ton and 1-ton plow trucks. Most of the trucks have four-wheel drive, which increases wear and tear on the vehicles. "That simply means we rotate them more often than we'd like," Hyland said.

Replacing parts is common; replacing whole plows hasn't been a factor yet. "I've never replaced a plow," Hyland said, "but we totally tear apart the plow motor and the plow pump every season. I'll probably go through 10 percent of my plow pumps and plow motors during a season."

There would be no love lost if Hyland Brothers didn't offer snow

removal, but Hyland believes the opportunity for making money at the business is too ripe to ignore. "It's not that we are dying to do it so much as we find that most of our competition doesn't do it, and it's actually a door opener for us to many commercial properties.

"We don't have to offer the service, but it's very lucrative—when it snows. We probably charge more than most of our competitors."

In addition, some jobs specifi-

Hyland painted a rather grim picture for lawn and landscape maintenance contractors contemplating a foray into this category of winter work: expect sleep deprivation and a "sideline" fraught with ironies.

"It is easily the most stressful work I've ever done. If you run into a long, enduring snowstorm — a three- or four-day blizzard — your crews get no rest. Yet they have to be 110 percent alert. The potential for damaging something is im-

'If you run into a long, enduring snowstorm, your crews get no rest. Yet they have to be 110 percent alert.'

cally ask for snow removal to be part of the overall grounds maintenance service. "Sometimes the bid specs for the landscape maintenance include snow removal. We won't do the snow removal for a property that we don't also do the landscape maintenance on."

mense. It's the kind of thing that if you didn't feel like you had to do it, you wouldn't."

He added that insurance for snow removal crews is expensive—three times the normal liability insurance that applies to his crews that go out in the trucks to mow grass.

NATURAL TRANSITION. Meyer Snow Plow, Cleveland, Ohio, does not divide its customer base into specific categories, but "without a doubt" lawn and landscape maintenance contractors are building their share of the market, according to Jim Shula, Meyer's executive vice president.

"I know that because of the distributorship we have," Shula said. "Dealers are getting away from carrying plows, but our distributors offer them. They go to the places that need a winter business, and that's where they need the winter business: lawn care. We have a lot of distributors out there and they have subdistributors. It's those subs who are selling to all the lawn and garden people."

Meyer Snow Plow gears toward the small-end market by offering plows up to 10 feet wide. It also considers lawn and landscape contractors feasible targets for its products. "Those end customers buy the whole mounting in addition to the blade. It runs them anywhere between \$1,500 and \$1,800," Shula said. "Lawn and landscape con-

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tractors fit into that market. It's a natural transition for them. They need the business in the winter."

Melroe's Henline holds similar views. While lawn and landscape maintenance contractors don't nab a lion's share of Melroe's business, he said, they do represent "a fairly strong part of the market."

Melroe manufactures snowplow attachments for its skid steer loaders. "Some contractors may already have skid steers," Henline said. "A lot of the landscaping jobs require smaller equipment. You can't get a large piece of equipment around a house or building. That's where we come in."

Skid steer loaders are generally compact, weighing between 3,000 and 8,000 pounds. Many compact loaders, including Melroe's, offer several versatile attachments.

"The main attachment we make for snow removal is a line of buckets," Henline said. "Other manufacturers supply us with all the other attachments that we offer for use on our machines." Melroe's attachments include an angle blade, a snow blade and a hydraulic, front-mount snow blower.

OTHER MARKETS. Buckets are used in northern-most regions where snow is so abundant it must be carted away rather than stockpiled.

"We do a lot of bucket business," said Henline. "We make a larger-volume bucket they can put on the front. They have to haul the snow away because there's no room to pile it in some places. So they use their dump trucks and get the snow to remote sites."

Deicing is another important segment of snow removal service. LESCO's Richards explained that his company offers deicers that it gets from another supplier.

"It's sort of like rock salt but we don't have all the chloride and the sodium," he said.

A lot of applicators tend to scatter granular fertilizer in lieu of a proper, dedicated deicer, Richards added. "We offer a couple different compounds. A lot of people use 40:0:0, straight urea; that'll melt ice down to a certain temperature. But there are other compounds that keep the

ice melted at a lower temperature. That's the specialty we sell."

Matt Lederer, marketing representative at Koos Inc., Kenosha, Wis., which offers deicers (among other products), said that lawn and landscape professionals constitute a modest market share with his company.

"As urban centers grow, more outsourcing is taking place where the property manager lets someone else take care of snow removal. Here's an opportunity for lawn care guys. The way it was last year, a harsh winter caused there to be more outside contractors and individuals clearing their sidewalks and driveways."

Lederer ranked commercial (janitorial supplies), food service and retail as his most frequent customers for deicing supplies. He said lawn and landscape professionals likely have a difficult time competing in snow removal with other types of contractors. "They can't compare volumewise with a janitor who is responsible for taking care of everything else," he said.

From Lederer's standpoint, lawn and landscape professionals appear to take on mostly residential snowplowing and deicing, as well as some commercial jobs. "A lot of them also try to do mall parking lots and places like that," he said.

Deicer suppliers try to elbow out their competition by offering special products. Koos offers not only a range of sizes but "one unique size, a 2,000 pound bulk tote," Lederer said. This product, similar to what people are used to seeing in the agricultural business, cuts down on packaging expenses, he said.

Lederer advises customers to be very particular about the deicers they purchase. "Number one: keep costs down by buying economy sizes," he said. "Two, use products that have features like refreezing resistance, and that will melt down to the low temperatures customers want."

"Also, some people think you don't need an ice melter. Wrong. Don't just go in with a plow. There's a secondary sale you can make by putting down an ice melter — which is doing the job right." ■

The author is Contributing Editor to Lawn & Landscape Maintenance magazine.

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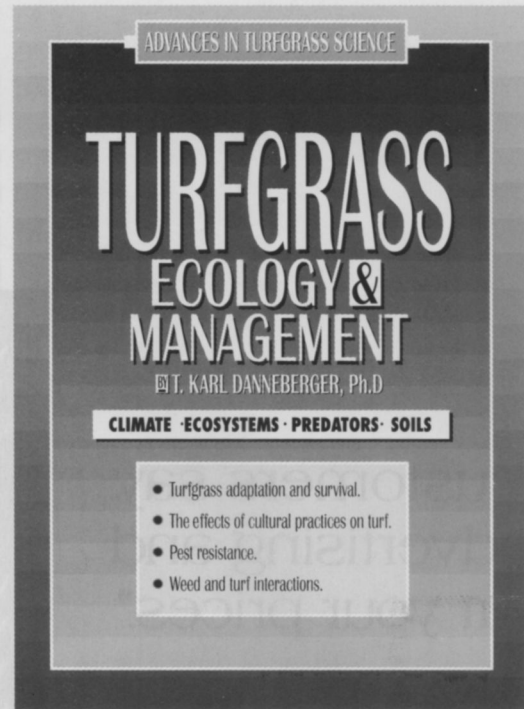
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IN BASEBALL, one of the most underrated positions is the utility infielder. A player who can play several positions well, will often find himself a valuable member of a team. And in many cases, it is his versatility that enables him to make a major league roster.

Likewise, the versatility of loaders make them valuable additions to lawn and landscape maintenance professionals' equipment arsenal. In fact, many manufacturers credit loaders' relatively newfound versatility with the explosion of loader sales during the past 15 or so years.

According to a *Lawn & Landscape Maintenance* survey, Melroe's Bobcat loader is the most

The versatility of loaders make them a valuable addition to a landscape contractor's equipment arsenal, particularly due to the range of their attachments.

By David Clancy

frequently purchased vehicle for landscape use, followed by Ford New Holland and J.I. Case. Grad-

ing, loading, planting and snow removal were listed as the most common uses. Purchase influences,

in order, included product quality, price, ease of maintenance, productivity, product support and product design.

Although many people use the term skid steer loader to encompass all loaders, there are, in fact, several different types. The most common of these is the wheel loader.

The main difference between wheel loaders and skid steer loaders is in how the machines turn. Wheel loaders steer similar to how automobiles turn—all four wheels rotate in the same direction. Skid steer loaders, on the other hand, rely on counter rotation of wheels to turn, with the lighter end "skidding around the heavier end; hence



Hard-working skid steer loaders perform a wide variety of specialized landscaping tasks from grading to snow removal.

the name "skid steer."

