

Lawn & Landscape MAINTENANCE

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AUGUST 1994 • \$2.50

A FORMULA FOR SUCCESS

*U.S. Lawns, the only U.S. firm
franchising landscape maintenance
services, mixes a hands-on
owner philosophy with
corporate organization.*

In this issue:

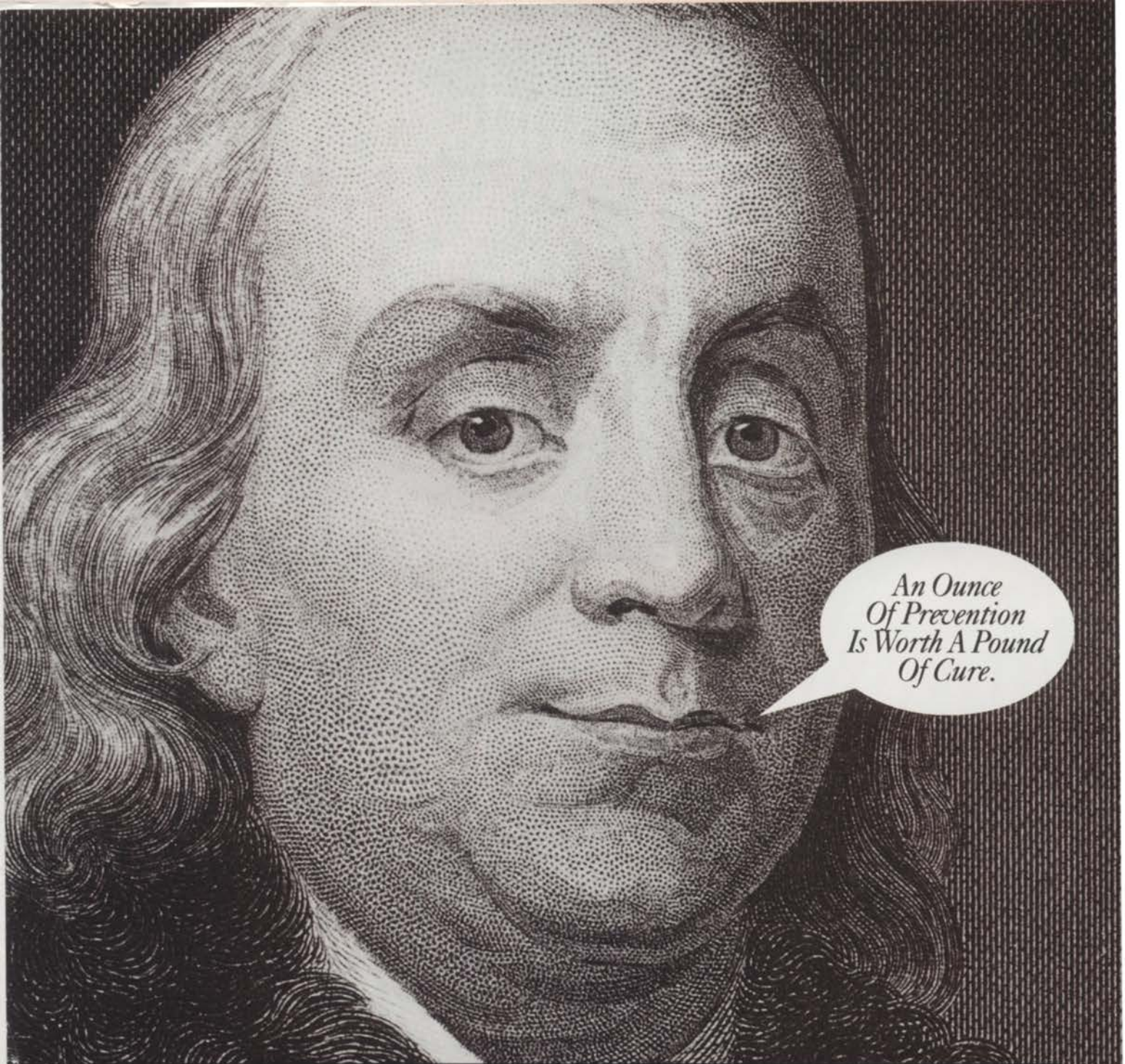
**Growing Wildflowers
in Compost**

Pond Management

Diagnosing Diseases

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Which means turf stays healthier longer, and you get consistently beautiful results.

And should anyone want to know how you did it, just tell them you took the advice of an expert.

Cover Photo: Eileen
Connors, Tampa, Fla.

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Editor's Focus

NINE OUT OF 10 U.S. households recognize the value of a well-maintained lawn and landscape. This according to a 1994 Gallup survey sponsored by several industry associations.

This is welcome news to an industry often starved for positive press, and definitely money well spent by the Professional Lawn Care Association of America, Associated Landscape Contractors of America and the American Association of Nurserymen and several others.

While the environmental benefits of a healthy landscape ranked relatively low on the consumer list of reasons to keep a well-maintained yard, that's OK for now. It's enough that consumers want their individual properties to help beautify a neighborhood and to provide a place of beauty and relaxation for their families and friends.

Other highlights of the Gallup survey bear out the real estate value of a landscaped property, as well as the safety and quality aspects of turf for athletics.

Expect to see a public relations blitz by these associations and savvy lawn maintenance and landscape contractors about the positives the lawn and landscape profession can bring. And rightly so.

For too long, many segments of the green industry have been on the defensive. After all, issues such as pesticide safety, noise pollution and emissions have long dominated news coverage of the green industry.

Don't be afraid to toot your own horn. This industry has a lot to be proud of, and creative business managers are taking the first steps to actively promote the benefits of lawn and landscape services above and beyond the agronomic and scientific issues.

Finally, some welcome news about health care reform. It seems Congress has decided to listen to the American people and structure a health care plan that benefits us rather than annihilates the tired, but still viable system currently in place. (At least at press time this was their attitude.)

Sure the present health insurance situation often leaves much to be desired, but an overhaul is not the cure-all. With the U.S. economy slowly inching its way back to a respectable level, any sort of government mandate must be given thorough consideration before implementation.

To this end, a group of small business people (representing more than 500,000 U.S. small businesses) and including several representatives from the American Society of Landscape Architects — recently met with President Clinton to discuss the squeeze health care reform could potentially put on small businesses.

The coalition estimates that small busi-



nesses pay 15 percent more of payroll to provide health insurance and as much as 50 percent more than large firms for the same package of health benefits. This is already a huge burden on many businesses.

Many lawn and landscape contractors use health benefits as a method of attracting and keeping good employees. Not an easy task with the high rate of turnover this industry traditionally experiences.

Whatever your views are on health care reform, it's important to get involved now. Remember, there is no "later" as far as this issue is concerned.

There seems to be a lot of attention being directed to improving the business and people management skills of company owners and managers these days.

Not only are the consumer publications touting the rebirth of the salesman and the imperatives of change, but agendas for upcoming fall conferences list company growth, profitability and professionalism as key program items.

To this end, energetic and dynamic keynote speakers have been lined up to provide motivational speeches on total quality management, putting your best foot forward and company dynamics as well as a series of technical programs and certification tests to enhance job performance and company reputations.

After a long, hot summer, callbacks, employee turnover, training, etc., it will be refreshing to gather with industry peers and reaffirm your commitment to the industry. National and regional conferences are a prime opportunity to put the stress and wear and tear of the summer behind and prepare for another year of growth. Hope to see you at one or more of the conference and shows this fall. — *Cindy Code*

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The Professional Grounds Management Society
The Irrigation Association
Responsible Industry for a Sound Environment
Turf & Ornamental Communicators Association
The Ohio Turfgrass Foundation
American Association of Nurserymen
National Landscape Association
The Composting Council

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IS COMING!

USE READER SERVICE #15

Business Watch

THE ECONOMIC FORECAST for the next 12 months calls for a gradual slowing in the growth rate of the U.S. economy, along with rising short-term interest rates and more inflation, according to *The Wall Street Journal's* semiannual survey of economists.

The Federal Reserve raised interest rates four times between February and early July and most economists expect a repeat boost at least once more this year.

Five of the economists surveyed anticipate no increase or a slight easing of short-term rates by year's end.

In other news, sales of existing single-family homes held steady in May, for the third consecutive month, despite the highest interest rates in two years, according to the National Association of Realtors.

May sales crept slightly higher than April's at a seasonally adjusted annual rate of 4.1 million units, up 13 percent from last year's 3.6 million rate.

Home resales also posted good year-on-year gains. The long-depressed Northeast led with a 24 percent jump from a year earlier, on a 1 percent price decline. The West and South each posted a rise of 15 percent while the Midwest reported a 6 percent increase.

CONSUMER PRICE INDEX*

MAR.	APR.	MAY.	JUN.
+0.3	+0.1	+0.1	+0.3

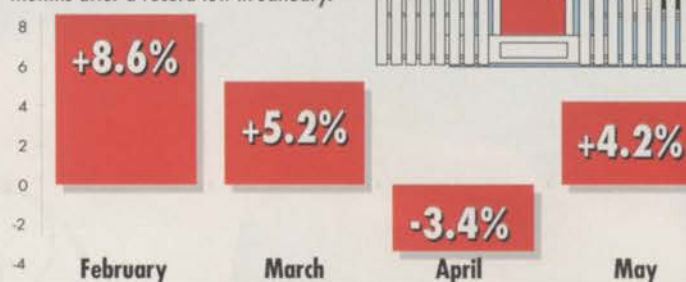
SALES OF EXISTING HOMES*

FEB.	MAR.	APR.	MAY
-9.6	+6.0	+1.2	-0.7

*Percent change from preceding month (seasonally adjusted).

IN THE MARKET?

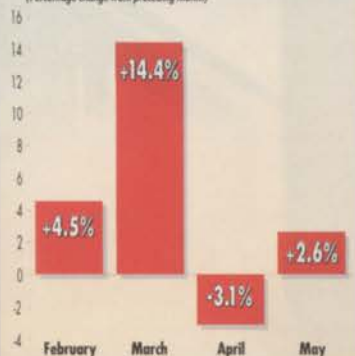
New home sales see-sawed slightly in recent months after a record low in January.



Source: Bureau of the Census

HOUSING STARTS

(Percentage change from preceding month)



Source: Bureau of the Census

UNEMPLOYMENT RATE

(Percentage change from preceding month)



Source: Bureau of Labor Statistics

WEATHER WATCH

CLEAR TO CLOUDY SKIES

A day often will start out sunny with small cumulus clouds popping up around mid-day causing showers by late afternoon. As the sun sets, the clouds fade away and the night is clear.



Source: American Meteorological Society

The National Weather Service's 60-day outlook calls for generally warmer than normal weather over most of the western, southern and central intermountain regions and over most of the eastern half of the nation. The only exceptions are the upper Mississippi Valley, the northwestern Great Lakes region and northern New England.

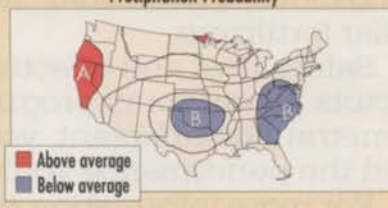
Above median precipitation is predicted only over northern Minnesota. Below median rainfall is forecast over Oklahoma, northern Texas, southern Kansas, most of Arkansas and southwestern Missouri.

60-DAY OUTLOOK FOR AUGUST AND SEPTEMBER

Temperature Probability



Precipitation Probability





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.

Stop by your Ford New Holland dealer and put the toughest skid-steer loader on the market to work for you. Working together, we'll give Mother Nature a little lift.



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.

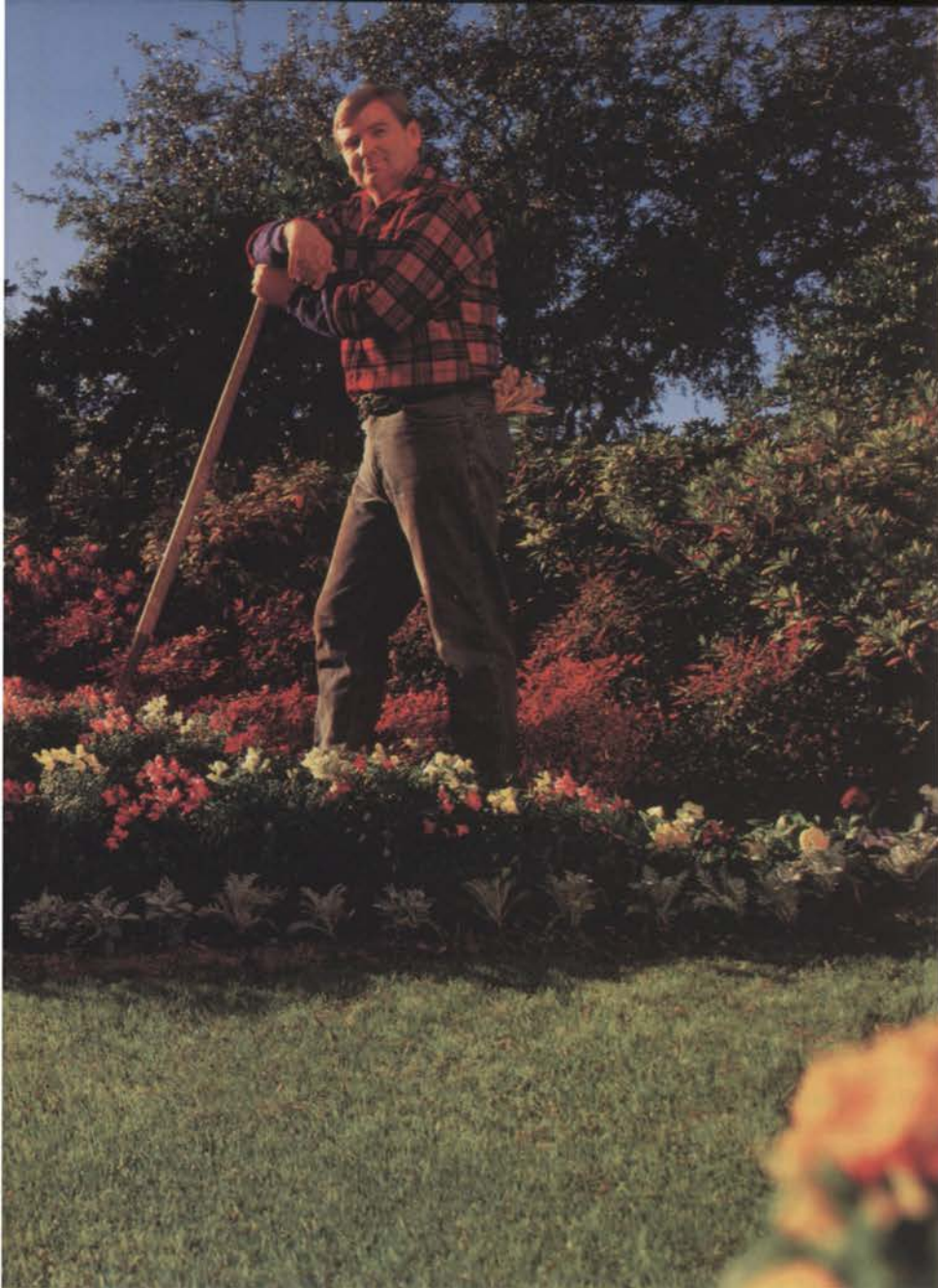
Other herbicides would require five applications to deliver season-long control. Gallery delivers all season long with only one application.