While originally designed to move dirt, loaders have evolved primarily through use of attachments now offered for almost every application. For instance, loaders can be fitted with attachments for raking, trenching, digging post holes, snow removal, sweeping, grading and digging.

And that is just at the job site. Contractors also can fit their loaders with forks to move pallets of sod, mulch and other products back at their home base.

"Attachments have become very popular in the past few years," said Kelly Moore, product manager of skid loaders and attachments for The Gehl Co., West Bend, Wis. "We offer more than 25 and more will probably be coming out with several in the next few months."

Moore said most attachments are designed to fit several different



Improved hydraulic systems make new attachments more productive.

loader sizes as a means to maximize equipment capabilities. "That is very important," he said, "and part of the reason for expanded use of loaders."

According to Moore, one of Gehl's most popular attachments is a pallet fork, which enables contractors to use the equipment at their facilities as well as at job sites.

Mustang Manufacturing Co., Owatonna, Minn., on the other hand, is having success with its backhoe attachment, and augers are gaining popularity, according to product coordinator Monte Mowry.

"Tillers are another attachment that is growing in popularity," said Mowry. "And they were not popular in the past at all."

HYDRAULICS. Mowry notes that many attachments now offer hydraulic capabilities. "More attachments are being run off the hydraulic systems in the loaders than ever before," he said. "In the past, contractors had to purchase separate equipment."

"I think the driving factor there is the improved hydraulic flow from the loaders. For years the skid steer

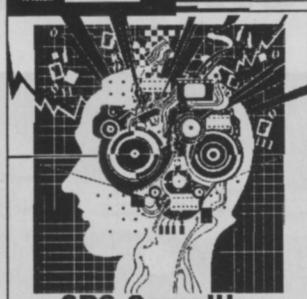
had a 14 gallons per minute flow, and these attachments weren't really that productive. Now with the higher flow on many of the machines, these attachments are much more productive."

Mowry said Mustang's loaders have a hydraulic flow rate of 18 gallons a minute, which is adequate for use with hydraulic attachments such as trenchers, power rakes and tree spades. While hydraulic attachments take a few minutes longer to change than non-hydraulic attachments, they still are considered "quick change," which is key for most contractors.

"One of the greatest selling features of the attachments is the ease in which they can be changed," said Lynn Roesler, skid steer product manager, Fargo, N.D.-based Melroe Co., which manufactures the Bobcat line. "Most attachments can be changed by one person in

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less than a minute," he said. "There are two levers to unlock which will allow the operator to drop one attachment and hook up to another one. "After that, just relock those levers and the system will be ready to go."

Hydraulic attachments require the operator to disconnect and connect fluid hoses, so they take a little longer to change. "In the case of a backhoe attachment you are probably looking at a couple of minutes," he said.

Most loader manufacturers introduce several attachments a year. Many of those offerings are inspired by customers who built similar contraptions to meet their own needs.

Rich Lemcke of RMLandscape Industries, Inc., Hilton, N.Y., built a "nose bucket" attachment fabricated for digging shrubs in his company's nursery. "It is a U-shaped bucket that attaches to one of our loaders," he said. "We built it several years ago as a means of saving time, and now there are similar ones on the market."

Lemcke doesn't plan to buy a

manufacturer's rendition of his company-built attachment any time soon. "Some might not think (our attachment) saves time compared to the modern equipment they have out there nowadays, but the time it would take for me to train our 45-person operation to get used to a tree spade to replace that would be enormous."

Roesler conceded manufacturers benefit from watching what end

'Many of the attachments we offer come about through customer requests. We ask them what would make their job easier.'

users are using. "We introduced a tiller last fall which we designed after seeing some California landscapers had outfitted their tillers with hitches and hydraulics and

mounted them on their (skid steer loaders).

"We saw that and realized that tillers would sell so we came out with one," he said. "In fact, many of the attachments we offer come about through customer requests. We ask them what attachments would make their jobs easier. We then look into the feasibility and marketability of the products."

Russell Adsit, general manager of Landscaping and Design, Memphis, Tenn., also uses homemade attachments. "We had a welding shop make a ball handler for us to handle large trees," he said. "There was nothing on the market when we needed it, so we had it built."

Despite success with his own attachment, Adsit, who's been using loaders for 12 years, claims to be leery of "quick change" products on the market. "Attachment changing is always a challenge," he said. "Sure everything works well at first,

but over time the bolts don't line up exactly and it becomes increasingly difficult to change from attachment to attachment."

And, he added, it doesn't have entirely to do with the equipment. "It depends on how cold it is outside and who is doing the changing. The process can take an hour or it can take 15 minutes. It also makes a difference as the equipment gets older and parts tend to get bent out of shape."

VERSATILITY. Overall, it seems many contractors are pleased with the versatility that loader attachments offer. Bob Simon of Woodland Landscapes, Akron, Ohio, uses his loader for trenching, grading and loading materials.

"I own a power rake attachment, and I rent the others as I need them," he said.

Simon, who has owned his loader for just over a year, said renting allows him to try various attachments and projects without a lot of capital expenditure.

"I just bought the machine last year and it cost quite a chunk of

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Compact design makes loaders versatile. Photo: Ford New Holland.

change," he said. "So I only want to buy one attachment at a time. I bought the power rake because it will till up the ground and prepare the seed bed in one fair swoop."

Chip Morris, vice president of Landscape Management Co., Gainesville, Ga., who uses his skid steer loader at various sites, finds its attachments ideal for multi-uses, including moving sod and grading.

While the loader is not among the most frequently used machines in operation, Morris found it handy enough to stop renting and start owning one. "We use it a little bit each day as a means to save a little bit of labor," he said. "But we don't use it with the frequency of a mower."

Morris said renting before purchasing sold him on the equipment's versatility. "We had used it in the past and knew what it could do for us," he said.

VME Sales in Nashville, N.C., which sells Zettelmeyer loaders in the U.S., offers its wheel loader as an alternative to traditional skid steer loaders, but with an assortment of attachment couplings designed to interface with competitors' attachments.

"We have found that if a contractor purchased another brand loader and attachments, he was pretty much locked into that brand when it came time to replace the loader," said George Fink, VME product marketing specialist. "So what we have done is designed coupler plates that fit other brand attachments."

Fink said that while Zettelmeyer currently adapts its coupler plates to skid steer loaders, the company may plan coordinating systems for other loaders as well. "We will consider additional plates in the future. Remember we are just in our infancy, so to speak, and the initial attachment is a recent introduction."

OTHER FACTORS. While attachments appear to be the driving force behind the growth of loaders, not everyone sees them as the only important factor in product selection. Jim Donoghue, product manager, skid steers and trenchers, Case Corp., Racine, Wis., considers durability and reliability issues equally significant.

"While it's clear that attachments have been the primary driving factor in the growth of loaders, customers still want reliability and durability. They want a return on their investment and they want the loaders to work every time," he said. "A major reason people buy loaders is their compactness. They're small and offer ease of maneuverability."



In addition, contractors report that lift capacity is vital as well. Woodland Landscapes' Simon, for instance, found he needed larger size cooling and hydraulic systems for his loader.

"I bought my loader used, and had a lot of cooling problems with my hydraulics last year," he said. "The system would get very hot when we ran it for seven or eight hours. We replaced some parts this winter and I haven't had the problems since."

"But, I still believe looking for a larger cooling system for the hydraulic system would be wise."

Morris, of Landscape Management Co., also looks for durability and strength in his loaders. "One of the things we looked for when selecting the loader was stability," he said. This particular model sits a little bit wider and longer than some of the other skid steers."

Morris also looked to lift capacity when making his determination. "We wanted to be sure it could lift a pallet of sod," he said.

And finally, Morris asserts that dealer service support was critical. "Our dealer stocks a good supply of parts, which was important to minimize downtime."

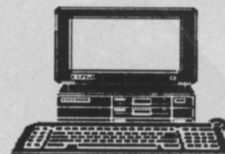
Morris also attests that timing played into his selection of the loader. "We looked at two other brands as well, but they were in a model changeover, so I was uncertain about parts for the future," he said.

For Arnold Sieg, vice president and branch manager of the Racine, Wis., branch of the Bruce Co., parts were never a consideration. Bruce owns 38 Bobcat and 12 John Deere loaders, and maintains a parts inventory that rivals many dealers. However, he gives his dealer credit for support and training to help keep his fleet up to standard.

"We have stayed with the machines for many years because of their dependability. Our operators like them and can perform miracles with them," he said.

Regardless of an operation's size or comfort
(continued on page 74)

LAWN ASSISTANT



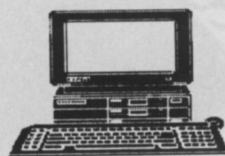
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USE READER SERVICE #50

Loaders

(continued from page 71)

level with loaders, selection criteria must be consistent for all types of landscape equipment. Contractors must ask themselves what their intended use is, and seek out products that fit.

"Obviously, smaller landscapers will use smaller units," said Gehl's Moore. "But from there, it gets cloudy. While larger landscapers will want larger units, there is a danger of getting too big."

Moore warns that opting for equipment that is too large may have further ramifications on a landscaper's business. "You will need to transport it to the site, which will require a larger trailer," he said. "That requires more money."

And, he added, "larger units mean more weight and more damage to the turf."

One key to proper selection, say most contractors and all manufacturers, is good communication with dealers and distributors. "Let them know what your needs are and work at it from there," Moore said.

"Let the dealer know what your business is," said Mowry. "Let him know what restrictions you face and work with him."

Otherwise you might not be able to reap all the benefits of such a versatile machine.

Sort of having a utility infielder who can't play second base. ■

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

SKID STEER LOADERS MEET LANDSCAPERS' NEEDS

LANDSCAPE professionals chose skid steer loaders by a landslide over the wheel loader type for a number of reasons. The basic design of skid steer loaders encourages compactness and maneuverability, both of which are requirements for the tight spaces commonly encountered in landscaping.

The skidding action allows for tight turns and precise movement. Since the loader's frame doesn't bend in the middle, very little space is needed to rotate in a circle. In contrast, the articulated design found in wheel loaders allows them to bend in the middle, which gives another type of movement without as tight a turning radius.

Another consideration is the fact that skid steer loaders typically are much smaller and narrower, giving them additional advantages of versatility in a variety of circumstances. Wheel loaders usually are designed to be larger and more powerful, and may offer too much size and operating costs for a typical landscaper's needs.

"I'd estimate that about 95 percent of the loaders used in the landscaping industry are the skid steer variety," said Steve Costello, regional sales manager for Mustang Manufacturing Co., Owatonna, Minn. "The reasons are that more landscapers can afford them, they fit the kind of jobs landscapers do and because they're smaller, they're easier to haul around."

In spite of their popularity in landscaping, the skidding wheel action can have some drawbacks if operators don't use the machines properly. The nature of their turning action make skid steer loaders vulnerable to possible turf damage. Costello maintains that good training and careful judgment will minimize any problems.

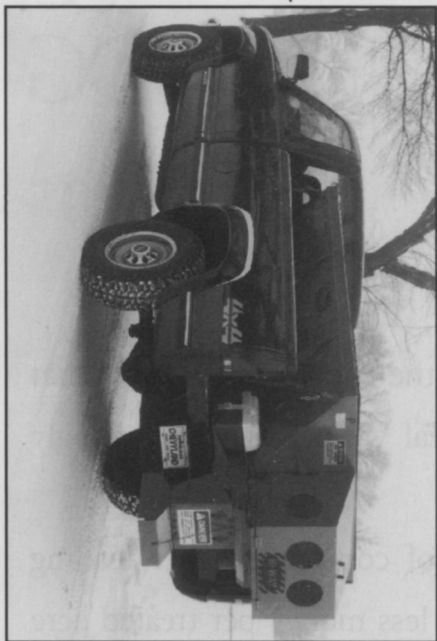
"Yes, skid steer loaders are difficult to operate on soft turf. The landscaper has to be very careful. On harder turf with a minimal amount of moisture, there shouldn't be any problem."

Another bonus is safety. "Compared to wheel loaders, skid steer loaders are lower to the ground, more compact, and turn over less easily," Costello noted.

"Experienced operators will take precautions and make sure they're careful. Some operators even add wider tires." He explained that the wide tires offer increased stability.

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USE READER SERVICE #123

**PESTICIDES
IN THE URBAN
ENVIRONMENT**
PART 10

Storing Pesticides

Safe pesticide handling and storage not only helps preserve the environment but also keeps lawn care companies in line with pressing federal, state and local regulations, while assuring maximum pesticide efficacy.

By C. Neal Howell and Barbara G. Howell

Ed. Note: This is the 10th in an ongoing series on effectively using and promoting specialty pesticides in the urban environment.

PROPER PESTICIDE handling gives lawn maintenance professionals a competitive edge in several ways. Appropriate storage and disposal helps ensure employee safety. Safe handling not only helps protect the environment but also safeguards companies from fines and jail sentences levied against those who violate local, state and federal regulations. Finally, correct handling and storage assures maximum pesti-



PESTICIDES IN THE URBAN ENVIRONMENT

icide efficacy.

Some storage and disposal requirements pertain to day-to-day activity. With the end of the lawn care season approaching in many areas, lawn and landscape professionals should also be aware of special, end-of-season storage and disposal requirements.

Every day, lawn maintenance operators and landscapers use pesticides to control weeds, insects and fungus. Every day, their technicians mix and apply product, dispose of containers and rinsates and, often, have leftover diluted or concentrated product. While these pesticides are largely responsible for high-quality turf and its subsequent environmental and economic benefits, they could pose significant environmental hazards if not used, stored and disposed of in a proper manner.

The Ohio State University Cooperative Extension Service estimates that pesticide use in the United States increased from 200,000 pounds per year in the 1950s to more than a billion pounds per year by 1987. To ensure safe pesticide use, Congress authorized the U.S. Environmental Pro-

tection Agency to oversee use under the Federal Insecticide, Fungicide and Rodenticide Act of 1947. This act did not address storage and disposal regulations, however, so passage of a 1972 control act broadened and altered FIFRA to provide the first "definitive control" of pesticide container disposal and storage.

Authorized by this legislation, EPA in 1974 established regulations governing pesticide disposal and storage. Although these federal regulations are supplemented by state and, sometimes, local regulations, the requirements of these 1974 rules still govern industry practices.

Authorized by Congress in 1988, EPA is presently drawing up new regulations providing more specific requirements and mandates than ever before. A proposal for the new rules were printed and distributed in February. Although the public comment period closed last month, Janice Jensen, chief of the pesticide management and disposal staff of EPA, said it will be at least early 1996 before the agency can sift through the mountains of comments to finalize the rule making.

THE NEW RULES. According to Allen James, executive director of the Responsible Industry for a Sound Environment, the new rules would change container design and require a "six nines" standard for triple rinsing. Containers would have to be rinsed until 99.9999 percent of the product is removed. Under the proposed regulations, manufacturers would have to provide "extensive and expensive" testing procedures to ensure the ability of formulations and containers to meet the new, stiff standard. RISE commented on these and other issues to EPA.

Until passage of the new rules, operators should continue following existing laws, common sense and good business practices.

Under present EPA regulations, pesticide users are required to dispose of excess material, rinsate and empty pesticide containers in specific ways. Storage sites are regulated as to inventory, construction, signage and contain-

Lawn care professionals mix, apply, store and dispose of pesticide materials every day. But increased focus might be needed on the latter two aspects of the trade, as Congress considers more stringent federal regulations to ensure safe handling.



ment requirements. Safety regulations mandate use of various protective clothing and respirators. Notification of fire and public health officers is required as are worker protection measures such as cholinesterase testing.

In addition to these FIFRA requirements, disposal of leftover mixes, rinsate and containers is covered under the Federal Resource Conservation and Recovery Act. State and local ordinances regulate matters such as open burning of containers, ventilation and fire safety. Many states such as Illinois and Massachusetts are in various stages of passing legislation which would require, for example, permits for lawn maintenance containment facilities and wash water use and disposal.

Helping lawn maintenance operators run their businesses under these regulations and in a manner consistent with good environmental stewardship, the Professional Lawn Care Association offers the following recommendations for storage and disposal.