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.

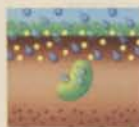
long-residual herbicides. And there's minimal risk of off-target damage.

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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☐ Municipal ☐ Landscape Contractor ☐ Golf Course

Address _____

City _____ State _____ Zip _____

Phone (_____) _____



08



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USE READER SERVICE #83

Environmental Forum

BEAUTY RANKS FIRST. Homeowners may not realize the environmental benefits that come from maintaining a healthy lawn, according to a Gallup survey sponsored by the Professional Lawn Care Association of America, the Associated Landscape Contractors of America, the American Association of Nurserymen and related industry groups.

While 12 percent of respondents chose "environmental benefits" (helping to purify and cool the air and filtering water draining into the ground), the number one benefit was "beautifying the neighborhood." A close second was "providing a beautiful place to relax with family and friends."

The Gallup survey conducted one-on-one interviews with 1,665 U.S. home dwellers over a wide demographic range, explained Ann McClure, PLCAA executive vice president. She noted that the findings will form the basis for PLCAA's upcoming public relations program, also providing targeted marketing data on buying habits and patterns nationwide. Participants are grouped by sex, three age groups ranging from 18 to over 50, four regions in the United States and size of community (rural, small town, suburb and city).

People living in rural areas tended to rate the environmental benefits of a lawn higher than their suburban or urban neighbors, reported PLCAA. College-educated homeowners between 30 and 49 years old, married, and earning more than \$40,000 also favored environmental benefits.

The survey asked participants for estimates of 1993 spending on three types of services: lawn/landscape maintenance, landscape installation/construction and landscape design. Results of the survey show that lawn/landscape maintenance had the highest sales at \$6.4 billion, followed by landscape installation/construction at \$5.6 billion and landscape design at \$381 million.

"It's surprising to those of us in the lawn care profession that the environmental benefits of a well-maintained lawn are not recognized more widely," said Lou Wierichs, PLCAA president. "Our society is the most environmentally conscious in history, yet the public apparently isn't aware that they are doing their part to help the environment just by taking care of their lawns."

RISE MEDIA TOUR. More balanced reporting of lawn and landscape issues was one goal of a recent tour targeted to the consumer media.

Allen James, executive director of Responsible Industry for a Sound Environment joined National Agricultural Chemicals Asso-



ciation president Jay Vroom and director of media relations Adele Logan in efforts to introduce their respective organizations to members of the media in Atlanta, Birmingham, Ala., and Des Moines, Iowa. James reported that their welcomes were "cordial and receptive."

RISE's purpose was twofold: to introduce RISE as a reference source on industry issues and to help bring about more balanced reporting.

"We recognized that many misconceptions have become embedded in the media and are then passed from one source to another. Eventually, they become 'facts,'" said James.

One example is the misconception about the amount of pesticides used on home lawns relative to pesticide amounts used in agriculture, he cited. In meetings with editors and television interviews, the group was able to make the point that the U.S. Environmental Protection Agency has determined the actual amount used as lawn pesticides is about the same on a per acre basis, not 10 times more — a figure often reported as fact. "Some issues are often misquoted and take a long time to overcome," James added.

The group visited metropolitan newspapers, the consumer magazines *Southern Living* and *Better Homes & Gardens*, farm magazines and local television stations. "We tried to choose media with large audiences," James explained. "We selected the *Des Moines Register* because it carries a lot of lawn care articles (that have not always been favorable to the industry) and because the area has a high number of anti-pesticide activists."

While evaluation of the initial promotion and introductory visits is "difficult," James reported that RISE has already received

follow-up calls from media it contacted asking for more information and comments. "Success may be indirect," he said, in the form of more favorable stories appearing and less negative reporting.

RISE and NACA plan to continue the media tour to other large metropolitan areas in the near future.

GETTING GOOD PRESS. Putting a good "spin" on the green industry's environmental benefits takes skill when dealing with members of the media. The best defense is a good offense, and that means being prepared with the facts, according to the Professional Lawn Care Association of Mid-America. While a reporter may call with specific questions in mind, skillful handling of the interview can accentuate the positive. Three points to stress with reporters:

- Lawns have measurable environmental benefits.
 - Turf pesticides undergo extensive research and testing (often 10 years or more) before they are marketed. Professional turf products break down into harmless materials due to moisture, heat and sunlight.
 - Lawn applicators are trained and licensed in the proper use of lawn products, unlike consumers.
- Focus on getting those critical points across during an interview, whether or not the reporter asks about them. A courteous, informed response can go a long way in delivering the green industry's message. Other common-sense suggestions include:
- Ask about the deadline. If more information is needed, say so and schedule another interview time.
 - Remember that nothing is "off the record." Good 'sound bites' make good copy, but can be embarrassing.
 - Personalize your message by stressing community roots and industry experience.
 - Explain integrated pest management in laymen's terms.
 - Don't be angry or attack the media. A knowledgeable response may encourage reporters to use you for balanced coverage of industry issues in the future.
 - View every media contact as an opportunity to accomplish your own goals.

MEDIA WATCH. *Lawn & Landscape Maintenance* is interested in receiving clippings of articles appearing in the consumer media on lawn and landscape maintenance issues. Send them to: Media Watch, LLM, 4012 Bridge Ave., Cleveland, OH 44113 or FAX: 216/961-0364. ■

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USE READER SERVICE #10

NEWS DIGEST

Monsanto Completes Sale to Rohm & Haas

Monsanto Co., St. Louis, completed the sale of Dimension turf herbicide and two other products in its pyridine family of chemistry to Rohm and Haas Co., Philadelphia.

The sale includes dithiopyr, the active ingredient in Dimension; Visor herbicide and its active ingredient, thiazopyr; and a developmental fungicide, thifluzamide. The sale also includes a manufacturing plant in Muscatine, Iowa, which will be operated by Monsanto for Rohm and Haas, and the worldwide rights to all related pyridine chemistry.

Compost Research Funds Cut in Half

Congress shot down proposed federal funding for composting research by the U.S. Department of Agriculture. An early draft of the USDA's research budget allocated \$1 million for composting research through the Agricultural Research Service, according to the Compost Council.

Congress Considers Disaster Assistance

Congressman Fred Gandy, R-Iowa, introduced bipartisan legislation to extend disaster assistance to nursery owners affected by natural disasters, particularly last summer's floods.

The bill, H.R. 4133, would correct what the American Association of Nurserymen considers inequities in the current disaster assistance program for nursery and other specialty crops, according to Ben Bolusky, AAN director of government affairs.