- Put on protective clothing and equipment before handling pesticides.
- Triple rinse or power rinse pesticide containers as you empty them.
- If possible, have a separate building used only to store pesticides. Do not locate this building within 2,000 feet of a community well, or within 800 feet of a non-community well. Observe local restrictions.
- Secure the area with fences and locks. Bar any windows.
- Provide good ventilation.
- Post the area with highly visible signs indicating that pesticides are stored there.
- Use fire-proof construction materials.
- Install a secondary containment structure to prevent groundwater contamination in case of a large spill or fire.
- Provide separate storage areas for volatile herbicides.
- Keep an updated inventory sheet.
- Keep temperatures moderate to prevent explosions or degradation of pesticides.
- Post NO SMOKING signs.
- Post fire department and poison control center telephone numbers.
- Have a working fire extinguisher rated for chemical fires.
- Provide chemical spill absorbent material.
- Keep a supply of soap and clean water near the storage site.
- Place containers on metal shelving; place drums on wooden pallets.
- If possible, keep pesticides in the container

Pesticide Shelf Lives

INSECTICIDES

- carbaryl (Sevin) WP—several years
- carbaryl (Sevin) F—watch for settling
- diazinon EC—5 to 7 years if tightly sealed
- disulfoton (Di-Syston)—2 years
- malathion WP—many years, but decomposes under high temperatures
- Merasystox-R—2 years
- methoxychlor—many years
- phosmet (Imidan) WP—2 to 3 years

FUNGICIDES

- benomyl (Benlate) WP—2 years, but decomposes in moisture conditions
- Captan WP—3 years

HERBICIDES

- glyphosate (Roundup)—2 years, don't allow to freeze
- casoron (G)—2 years, if cool and dry
- Dacthal (WP)—2 years
- Kerb (WP)—2 years
- simazine (Princep) (G, WP)—many years
- Surflan (G)—3 years, mix well
- Treflan (G)—3 years, if dry and under 80F

in which it originated.

- Protect labels with lacquer.
- Do not use anything resembling food containers to carry pesticides.
- Keep containers out of direct sunlight.
- Securely reseal or bag any opened pesticide containers.
- Use old or damaged containers first.
- Mark mixing containers and utensils with the words "poison" or "danger."
- Do not stock up on pesticides based on anticipated use. Purchase pesticides in small quantities throughout the season, or on an "as needed" or large project basis.
- Mix only what you need for the specific application or route.
- Apply any leftover pesticide solutions according to the product label.
- Use all opened containers of pesticides before the end of the season.

The shelf lives described in this chart are applied under normal conditions. Source: Pesticide Users Guide, OSU Ext. 193 Bulletin.

PESTICIDES IN THE URBAN ENVIRONMENT

COMMON SENSE. In addition to government requirements, many landscapers and lawn maintenance professionals are applying common sense and good business sense to storage and disposal issues. Operators, especially in the cold winter areas, have become increasingly aware of issues of pesticide efficacy and temperature control as well as shelf life. While they continue to read and use label information, many also are working with suppliers to improve buying patterns and eliminate leftover material following applications.

Many companies are buying in bulk, thereby eliminating the need for container disposal, a critical problem in the creation of solid waste as well as worker and environmental safety. Steve Carrell of PBI-Gordon Corp., Kansas City, Mo., said the trend is toward more "user friendly" container sizes. These would include 220-gallon, 110-gallon and smaller, refillable mini-bulks.

Many state associations, cooperating with the Agricultural Container Research Council, encourage recycling of pesticide containers and sponsor collection sites for shipping, subsequent shipping and re-use of pesticide containers. In Florida, one turf distributor, United Horticultural Supply, sponsors a pesticide container disposal training program and facilitates collection of empties.

RISE is planning a similar pilot program for recycling in a few states in 1995.

Other lawn maintenance companies are using direct injection systems to minimize worker exposure to pesticides in liquid applications. For example, Kyle Williams, Green Solutions Inc., Woodstock, Ill., said the system he uses siphons liquid product directly from pesticide containers into the line carrying liquid fertilizer mix for lawn care application. The truck, then, has its own containment system in case of spills or leaks.

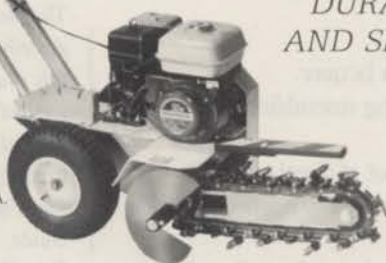
What do you do at the end of the season when you've just mixed up a 1,000-gallon batch of fertilizer, herbicide and fungicide and it starts to rain, or worse yet, snow? Dale Stephenson of Wilbur-Ellis, Fresno, Calif., said his company encourages customers to follow a three-step process to reduce

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USE READER SERVICE #46

the need for off-season storage. Firstly, order responsibly; base the size of the container order on factors such as time of the season, weather outlook and anticipated demand. Secondly, order the smallest size container consistent with anticipated use. Then, use everything that was bought.

POST-SEASON STORAGE. What about material left in the can, box or bag at the end of the season?

Some distributors, on a case by case basis, will take back unopened, pristine cases of unused material. Some distributors decline to accept surplus material. Don't wait until the end of the season to discuss return policies with distributors. You may need to work some trades with other lawn maintenance professionals to reduce your inventory.

The issues of post-season storage require special consideration. Some pesticides require protection from freezing or heat to maintain their efficacy. Improper storage, then, might result in a product which does not produce the desired control of pests the following season. Use facilities constructed under the guidelines for proper storage and containment and follow the ensuing rules for overwintering product.

1. Record the date of purchase on product container label. Assemble an inventory of materials to be stored. Keep the inventory away from the storage site. You may be required to provide a copy of the inventory to the local fire department.

2. Provide separate storage areas for herbicides to avoid possible contamination. Never store pesticides with feed or seed.

3. Check product containers for damage or leaks before long-term storage. (Check holding tanks, too.) Store products on shelves in a way that a regular observer may note potential leaks.

4. Read labels carefully for storage instructions such as protection from overheating or freezing. You must follow these steps to maintain the integrity of the formulation and the effectiveness of the product.

5. Make regular checks of storage areas for possible leaks or problems with

stored material.

6. Some products have anticipated shelf lives. Observe them. Their chemistry begins to break down after time. Some examples are shown in the preceding table provided by The Ohio State University.

7. At the beginning of the next season, check stored products carefully. A change in color of product or a pressure build-up in the product container can show that the product is chemically changing and may be losing its potency. ■

The authors are industry consultants with Key Solutions, a division of Iris Sales & Solutions Inc., Rocky River, Ohio.

SPECIALTY PESTICIDES PART 11

As we continue our ongoing series on specialty pesticides in the urban environment, next month *Lawn & Landscape Maintenance* magazine will discuss pesticide licensing — who needs it, how do you get it and what does it involve.



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Exploring New Weed Control Options

Editors Note: This new chemical technology from DowElanco, detailed below, is the first to fight a whole range of broadleaf weeds preemergently. Other available preemergents may control several broadleaf weeds, but generally are intended as control measures for grassy weeds.

BOTH VETERAN and novice lawn and landscape contractors alike generally follow an accepted pattern for controlling weeds: preemergent control in the spring for grassy weeds and several postemergent applications throughout the year for broadleaf weeds.

While effective, this pattern can get costly. However, until recent years this was the only viable weed control option available. Traditionally, preemergence herbicides are effective for control of grassy weeds, but their effectiveness on broadleaf weeds has been fairly limited.

New chemical technology, however, presents lawn and landscape contractors with the option of new control strategies. Isoxaben, the active ingredient in Gallery™ herbicide, is allowing them to control broadleaf weeds preemergently.

As weed seedlings germinate, isoxaben disrupts and halts root and stem development of the weed seeds, controlling weeds

New chemistry in preemergence broadleaf herbicides provides lawn and landscape contractors with new opportunities for broadleaf weed control.

before they break the surface. According to DowElanco, the manufacturer of the product, isoxaben controls 95 of the most common broadleaf weeds including dandelions, white clover and plantain for six to eight months.

A NEW VIEWPOINT. The new technology has been available since 1990. Since then, Andy Hines, owner of Shrub & Turf in Athens, Ga., has switched his customers' lawn maintenance programs to a preemergent broadleaf weed con-

trol strategy. The move enables him to offer some attractive incentives to his clientele.

Shrub & Turf services 650 residential and commercial customers, with an average lawn of about 10,000 square feet. He offers a free application of a preemergence broadleaf herbicide for customers who pay upfront for a year's worth of lawn care services.

"We're just confident we can effectively control broadleaves preemergently," admitted Hines, a 25-year industry veteran. "We know we'll reduce callbacks. And you know what that means: reduced labor costs and increased cash flow and profit."

Several lawn and landscape contractors like Hines have found that the investment of one application of a preemergence broadleaf weed herbicide, particularly in the fall, can pay big dividends by eliminating the need for several re-applications of a postemergence broadleaf weed herbicide throughout the growing season.

Gary Cooper, owner of Cooper's Lawn Aeration Service, Virginia Beach, Va., has enacted a similar approach to his business, which he claimed has been mutually beneficial for his company and his customers.

Like Hines, Cooper is no stranger to the business. He established Cooper's Lawn Aeration Service in 1973 when sta-



Reducing the need for several postemergent herbicide applications helps cut labor and material costs significantly over the long-term.

tioned in the area with the U.S. Marine Corps. He retired from the service in 1986 and has built a primarily residential business consisting of more than 450 accounts. The average size lawn he services is approximately 11,000 square feet.

Cooper has used a preemergence broadleaf weed herbicide for the past five years, and said it fits perfectly into his customer service philosophy.

"It's a true win-win situation," he explained. "Both my company and my customers win. My customers can enjoy beautiful lawns and ornamentals, and my business continues to flourish with new and repeat business."

COST OF DOING BUSINESS. At first, said Hines and Cooper, lawn

and landscape contractors may be leery about using a preemergent for broadleaf weed control. This apprehensiveness is often a result of two things: anxiety over signing on a customer in the fall with the risk of losing the customer in the winter before receiving payment, and uncertainty about convincing customers that the generally higher product cost of a broadleaf preemergent compared to a postemergent will pay off in the long-run. This is, of course, considering effectiveness,

customer retention and reduced call-backs.

A single application of a preemergent for broadleaf weeds is often more effective and less costly than several applications of postemergence broadleaf herbicide and spot weed treatments. However, the initial application will likely be more expensive than a single postemergence application.

Hines and Cooper have developed a method of helping their customers understand the short-term

A successful herbicide program keeps customers happy and stirs repeat business.

costs and long-term benefits of the plan. Both rely on an informed consumer to make the right decision.

For lawn and landscape contractors the payoff of satisfied customers and fewer weeds is almost immediate. Hines estimated he's reduced customer call-backs from an average of 1.5 per customer, to 0.25.

"Here's the math on that," said Hines, tapping at his calculator. "An average service call costs about \$50. Fifty dollars, times one and a half calls per customer means \$75 in total costs per customer. I've reduced that cost to \$22.50 per customer."



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Hines estimated that his firm has reduced callback costs by \$168,000 in the five years he has been using a preemergence broadleaf herbicide, enabling Shrub & Turf to weather the hard times and obtain better financing for future growth.

A growing base of satisfied customers has also allowed Hines to reduce advertising expenditures, since every well-maintained lawn is a promotional billboard for Shrub & Turf.

Cooper has seen similar benefits with the use of a preemergence broadleaf weed herbicide.

Cooper has nearly eliminated customer callbacks for broadleaf weeds, going from 30 employee-days per year for reserivicing, to less than half a day.

"What's that employee worth for 30 days?" posed Cooper. "He's going to cost you \$2,000 in wages. So you save \$2,000. Now what can he generate for you? He can bring in another \$6,000 in new business, because he's not out spraying weeds. That's \$8,000. Tell me that's not cost effective."

A CHANGE IN THE BUSINESS.

Cooper explains these benefits to his customers, and then charges them an amount that accurately reflects the service and costs. When customers get their bill, the details of the benefits of the service are repeated on the statement. Cooper reported no problems when it comes time to resign customers in the spring.

"I guarantee my customers a full year free of weeds, and that's just what they get," said Cooper. "I have satisfied customers who I retain year after year because of the weed control."

RESEARCH SUPPORT.

University trials confirm the findings of Cooper, Hines and other lawn and landscape contractors from around the country.

A study, conducted in 1990 at Purdue University, compared a fall application of isoxaben with a spring application of a postemergent for control of yellow wood sorrel. Gallery, applied at a 1 lb. ai/acre application in September 1988, demonstrated 97 percent control in September 1989. The 2,4-D based postemergent, applied at 0.9 lb. ai/acre in April 1989, demonstrated 54 percent control in September 1989.

Although lawn and landscape professionals wouldn't generally expect thorough control with a postemergent for six months, the relatively low percentage of control does demonstrate the need to retreat two to three times within that time period, said Cooper. These repeated trips result in increased labor and material costs, as demonstrated by Cooper and Hines.

"DowElanco asked us to be part of the final tests on Gallery before it entered the market in '89," recalled Cooper. "That December, we put

down Gallery over half of one customer's backyard, and treated the rest of the yard with a postemergence weed control.

"We had to spray the area without Gallery three additional times with a postemergent the following year to keep the weeds down. But after a full year, there was only a single broadleaf plantain weed in the center of the Gallery patch. It was amazing.

"There are two things that will get you in trouble fast with customers in this business," Cooper said. "Weeds, and not making the grass green enough. Fortunately, we're able to satisfy customers in both of these areas."

**Tank-mixing
an effective
preemergence
broadleaf
weed herbicide
with a
postemergent
will knock
down existing
germinating
weeds
while
preventing
the growth
of
new ones.**

FALL IS THE SEASON. In most areas of the country, fall is the best time to apply preemergence broadleaf weed controls. Depending on the climate, weed seeds can germinate during the winter months, already starting to grow before customers ever even see them. Other factors such as increased rainfall or irrigation can also help provide optimal fall weed control.

"We have weeds growing from January to December," Hines said. "But fall seems to be the most effective time."

Hines and Cooper also appreciate isoxaben because they can tank mix it with a wide variety of other herbicides, fungicides and insecticides, and it's available in a number of fertilizers. For instance, tank-mixing an effective preemergence broadleaf weed herbicide with a postemergent will broaden weed control by knocking down existing germinating weeds while simultaneously preventing the growth of new ones.

Because isoxaben can be applied to more than 450 ornamental plants and ground covers, it can also be used in many non-turf areas for year-round protection from broadleaf weeds.

"Tough as it is against weeds, we don't have a problem putting it over the top of ornamentals," Cooper said. "We've attracted more than a few customers with award winning gardens that we maintained using Gallery."

A NEW PERSPECTIVE. The direct economic benefit of using a preemergent that effectively controls broadleaf weeds, along with a satisfied customer base have convinced Cooper, Hines and other lawn and landscape professionals to change their way of doing business.

The traditional method of exclusively using postemergence herbicides is no longer the only option. More and more, lawn and landscape professionals and their customers are realizing the long-term benefits of a lawn maintenance program centered around a fall application of a broadleaf preemergence herbicide.

People

JAMES PAOLUCCI was appointed national sales and marketing manager for MacKissic Inc. Paolucci held a similar position with Roto Hoe as well as managerial positions with White Outdoor and Simplicity Manufacturing.

Husqvarna named **Scott Hassett** territory manager, charged with recruiting, developing and servicing outdoor power equipment retail dealers in western and central Massachusetts. Hassett formerly served as assistant manager for True Value Hardware of Billerica.

Pure Seed Testing Inc. named **Andy Evans** seed laboratory manager, in charge of supervising and conducting purity, germination and Tetrazolium tests on perennial ryegrass, Kentucky bluegrass, tall and fine fescues and creeping bentgrass. Evans previously served as manager for The Ohio Seed Improvement Association.

Jennifer Scott was named communications specialist for Kohler's Power Systems businesses. Scott was formerly a general assignment reporter for a weekly newspaper in New England.

BSI Consultants named **Joseph McHale** plan review engineer in the firm's community development division. McHale formerly served as plan review engineer for the City of



Paolucci



Hassett

Oakland, Calif.'s Community Restoration Development Center. He was primarily responsible for conducting residential reconstruction plan reviews for homes affected by the October 1991 Oakland fire storm.