Scotts Realigns European Sales

Scotts-Sierra Horticultural Products Co., formerly Grace-Sierra Horticultural Products Co., will handle the marketing and sales of The Scotts Co. lawn and garden fertilizers and control products in Europe beginning Sept. 1. Scotts acquired Grace-Sierra last year and will use their existing distribution system.

Stens Adds Mower Parts To Its Commercial Line

Stens Power Equipment Parts extended its commercial line to include replacement spindle pulleys for Bobcat and Exmark mowers; gear box assemblies for Bobcat, Bunton, F.D. Kees and Exmark; caster yoke support arms for Bobcat and Bunton; caster yokes for Scag; output shaft support bearings for Exmark, Jacobsen, F.D. Kees and Snapper; spindle assemblies for Scag; belts for Scag; and blades for Exmark.

Show Planners Gear Up For Green Industry Expo; Predict Larger Trade Show

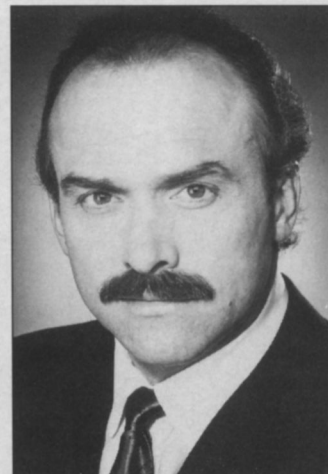
BOLSTERING GROWTH, profitability and professionalism of lawn and landscape businesses are the intended goals of the conference organizers planning the 1994 Green Industry Expo. The event is slated Nov. 14-17 at the America's Center at Cervantes Convention Center in St. Louis, Mo.

The three sponsoring associations — the Associated Landscape Contractors of America, the Professional Grounds Management Society and the Professional Lawn Care Association of America — are promoting those goals in their '94 conference themes.

"We have purposefully geared the conference(s) to the stated needs of (lawn and landscape professionals), and have balanced the program to be of equal value to everyone," said PGMS president Robert Rubel.

Plans are shaping up and anticipation is running high among trade show and conference sponsors, according to Eleanor Ellison, marketing and sales manager for PLCAA, which has been managing the GIE trade show since its 1990 inception.

At press time, 195 exhibitors had signed up for booth space. PLCAA is targeting 325. "Optimistically we're targeting 325, but realistically we're looking at about 300. There were 277 at last year's sold-out show," Ellison said. This year's exhibit hall is much bigger so a sellout isn't as likely, she added.



Rocky Bleier

"But if we continue at this pace, we will have a marvelous show this year," she said.

GIE attendees can expect to see an increase in exhibitors that manufacture retaining walls, landscape lighting and other hard goods, Ellison said. In addition, this year's exhibitor list will show an increase in mowing and maintenance equipment companies. "What we need now are more green goods — companies in the nursery industry. That's who we're targeting," said Ellison.

Another show management goal is to increase last year's attendance of 2,300 by 20 percent, or 2,760.

The '94 GIE will kick off with keynote speaker Rocky Bleier, former running back for Notre Dame and the NFL Pittsburgh Steelers. His address, titled "Being the Best You Can Be," focuses on helping professionals empower themselves and those around them. Bleier's fighting spirit enabled him to recover from a serious wound incurred in the Vietnam War to become a premiere NFL player.

Highlights of the three sponsoring associations include: ALCA presents "Competing in a Dynamic Economy...Growth Over the Horizon," as its theme. The association offers 14 educational sessions, including topics on improving productivity, marketing, advertising, employee orientation and training, safety and estimating.

PLCAA's theme this year is "Profit Through Professionalism." The conference includes a segmented educational track covering 23 topics in business, turf and plant techniques, government affairs/risk management and pesticide recertification categories.

PGMS designated "Gateway to Professionalism" as its '94 conference theme. The association's educational sessions cover, among other things, posting, regenerative landscapes for the 90s, small-engine emissions, the public's perceptions about pesticides, computer applications for the landscape industry, computerized tree management systems, PGRs, water scapes, benefits of season-long feeding for plants, using native grasses in the landscape setting and landscape lighting.

For the first time, PGMS plans to offer four hours of pesticide certification training, which will provide credits for state requirements in Missouri, Illinois, Tennessee, Kansas, Iowa and Arkansas. The charge is \$55 and sessions cover laws and regulations, diseases on turf and ornamentals; insects on turf and ornamentals, pesticide updates and new developments, pesticide labels and disposing of pesticide waste and applicator safety and worker protection.

"Our training program will meet most state requirements for recertification and go a long way toward initial certification," said John Gillan, executive director of PGMS.

Each association plans to offer preconference seminars and breakfast roundtables. The Outdoor Demo, which gives attendees a hands-on look at chippers, aerators, tree care equipment, mowers, hydroseeders and other equipment, will take place at nearby Forest Park.

The keynote address takes place Monday, Nov. 14, 2:30 to 4 p.m. Trade show hours are: Monday, 4 to 6 p.m.; Tuesday and Wednesday, 10 a.m. to 4 p.m. and Thursday, the outdoor demo will be 9 a.m. to noon.

Survey: GIE Attendees Mainly Managers

An independent survey shows that 67 percent of last year's Green Industry Expo were upper management, 45 percent were company owners and presidents and 22 percent were managers and superintendents.

In addition, nearly all — 92 percent — play a major role in the decision-making process for purchasing new equipment and services. Less than 8 percent of the attendees play no role in the decision-making process.

Almost half (46 percent) of attending companies show an annual volume of more than \$500,000. About 20 percent reported more than \$3 million in business volume.

Also, 67 percent offer lawn and landscape maintenance; chemical services, 51 percent; landscape installation, 45 percent; landscape design and build, 28 percent; irrigation, 23 percent; arbor services, 11 percent; garden centers and nurseries, 9 percent; and government and institutions, 6 percent.

Vigoro Finalizes Koos Acquisition

The Vigoro Corp., Chicago, completed its buy out of Koos Inc., Kenosha, Wis.

JACOBSEN MAKES THE CUT. Millions of people around the world watched the World Cup during June and July. They saw world-class soccer played on world-class turf. At Chicago's Soldier Field, site of five first-round matches, a unique circular mowing pattern was as much a topic of conversation as the final scores. Eric Adkins, assistant director of golf for the Chicago Park District used a Jacobsen LF-100 lightweight, fiveplex fairway mower with steerable cutting reels to create the unique mowing pattern. Soldier Field was completely resodded for the World Cup with four varieties of bluegrass, maintained at 1 1/16th inches.



Koos manufactures and distributes ice melt products as well as specialty fertilizers and vermiculite through its affiliate company, Shore Fertilizer, Plant City, Fla. Combined, Koos and Shore reported net sales of \$22 million in their most recent fiscal years.

Peter Lederer will continue as president of Koos, which will become part of Vigoro's lawn and garden business headquartered in Winter Haven, Fla.

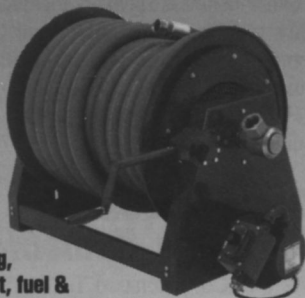
Homeowner Market Lucrative for Landscapers

Seventeen million U.S. households spent \$12.5 billion on professional landscaping and lawn care services in 1993, according to a recent Gallup survey. The study revealed that the number of homeowners using landscape professionals was up 29 percent over 1992.

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That figure is expected to grow by an additional 6 percent this year based on an improved national economy, an upturn in home building and the growing awareness of a properly maintained landscape to the environment.