Janet Giessleman joined Rohm and Haas Co. as turf and ornamental product manager. She replaces **Robert Gordon**. **Dan Loughner** became product development manager, turf and ornamentals, replacing **John Long**.

Griffin Corp. hired **David King** as territory manager for Spin Out®, in charge of marketing, sales and management of distributor accounts, as well as supervising nursery trials and promoting the product at area trade shows.

Michael Bush joined ISK Biosciences

Corp. as a customer service intern, Industrial Biocides Division, responsible for assisting customers with all aspects of their jobs during peak season. Bush was a graduate assistant with the University of Memphis.

Gorman-Rupp named **Michael Siwek** manager of petroleum pump sales. Siwek joined the company in 1964 and has served in a variety of positions including 17 years in international sales. Siwek also manages the fire, petroleum and rotary gear pump lines.

Exmark appointed **Daniel Dorn** territory manager, in charge of Texas and Oklahoma, and **Jerry Zink** territory sales manager, in charge of sales in the western third of the United States, as well as British Columbia, Canada. Zink formerly worked for the Alamo Group.

Lebanon Turf Products appointed **Timothy Ford** director of grass seed research and production. Ford holds more than 15 years experience in the seed industry.

Turf Merchants named **Dr. Mike Richardson** research director. Richardson served a two-year post-doctoral position with the U.S. Department of Agriculture. ■



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USE READER SERVICE #45

Products

Available on either the **Isuzu** NPR-EFI gasoline-powered chassis or the Isuzu NPR diesel chassis, this new 12-foot stakebed-dump landscape body is designed for a variety of lawn/landscape uses.

The body features a Rugby 9-ton lift, rear dump doors, compartmented dividers to separate materials, two sealed accessory/tool boxes and Malasian hardwood deck and siding. The polished stainless steel stakes are backed by a three-year warranty.

Built on the Isuzu NPR-EFI 13,250 GVWR chassis, the truck is ideally suited to lawn, landscaping, construction and industrial applications.

Circle 126 on reader service card

The **Exmark** Explorer® II provides true zero turn, dampened steering and hillside traction and stability. The 52-inch floating cutting deck offers a TriVantage® design that allows bagging, mulching or discharging. The Micro-Mulch accessory recycles clippings into the turf.

The Explorer II's rear utility box is ideal for transporting tools, plants and other materials.

The Explorer II is available with a 20-h.p.

PRODUCT SPOTLIGHT

A NEW APPLICATION system for **Ciba Turf & Ornamental Products'** Alamo®, a systemic fungicide that fights oak wilt and Dutch elm disease, has been registered with the U.S. Environmental Protection Agency (EPA).

The new micro-injection system consists of individual, 10-milliliter Alamo units that easily insert into a tree's flare roots. Use a slight tap of a hammer to activate a plunger and release the fungicide into the tree. Alamo is water-soluble, so it translocates readily throughout the tree. Total application time is significantly reduced.

The micro-injection units save six to seven hours in labor over previous application methods.

The micro-injector unit provides a "closed" delivery system, meaning that applicators should never come in contact with the fungicide during application. Units are made of transparent plastic that allows applicators to see when the bluish-colored fungicide has been taken up by the tree.

Circle 125 on reader service card



engine and 52-inch or 60-inch TriVantage decks.

Circle 127 on reader service card

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ground covers and flower beds.

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USE READER SERVICE #47

ents for slow feeding of perennial flowers and annual bedding plants.

Designed to provide a balanced nutrition of essential major and minor nutrients for optimal plant growth and maintenance, it also can be used to fertilize evergreen and deciduous trees, shrubs and ground covers. It is not recommended for container-grown plants.

Circle 128 on reader service card

The **Areo-Power** Unitized Fueler is an above-ground steel tank for storage and secondary containment of gasoline for landscaping equipment and chemicals. The tanks reportedly hold advantage over underwater tanks by allowing easy relocation, visual testing, lower insurance rates and easier leasing or financing.

Areo-Power tanks range in capacity from 300 to 20,000 gallons and provide secondary



containment with overflow protection. A rain-shield system minimizes water accumulation in the containment dike, and keeps leaves and other debris out while a suction and pump system dewater the containment area.

Standard features include an emergency vent and overflow diverter, a dispenser drip pan, an overflow sump with overflow pipe and locking lid, and a 24-foot access manhole.

The Areo-Power Unitized Fueler can be built to custom specifications for special pumping, filtering, or blending requirements.

Circle 129 on reader service card

Road Crew ice melting crystals are ideal for melting ice and snow at -12 degrees to -15 degrees F. Road Crew crystals include calcium chloride pellets which attract moisture from the atmosphere (rock salt and potassium chloride need direct contact with moisture which isn't available at low temperatures). As calcium chloride creates heat from its reaction with moisture and goes into solution, Road Crew's potassium and sodium chloride are activated. The end result is a chain reaction of chemicals which provides rapid deicing action at extremely cold temperatures. Road Crew is billed as safe around shrubs, grass and trees.

Circle 130 on reader service card

Rain Bird Sales Inc.'s Contractor Division offers the Landscape Design add-on module for its RainCAD irrigation design program.

RainCAD's Landscape module allows the user to create plant databases of up to 1,800

different plant material selections. The module can be used for simple residential landscapes as well as large commercial projects.

Special features include automated plant layout, automated plant legend generation, material takeoff capabilities, installation details and an estimate and proposal function. Use one of 50 plant symbols to represent plant material or create your own symbols.

Circle 131 on reader service card

Zeneca Ag Products offers a newly designed 1-gallon polyethylene jug for several

of its professional products including Demon® insecticide and Reward® herbicide.

New features of the container include heavier-weight plastic for extra strength, flatter bottom for stability during transport and storage, an anti-back-off cap for tight seal and tamper resistance, and a new handle and throat design for faster pour. The new throat design also meets anticipated EPA rinsing standards. The container's design allows increased capacity and easier rinsing of the jug by applicators.

Circle 132 on reader service card

By the time this song is over, your season may be gone.



Don't miss one of the most important seasons for tree health maintenance. Feeding urban trees in autumn helps to maintain vital life support systems and stimulate root activity in the winter and early spring.

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Inject-A-Min® Manganese



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USE READER SERVICE #27



The Model 2500 Edger from **Excel Industries** attaches to rider mowers, allowing the operator to edge without leaving the mower's seat.

The edger has reversible coulter-type blades which spin rather than roll, so they don't kick up rocks and debris. Downward pressure on the blade can be adjusted to match soil conditions. A built-in depth gauge keeps the Edger at the proper depth in soft soil conditions. The blade's concave shape forces it to stay on course — even when trimming around curves. The Edger can also be locked in place when bed edging is desired.

Circle 133 on reader service card

Riverside introduced a line of micronutrient products called Microlific™ Manganese EDTA, Microlific™ Premium, Microlific™

Iron EDTA, Microlific™ Iron EDDHA and Microlific™ Calcium EDTA.

Microlifics are 100 percent soluble, dry formulations of micronutrients. The chelated micronutrients, since they are not used by soil, are 100 percent available for the nutritional needs of the plant.

Circle 134 on reader service card

SePRO Corp. offers A-Rest® plant growth regulator in 2.5-gallon containers.

A-Rest, which shortens stem length and produces a more compact and salable plant, was previously only available in quarts and 30-gallon drums.

The new sized containers meet customers' requests for a midsize container.

SePRO provides products and services to specialized market segments, including the horticultural and aquatics markets.

Circle 135 on reader service card

Harley Model S*6 Power Box Rake,™ a 6-foot, bi-angular, bi-directional power landscape rake for skid steer loaders, has been introduced by **Glenmac**.

The Harley rake should eliminate many problems associated with skid steer attachments. It comes with a quick-attach face plate for easy-on/easy-off hitching. Two sets of paral-

lel arms link the quick-attach to the rake.

One of the primary features of the Harley S*6 rake is the ability to create left or right throw windows of raked material. Bi-angular construction permits an operator to angle the single roller and twin barrier bar up to 20 degrees left or right of center.

Circle 136 on reader service card

The Handi-Slide from **Ray Ragan & Associates** is a device that provides disabled individuals unassisted access to and from a hand-controlled (zero turn radius) riding mower.