Homeowner landscaping dollars totaled \$6.4 billion for lawn and landscape maintenance services; \$5.6 billion for landscape installation/construction and \$381 million for landscape design.

The average 1993 household spending on landscape services was \$721. The largest average household expenditures were on landscape installation/construction at \$2,971. Lawn and landscape maintenance followed at \$445 and landscape design at \$424.

Other survey highlights:

- Americans 50 and older accounted for nearly half of all expenditures on lawn/landscape maintenance services.
- The Western U.S. had the highest average expenditures on lawn/landscape maintenance services at \$536.
- Americans 30 to 49 years old accounted for 83 percent of landscape installation/construction sales; they also had the highest average spending in this category, \$3,482.
- Homeowners in the South had the highest average spending on landscape installation/construction, \$6,147.
- Women accounted for 70 percent of spending on landscape design services; their average expenditures in this category were twice that of men.

The Mid-Atlantic region accounted for nearly half of all landscape design spending.

The study, said to be the first of its kind, was sponsored by the American Association of Nurserymen, The American Society of Landscape Architects, the Associated Landscape Contractors of America, the International Society of Arboriculture, the National Arborist Association and the Professional Lawn Care Industry of America. It was conducted in cooperation with the National Gardening Association.

IA Taps Tutko Keynote Speaker

Dr. Thomas Tutko is slated as the keynote speaker for the 15th Annual International Irrigation Exposition and Technical Conference, Nov. 5-8 in Atlanta.

Tutko is a professor of psychology at San Jose State and author of "The Psychology of Coaching and Sports Psyching: Playing Your Best Game All the Time".

He has appeared on "The Tonight Show" and "Nightline with Ted Koppel" among others, and his work has been featured in a number of prominent publications including *The New York Times*.

Other business speakers include Tom Winninger, "Price Wars: How to Win the Battle for Your Customer," David Schmidt, "Customer Service is Serious Business;" and Tom Miller, "TQM: A Disguised Way of Getting You to do Your Job Better."

For more information contact: IA, 8260 Willow Oaks Corp. Drive, Suite 120, Fairfax, VA 22031; 703/573-3551.

Deere Acquires Textron's Homelite

Deere & Co. purchased Textron's \$246 million-revenue Homelite Division of portable outdoor power equipment. The transaction is expected to be completed by Sept. 30.

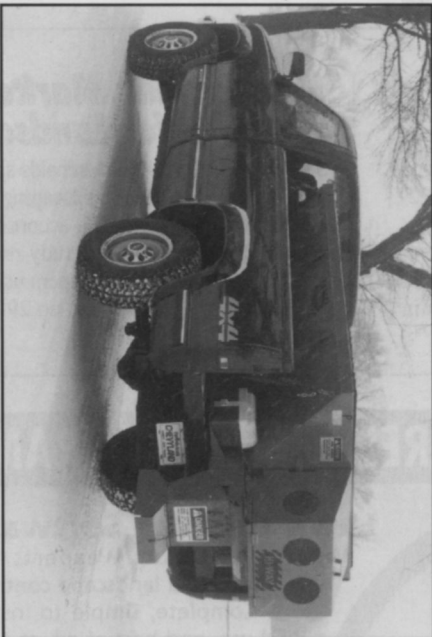
Deere & Co. officials plan to retain the Homelite product name and continue using Homelite's existing workforce, facilities and product lines.

Homelite, Charlotte, N.C., produces string trimmers, chain saws, leaf blowers, brushcutters and similar equipment for homeowner and commercial markets. Textron's decision to sell Homelite enables the company to focus on its core business segments — aircraft, automotive, industrial (which includes Jacobsen) and finance.

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Association News

THE PROFESSIONAL LAWN Care Association of America

recently formed its first

two state chapters, in Illinois and Texas.

Illinois PLCAA members established a chapter in March. David Harris, Liqui-Green Lawn and Tree Care, Bloomington, Ill., serves as president. Gary LaScalea, A-Perm-O-Green Lawns, Dallas, was appointed president of the new Texas chapter.

PLCAA members in the two states automatically become chapter members, and prospective members in Texas and Illinois can receive a joint chapter membership with PLCAA at no extra charge.

PLCAA continues to solicit interest from members or groups in other states who want to form a chapter or become an Allied Regional Association partner (turf organization affiliate). PLCAA currently has about 20 ARAs throughout the United States and in Ontario, Canada.

In other news, PLCAA is discounting \$40 off the registration fee for its 15th annual conference for members who sign up by Sept. 30. The conference, slated Nov. 14-17 in St. Louis, Mo., is scheduled in conjunction with Green Industry Expo, held at the America's Center at Cervantes Convention

For more information...

PLCAA

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

PLCAMA

638 W. 39th St.
Kansas City, MO 64141
916/561-5323

ALCA

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

FTA

302 S. Graham Ave.
Orlando, FL 32803
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PNA

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Harrisburg, PA 17102
717/238-1673

Center. The discounted, full-conference package includes free admission to the GIE.

The Associated Landscape Contractors of America

plans to hold its ALCA Executive Forum Jan. 22-25 at the Grand Floridian Hotel in Orlando.

The event's theme centers on business and management topics for landscape contractors. A case study will be presented on the management, service and creativity capabilities of Disney's landscape crews. A management session will explore formulas for providing

productive work environments.

In other news, ALCA's Interior Plantscape Conference, slated Sept. 18-21 in Las Vegas, will highlight educational sessions on key performance measurements for the interior-scape industry, new sources of profit, diversifying into exterior work and Christmas/holiday workshops. Several other sessions cover topics on improving business practices.

The Professional Lawn Care Association of Mid-America is planning a pre-conference seminar and tour at the Missouri Bo-

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tanical Garden Nov. 13 in St. Louis, Mo. The seminar and tour precedes the Green Industry Expo scheduled Nov. 14-17.

The PLCAMA presentation, titled "Green Lawns and Global Issues," will be given by Dr. John Kaufmann of Monsanto Agricultural Group, St. Louis. Kaufmann will discuss the greenhouse effect and the role lawn biosphere plays in the ecosystem. He will also explain why turfgrasses are the only plants to have adapted to the biosphere and why continuous care is required for their survival.

The **Florida Turfgrass Association's** annual conference will highlight a number of turf education sessions for lawn, sod production, landscape and utility professionals. The conference is scheduled Sept. 18-21 at the Broward County Convention Center in Fort Lauderdale, Fla.

Educational session topics for the lawn and landscape industry include increasing worker productivity, Department of Transportation regulations, pricing for profit, bioorganics, interpreting soil analysis reports and annuals for seasonal color.

The **Pennsylvania Nurserymen's Association** celebrates its 90th anniversary.

Following are some highlights from its history: PNA was established in 1904. The association established its landscape awards program in 1956. Almost two decades later, on July 31, 1973, the first Penn Allied Nursery Trade Show was held. In 1985, PNA co-sponsored the first mid-Atlantic Student Landscape Field Day.

The last six years have been particularly productive for the association. Of note for the lawn and landscape industry, PNA in 1989 established the Pennsylvania Foundation for Ornamental Horticulture, joined the PA Horticulture Trade Alliance as one of eight charter members and offered its first annual Pesticide Institute.