Adjustments can be made to fit a variety of zero-turn radius mowers.

The handi-slide is recommended for use with a seat with arm rests, safety belt (ap-



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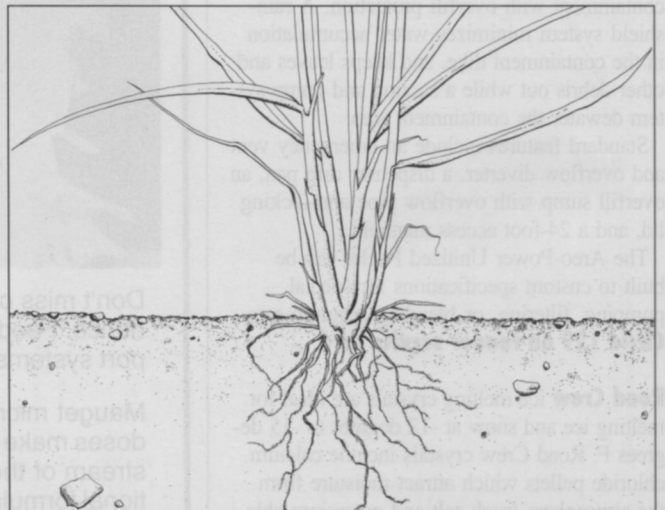
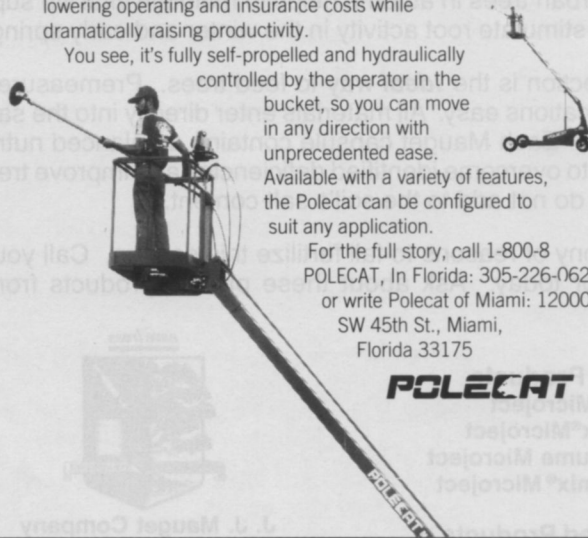
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plied around the chest area) for stability and safety roll bar.

The Handi-slide glides into position on the mower. Using safety hooks, the wheel chair is placed across the mower's front at the bottom of the slide.

Each unit comes with full instruction on how to safely access the mower. A videotape demonstrating the procedure also is included.

Circle 137 on reader service card

DRA Co. offers a lightweight pair of safety glasses that spread the pressure point away from the bridge of the nose. The safety glasses are available in three different lens styles: clear, smoke and mirror.

Originally meant for the manufacturing environment, the glasses have become popular in gardening, repair work and recreational areas.

Circle 138 on reader service card

DeepRock's Gorilla Drilla one-man auger drill totes a 5-h.p. to 8-h.p. engine and heavy-duty gearbox with centrifugal clutch, and drives 18-inch diameter augers with 281-foot pounds of torque.

The unit's frame design absorbs drilling torque and vibrations and helps prevent operator injury. The machine also adjusts for drilling on slopes and hillsides.

The Gorilla Drilla digs up to 20 inches in diameter. An adjustable tilt option allows vertical holes on steep slopes. The machine easily fits through narrow gates and existing plantings.

Circle 139 on reader service card

Thomson Publications offers a Spanish-English/English-Spanish dictionary filled entirely with agricultural, botanical and horticultural terms, including equipment, tools, weeds, diseases and insects.

This dictionary is designed to be used on a day-to-day basis. Illustrations of numerous agricultural/horticultural usages are provided.

Circle 140 on reader service card

Vermeer's Brawny TG 400 tub grinder features a HammerTooth design — 20 pound cutter block hammers with replaceable carbide rock bit teeth. The grinder chews through heavy bulk brush, yard waste and wood and organic debris. The drive train has a Rockwell triple-disc clutch and torque limiter.

The tub has hinged flares and a 90-degree tilt for easier, faster screen changing. The variable speed, hydraulic lift and fold conveyor is designed for loading flexibility, compact transport and quicker set-up/tear-down.

Circle 141 on reader service card

The **Western PRO-FLO** salt and material spreader is made of high-strength polyethylene. The hopper has up to 1,200 pound capacity (10 cu. ft.) on properly equipped vehicles.

Poly feed gates regulate material flow and provide positive shut-off. Adjustable deflectors control the spread pattern.

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cab electronic control, with integrated circuit protection, which provides a wide-range speed adjustment with minimal loss of power.

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Circle 142 on reader service card

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USE READER SERVICE #26

Product Profile

MANAGE HERBICIDE REMOVES ASTERISK FROM NUTSEdge CONTROL

AN ASTERISK appears next to the word nutsedge on Motz Lawn Care and Sports Turf's contracts in the Cincinnati area. It lets customers know there is no guarantee nutsedge can be treated safely — if at all.

Most years, Motz representatives admitted they could do nothing to get rid of nutsedge without browning the lawn. People who pay a premium for preferred care don't like to hear that.

Last summer, however, Motz kept several of its elite customers happy by treating lawns with Manage, a new herbicide being developed by Monsanto. According to Monsanto, Manage is the only herbicide that controls yellow and purple nutsedge without injury to any warm- or cool-season turfgrass commonly grown in North America.

Motz participated in Monsanto's 1994 program under an Experimental Use Permit approved by the U.S. Environmental Protection Agency. If tests proceed on schedule, Manage will be available for sale in 1995.

"Nutsedge control is usually more hassle than it's worth," said Lloyd Royse, Motz's



Experimental tests with Manage herbicide show nutsedge control without turf injury.

vice president for lawn care.

Previously, when customers called about nutsedge, Motz sent out a truck, examined the problem and left a note advising the customer that nothing could be done.

"This takes time — and time is money — and you usually end up with an unhappy customer anyway," Royse said. "Once you've browned their lawn, it's hard to keep them."

Royse has taken a chance some summers if the weather wasn't terribly hot. "Even in cooler weather we've had injury."

But last summer, which was very hot and had one of the worst outbreaks of nutsedge in recent memory, Royse had enough Manage to treat several lawns at will.

"We treated 80 different sites with Manage without any injury," Royse said. Grasses included bluegrass, rye and tall fescue.

One customer stands out in Royse's mind. The customer was so frustrated with his lawn a few years ago that he allowed Motz to completely kill out his turf with Roundup herbicide and reseed for a new lawn, expecting his problems to be over.

"Then he got nutsedge. He's been unhappy with us ever since the reseed," Royse said.

Last summer Royse sprayed with Manage. A competitor worked on the neighbor's yard and was unable to risk treating for nutsedge.

"You could see the line between the yards where the Manage application ended. The neighbor has nutsedge and my customer didn't."

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USE READER SERVICE #29

Calendar

OCT. 5-7 IPAA Convention and Trade Show, Tri-Cities Red Lion Hotel, Pasco, Wash. Contact: Interstate Professional Applicators Association, P.O. Box 1377, Milton, WA 98354-1377; or Mary Ellen Smith, 206/845-7780.

OCT. 6-JAN. 12 Arborists and Tree Workers Certification Preparation Course, Sequoia Conference Center, Buena Park, Calif. Contact: Ted Stamen, 909/656-3431.

OCT. 8-11 ASLA Annual Meeting & Expo, San Antonio, Texas. Contact: Janet Rowson, American Society of Landscape Architects, 202/686-2757.

OCT. 12 Texas A&M Ornementals Field Day, Texas A&M University & Extension Center, Dallas. Contact: Texas Agricultural Experiment Station, 214/231-5362.

OCT. 12-13 23rd Annual Pacific Hort Expo, San Diego Convention Center, San Diego. Contact: Margo Jonsson, 916/567-1133.

OCT. 15 ISA arborists certification exam, Katonah, N.Y. Contact: International Seed Association, 217/355-9411.