IN BRIEF...Ben Bolusky, director of government affairs for the **American Association of Nurserymen**, has been elected to the board of directors for the **National Council of Agricultural Employers**. NCAE is a national organization representing growers' labor interests and problems...**The Landscape Maintenance Association** appointed Tom Burish as executive director. Burish is owner of Island Grounds Maintenance in Bradenton, Fla., and is a founding member of LMA. Charles Bingman retired from the executive director position last

year...The **American Society of Landscape Architects** released the "Landscape Architecture Bookstore Catalog," which lists almost 500 available titles in landscape architecture. The catalog can be obtained at no charge by calling 800/787-2665...The **California Association of Nurserymen** published "Put Your Garden on a Water Diet — and Watch it Grow," an updated brochure on Water Wise gardening techniques. The brochure can be attained free of charge by sending a self-addressed, stamped envelope to C.A.N., 4620 Northgate Blvd., Suite 155, Sacramento, CA 95834...The **ACRT Institute of Arboriculture and Urban Forestry**, Kent, Ohio, offers two- to five-day line clearing training courses for becoming certified under the new Occupational Safety & Health Administration requirements. The new OSHA regulations require line clearance employers to certify by Jan. 31 that each employee — even those not working within 10 feet of energized lines on a regular basis — have completed necessary training...The **Mailorder Association of Nurserymen** has changed its address. Its new mailing address is P.O. Box 2129, Columbia, MD 21045. The phone number is 410/730-9713; fax, 410/730-9619.

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USE READER SERVICE #47

Franchising: A Formula For Success

*U.S. Lawns, the only firm
in the United States that franchises landscape
maintenance services, mixes a hands-on,
owner/operator philosophy with large-corporation
organization and resources to provide personal,
professional service.*

By Cathy Hoehn

THE SUREST PATHS to success in landscape maintenance are fairly unmi-
red, but those routes are often overlooked in today's dog-eat-dog market, according to Thomas Oyler, president of U.S. Lawns headquartered in Tampa, Fla.

One key to success, he said, is avoiding overextending a business' capital and resources. Another is determining the most likely path to success for a particular company and then developing a niche.

For U.S. Lawns, that path is franchising.

The beauty of the franchising concept is two-fold: One, it's easily made profitable, Oyler con-

tended. Two, it allows customers to maintain personal contact with the company owner, a setup which, if managed correctly, helps the company convey the personality of a mom and pop business intertwined with the professionalism of a large corporation.

"I recognized that putting a branch manager in a small store is not the same as putting the entrepreneur in the small store," Oyler said. "You lose something when you have a branch manager in charge instead of the owner."

One thing you lose is profitability, he maintained. "Money comes back off of each franchise's royal-

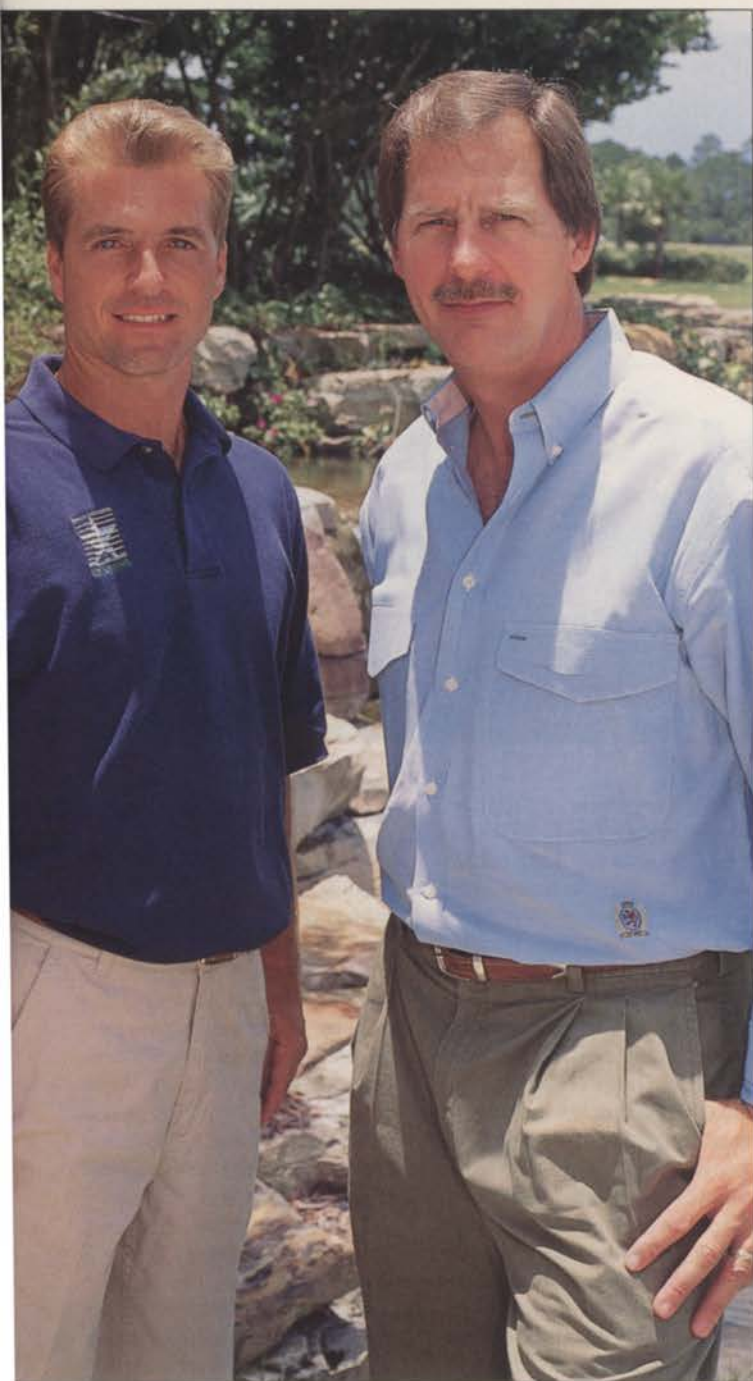
ties, income and franchise fee, and that goes back into building the company," he said. "And, by having an owner/operator, you eliminate two layers of management, which saves money."

Oyler's franchising formula requires employing a bit of marketing savvy and the ability to take risks. Defying the rapid-growth mentality common in today's professional lawn and landscape maintenance market, Oyler requires that each of U.S. Lawn's 16 franchises in Florida, Maryland and Chicago, which total \$5.5 million in revenues, maintain the same profile — small, lean, focused, professional

and profitable. Franchise owners are free to practice their own business management styles, beliefs and principles — as long as they adhere to the prescribed formula.

"We keep the concept simple: small companies — \$650,000 to \$2 million in size — specializing in maintenance. They are very focused in what they're doing. And the owners/operators stay close to their customers and employees. It's typical to what a small operator's profile is like. The basic difference is we educate these guys — give them management information systems, show them how to buy insurance, the best equipment to buy — so





Tom Oyler, right, developed the concept for U.S. Lawns. Now, Todd Moerchen, left, and Tom Ganz, center, handle day to day operations. They work hand in hand with the 16 franchise owners/operators to ensure smooth sailing. Photo: Eileen Connors.

they can focus on operations and sales."

Todd Moerchen, a franchise owner and vice president of operations for U.S. Lawns, and Tom Ganz, vice president of sales and marketing, split the responsibility for overseeing the franchises. They lend support and guidance to franchise owners in their respective areas, monitoring operations and helping solve problems.

Unique to U.S. Lawns is the company's methods for profiling and testing potential employees. Designed by Dr. Cabot Jaffee, a renowned industrial psychologist and U.S. Lawns' human resources con-

sultant, the well-researched system of profiling and hiring is integral to the company's overall operation.

THE START-UP. Oyler and Jaffee founded U.S. Lawns in 1986 when Oyler, who then owned Oyler Bros. Co., a \$12 million landscape construction and maintenance firm, decided his original company had reached a midlife crisis.

"We were growing so rapidly and the industry was changing so quickly, I began to believe we were becoming a dinosaur. Oyler Bros. was too large to effectively move with the marketplace, but too small to provide industry leadership. The

U.S. LAWN

HEADQUARTERS: Tampa, Fla.

FOUNDED: Spun off from Oyler Bros. Co. in 1986.

Founded by Tom Oyler and Cabot Jaffee.

OWNER: Shareholders. Principle stockholders are Thomas Oyler, president; Todd Moerchen, vice president of operations; and Thomas Ganz, vice president of sales and marketing.

PRIMARY SERVICES: Full-service landscape maintenance, includes mowing, blowing, fertilizing, trimming, edging, sheering, irrigation maintenance and selective pruning for commercial, industrial and a few residential clients.

NUMBER OF FRANCHISES: Total: 16. There are 13 in Florida, two in Maryland and one in Chicago.

EMPLOYEES: 130 full-time, about 10 part-time.

1993 SALES: Approximately \$5.5 million.

1993 SALES FOR LARGEST FRANCHISE: \$1.5 million.

EXECUTIVE SUMMARY

THE CONCEPT: To offer a focused, full-service landscape maintenance service through small, independently owned and operated franchises. Each franchise maintains slow, steady growth while emphasizing ongoing training, business development and industry awareness.

PROJECTIONS: \$6.5 million for 1994. Also, plan to grow to 20 franchises by year's end, and add six to 12 new franchises each year thereafter.

FUTURE CHALLENGES: Keeping small-franchise owners/operators profitable and on the cutting edge of technology, technical equipment and human resource selections.

GREATEST OBSTACLE: Teaching owners/operators to maintain low overhead and to spend within their means.

PRINCIPLE OWNERS

THOMAS OYLER: President of U.S. Lawns. Age 43.

Received a bachelor of art degree in Philosophy from Seminole College, Maitland, Fla. His job history includes founding Oyler Bros. in 1973 as a landscape maintenance firm.

TODD MOERCHEN: Vice president of operations. Age 30.

Attended Wawasee High School, Syracuse, Ind. Worked at Wawasee Golf course for two years, then operated a small landscape maintenance company in Indianapolis from 1984-89.

THOMAS GANZ: Vice president of sales and marketing.

Age 33. Attended Toms River South High School, New Jersey. Founded and owns Ganz International, a Hollywood, Fla.-based landscape maintenance and construction firm, in 1979.

company did not have the financial resources or time to install training programs, safety programs, hazardous communication programs — all the things I saw emerging in the industry that require overhead, additional personnel, etc."

Market conditions — decreasing market prices, tighter profit mar-

gins and increased competition — made the time ripe for starting a landscape maintenance franchise. "I saw more people entering landscape maintenance for two reasons — one, a lot of construction businesses would be forced to do maintenance if the economy went sour, which it did, and two, it's a low-capital entry market."

He also envisioned enabling small business owners to provide professional images and access corporate resources yet maintain close, personal contact with customers.

The result was a decision to divide Oyer Bros. into two companies. Oyer Bros. would fervently pursue large, high-capital jobs, such as resorts and golf courses, while the new company, U.S. Lawns, would handle low-capital route maintenance which "was the stuff I cut my teeth on," Oyer said.

The first franchise Oyer and Jaffee tested wasn't really a franchise.

Jaffee's son, a recent college graduate, was given a region and supplied with a manual, market profile, uniform and the assignment to sell maintenance. "We gave him a minimal amount of support, and he grew the business like wildfire. It was doing extraordinarily well — grew to about \$450,000 in sales within a year. We said 'this concept seems to work,' so we started selling franchises in about 1987....Marketing the idea was pretty tough — we didn't have any experience in franchising."

U.S. Lawns sold only three franchises by 1989, when Environmental Care Inc., a subsidiary of Environmental Industries Inc., Calabasas, Calif., bought Oyer Bros.' landscape maintenance division. "That turned everything upside down. I had been using Oyer Bros. as an incubator for training. Losing that slowed us down a little bit," Oyer said.

Oyer's contract with ECI required he work for that company to help provide a smooth transition. He put an assistant in charge of managing the few franchises while he worked at ECI and set up Oyer Construction as an independent corporation.

"He (the assistant) limped along with the business, didn't really get it going," Oyer said. "The long and short of it was after about two and a half years of not doing much with it, the owner of my second franchise, Todd Moerchen, came to me and said 'Let me get involved and you get back involved.'"

Today, Oyer remains at ECI, serving as vice president of business development for the golf management division. He sold Oyer Construction to Valley Crest Landscaping, an Environmental Industries subsidiary, in 1992, and now only devotes a few hours a week to



U.S. Lawns. "I hired Tom Ganz, to help sell and market the franchises. He does very well with that. I am still involved primarily with financial analysis, occasionally visiting branches, doing audits. I also help set up banking. That is my area of expertise."

NUTS AND BOLTS. U.S. Lawns prides itself on offering a focused yet full-service lawn maintenance repertoire. Each franchise offers a slightly different range of services, but the general core includes mowing, edging, trimming, fertilization, irrigation maintenance, selective pruning and sheering. Moerchen also offers pest control; others provide limited landscape construction services.

"We offer full-service remedial landscaping. But we probably don't offer the range of services of our competitors. We don't believe you can be good at everything you do. We believe you can outsource certain things more effectively than going through the learning curve and capital requirements to do it yourself. We keep the guys focused on maintenance," Oyer said.

The fee for starting a U.S. Lawns franchise ranges from \$15,000 to \$40,000. U.S. Lawns usually studies and targets a particular region, but young, independent contractors already established in an area also approach U.S. Lawns to convert their business into a franchise, according to Ganz.

"We've had some guys approach us who already have a \$50,000 or \$100,000 business. They're hard-working but they've hit a wall and are unsure where to go from there."

That's the prototype franchise owner/operator Ganz plans to continue courting. "When I joined the company, the first change I made was to take the marketing in a new direction. They were seeking candidates from people who had never been in maintenance....My idea was to search for contractors that seemed to have a good handle on the physical part of the business — running crews, getting the work done properly, etc. Then we could teach them how to attract, train and retain quality people, give them high-end corporate images, and give them the U.S. Lawns story line that they could go out and sell to the public."

Two of the company's original five franchises failed in the late 1980s. One franchisee in Ohio lost \$75,000 when a major account declared bankruptcy. The other, located in St. Louis, Mo., closed its doors through mutual agreement between U.S. Lawns and the franchise owner. "He wasn't marketing or selling anything. We just came to an agreement to part ways," Moerchen said.

Despite its early faltering, 1994 projections indicate that U.S. Lawns' shaking-out period is well over. The company held five branches in April 1993 when Ganz joined ship; it now has 16 branches and three

U.S. Lawns developed a specialty niche by focusing on offering a full range of landscape maintenance services.

pending — two in Florida and one in Maryland. The plan is to reach 20 by year's end, which Ganz predicts will occur by mid-September.