OCT. 18-20 ASA 1994 Annual Convention, Hershey Lodge and Convention Center, Hershey, Pa. Contact: Atlantic Seedsmen's Association, 298 E. McCormick Ave., State College, PA 16801; 814/237-0330.

OCT. 21-23 New Jersey Shade Tree Federation 69th Annual Meeting and Tree Expo, Seasons Resort and Conference Center, McAfee, N.J. Contact: Bill Porter, N.J. Shade Tree Federation, P.O. Box 231, Blake Hall, Cook College, New Brunswick, NJ 08903; 908/246-3210.

NOV. 1-4 IA International Irrigation Exposition, New Orleans Convention Center, New Orleans, La. Contact: Irrigation Association, 5260 Willow Oaks Corporate Dr., Suite 120, Fairfax, VA 22031; 703/573-3551.

NOV. 3-4 1994 WALP State Conference, Embassy Suites Hotel, Bellevue, Wash. Contact: Washington Association of Landscape Professionals, P.O. Box 729, Mercer Island, WA 98040, 206/236-1707.

NOV. 6-9 National Institute on Park and Grounds Management, Twin Towers Hotel, Orlando, Fla. Contact: NIPGM, P.O. Box 1936, Appleton, WI 54913; 414/733-2301.

NOV. 8-11 Turf and Grounds Exposition, Rochester Riverside Convention Center, Rochester, N.Y. Contact: New York State Turfgrass Association, 800/873-TURF or 518/783-1229.

NOV. 10-12 7th Annual Equipment Show and Conference, Palm Beach Airport Hilton, West

Palm Beach, Fla. Contact: Landscape Maintenance Association, 41 Lake Morton Dr., Suite 26, Lakeland, FL 33801; 813/680-4008.

NOV. 13 Green Lawns and Global Issues seminar, Missouri Botanical Garden, St. Louis. Contact: Professional Lawn Care Association of Mid-America, P.O. Box 419264, Kansas City, MO 64141; 816/561-5323.

NOV. 14-16 Turfgrass and Ornamental Seminar, West Lafayette. Contact: Midwest Regional Turf Foundation, 317/494-8039.

NOV. 14-17 Green Industry Expo, St. Louis, Mo. Co-sponsored by the Associated Landscape Contractors of America, the Professional Grounds Management Society and the Professional Lawn Care Association of America. Contact: GIE, 1000 Johnson Ferry Road, NE, Suite C-135, Marietta, GA 30068-2112; 404/973-2019.

NOV. 15 ALCA Certified Landscape Professional exam, St. Louis, Mo. Contact: ALCA, 12200 Sunrise Valley Drive, Suite 150, Reston, VA 22091; 703/620-6363.

NOV. 17-19 Tree Care Industry Expo, Pennsylvania Convention Center, Philadelphia, Pa. Contact: National Arborist Association, P.O. Box 1094, Amherst, NH 03031-1094; 800/733-2622.

Nov. 19 Women in Horticulture Conference, Double Tree Suites (Southcenter), Seattle, Wash. Contact: Anne Bustion, 206/525-7844 or Lyn Dillman, 206/937-2815.

Nov. 29-Dec. 1 41st Rocky Mountain Turf Conference & Trade Show, Colorado Convention Center, Denver. Contact: Julia Marie, Rocky Mountain Regional Turf Association, P.O. Box 29, Franktown, CO 80116; 303/688-3440.

DEC. 5-6 Tree Hazards: The Ultimate Session seminar with Dr. Alex Shigo and physicist Claus Mattheck, Sturbridge Host Hotel, Sturbridge, Mass. Contact: John Kirkland, Tree Care Educators, 503/254-0482.

DEC. 6-8 Turfgrass Conference and Show, Georgia International Convention Center, College Park. Contact: Douglas Moody, 404/975-4123.

DEC. 6-9 Ohio Turfgrass Foundation Conference and Trade Show, Columbus, Ohio. Contact: OTF, 2021 Coffey Road, Columbus, OH 43210; 614/292-2601.

DEC. 14 Introduction to Estimating Residential and Commercial Landscape Proposals, Cook University, New Brunswick, N.J. Contact: Rutgers University, 908/932-9271. ■

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Compost Guidelines

(continued from page 34)

Trace Elements/Heavy Metals: Heavy metals are trace elements whose concentrations are regulated due to the potential for toxicity to humans, animals or plants. Similar to general-use pesticides, the mere presence of these materials does not pose a risk. These elements are contained in just about everything, and only pose a risk if they are found in large quantities.

Keep in mind that the content of specific trace elements/heavy metals content found in many fertilizers is greater than those found in biosolids or municipal solid-waste composts. (See Table 1.)

Regulations governing the heavy metal content of composts derived from specific feedstocks have been mandated at both the state and federal levels. Only products which meet the federal EPA's Part 503 Regulation pollutant limits can obtain general distribution status.

Trace elements — referred to as heavy metals — are arsenic, cad-

mium, chromium, copper, lead, mercury, molybdenum, nickel, selenium and zinc. Many of these elements are actually needed by plants for normal growth. Measuring the concentration of these elements, as well as other plant nutrients, will provide valuable management data relevant to the fertilizer requirements of plants and subsequent fertilizer application rates.

When available in larger quantities, specific heavy metals and trace elements may cause phytotoxic effects in plants; specific plant species are more sensitive than others. These elements are boron, manganese, molybdenum, nickel and selenium. None of which are typically found in compost in detrimental quantities. The quantity of these elements are measured on a dry weight basis and expressed as mg/kg or ppm. As a customer, data on heavy metals should be made available to you upon request.

UNSPECIFIED PARAMETERS.

Unspecified parameters are those not classified as quantitative or qualitative because of their inability

to be measured by industry standard test methodologies.

Maturity: Maturity is the degree to which a compost product is free of phytotoxic substances which can cause delayed seed generation, plant damage or seed and plant death. Maturity is measured through plant bioassays, such as seed germination, root elongation and plant growth trials. Negative plant effects due to immaturity are caused by a buildup of short-chain volatile fatty acids (i.e. acetic, butyric).

Stability: Stability is the level of biologic activity in a moist, warm and aerated compost product. Unstable compost consumes nitrogen and oxygen in significant quantities to support biologic activity and generate heat, CO₂ and water vapor, but stable compost consumes almost no nitrogen and oxygen and generates almost no CO₂ or heat.

Unstable, active compost requires nitrogen when applied to soil and growing media. Without it nitrogen deficiency can occur which may be detrimental to plant growth. If stored and left unaerated, active compost can become anaerobic and

emit foul odors.

Until industry standards are developed, stability and maturity should be measured for process control and qualifying the product's suitability for specific applications. Stability and/or maturity also affect other mainstream horticultural products, such as wood mulches.

Other compost characterization data may be necessary for certain products or specific end uses. For example, porosity and weed seed viability may be important to nurserymen, while flowability, odor presence, ash content or calcium carbonate equivalence may be important to landscapers.

CONCLUSION. This information has been presented to assist end users of compost products to become more educated consumers, as well as to provide important purchasing and use data. As customers, you have the right to know what you're purchasing. ■

The author is Product Marketing Specialist, E&A Environmental Consultants Inc., Cary, N.C.

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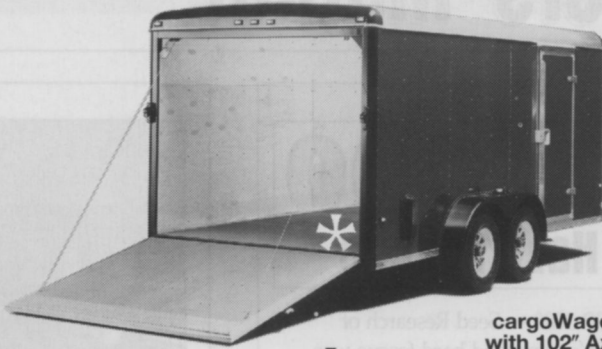


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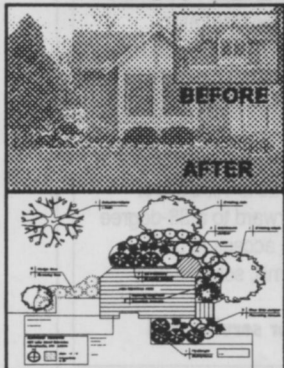
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