Oyer hopes to grow the company by adding one franchise per month, but he said six a year is more likely. "We'll grow slowly. We're going to begin fanning out around the country. Ultimately, can we have 100 \$1 million per year franchises? Yes. How long will that take? I don't know. Five years, eight years, 10 years...it's hard to say. But we'll get there."

He claims that all the franchises are profit-makers. "They're all doing very well. We'll probably do a total of \$6 million in sales this year, maybe \$7 million."

The franchises average about \$250,000 in revenues, according to Ganz, although a few range between \$600,000 and \$1 million.

Profit for the overall company in 1993 was about 12 percent, according to Oyer. "Traditionally franchise companies are very profitable, because we live off royalties. I think it's safe to say we have a 12 percent corporate profit," he said.

Once a U.S. Lawns franchise is purchased the owner is granted authority to operate a single unit or multiple units in a market area. Each franchise receives an operating manual which covers operations, sales

(continued on page 24)

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USE READER SERVICE #32



LL 8/94

Cover Story

(continued from page 22)

programs and office procedures. The owner must purchase office equipment, supplies, opening inventory, storage facilities, working capital, equipment, vehicles and introductory advertising, for which U.S. Lawns offers up to five-year financing. Total cost — on top of the initial franchise fee and 4 percent royalties — runs about \$25,000.

Moerchen and Ganz oversee equipment purchases for each franchise in their territories. While some franchisees go through specific dealers with which they're most comfortable, group purchasing often provides the opportunity for discount prices.

"We're trying to consolidate equipment buying. It's a little difficult at times; everyone needs mowers at different times, or has credit set up at one place or another," Moerchen said. "Service and reliability is key. We never dictate the type of equipment to buy, but we do give recommendations. Unless they have their own mechanics, we

recommend they purchase locally, where they receive better service."

Each franchise measures production rates for all its equipment. "We take every piece of equipment and measure its ability to perform in the field, with an average employee behind it. We know what it can produce, how many man hours it

U.S. Lawns prides itself on offering a focused yet full-service lawn maintenance repertoire.

takes to do the job," Oyler said.

Overall, U.S. Lawn franchises owns about 70 vehicles, 100 mowers, 150 blowers, 200 edgers, 200 weed eaters, 100 shears and 45 pieces of fertilizer equipment. The average mower lasts two to three years, while the small equipment generally runs 12 to 18 months.

At about the \$300,000 annual

revenue mark, franchises are encouraged to hire their own mechanic. "That's really important. Once they reach a certain size — and it varies for each franchise owner — they should hire a full- or part-time mechanic to streamline the efficiency of the organization," Moerchen said.

FITTING THE BILL. Ganz, Oyler and Moerchen claim three major factors contribute to the franchise system's overall success — its human resources strategy, training program and progressive business strategies.

Jaffee designed an elaborate (and expensive — each test costs up to \$80,000 to research and develop, said Oyler) testing system for profiling potential employees to ensure they match the company's needs. The first test Jaffee developed was geared for superintendents and owners, but a modified version is used for selecting personnel at the franchises. Each test lists a series of multiple choice, situational questions. A test-taker's responses are used to develop a psychological profile on that indi-

vidual, which in turn helps determine whether that person fits into the company's structure.

Training is also a vital component. Once a franchise is established, the new owner spends five days at Tampa headquarters learning operations, employee selection, marketing, purchasing power and other business functions. The trainer — Ganz, Moerchen and sometimes Oyler — then spends five days on location with the new franchisee marketing, visiting each property (either an already established customer base or cold calling, depending if the franchise was a pre-existing business or a start-up) and ensuring things run smoothly, according to Ganz.

Communication continues regularly — sometimes daily — between the corporate office and franchisees. "We're there basically to provide support, answer any questions that they have. That's the neat thing about this: You have a complete network to work from for obtaining advice or to discuss things going on in the industry. That's

(continued on page 28)

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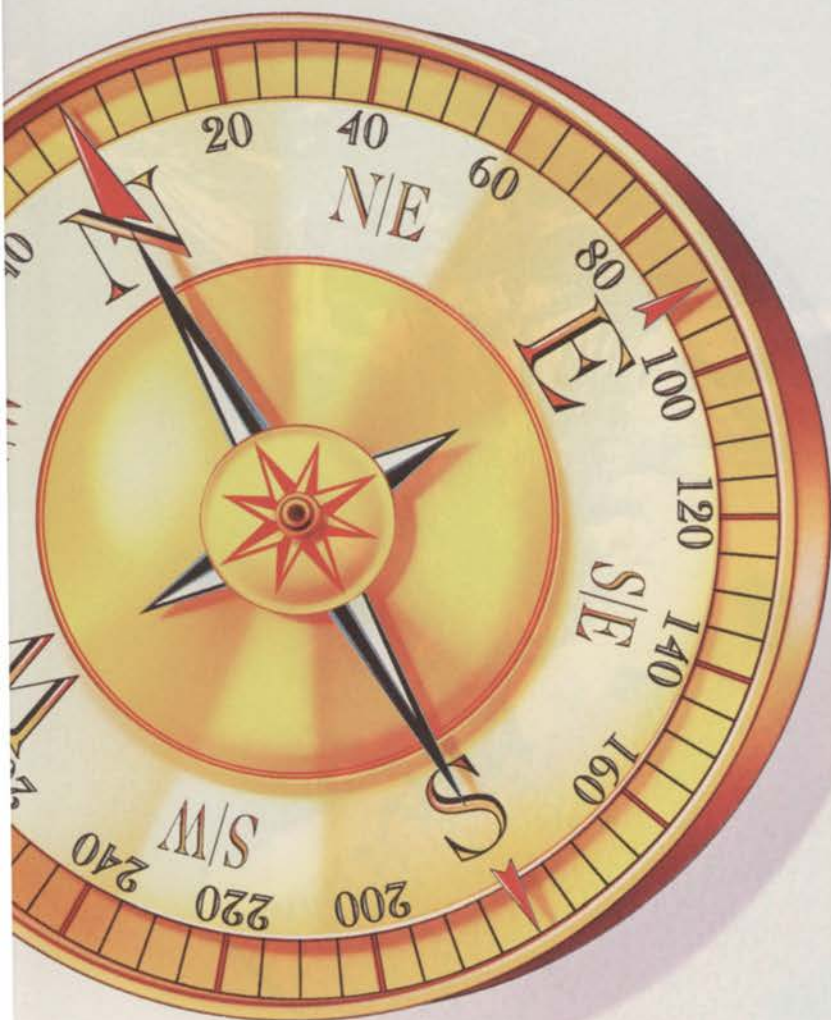
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USE READER SERVICE #50

Cover Story

(continued from page 24)

how I learned a lot about my business," Moerchen said.

Employees who reach the ceiling in terms of promotions within a franchise, usually a superintendent, may receive the option of "branching off" to form a subsidiary franchise. The "master" franchisee from which it spun off then oversees those operations and is awarded a portion of the royalties. Two master franchises are currently in the works, according to Ganz. "We hope to try that in Chicago as well. That will make it easier for us."

The final factor for franchise success is a honed business strategy that keeps tight reins on each franchise's spending habits while ensuring profitability. The job costing, estimating and billing procedures, practiced by most franchisees, ensure they're running a tight and tidy ship.

Estimating has evolved into an almost exact science, according to Ganz. "We use the same pricing structure for large properties as well

as small properties," he said. "Property owners are wowed by that. They're used to working with people that use gut instinct to determine how long a job will take."

The most important task for the corporate liaison is monitoring growth, according to Oyler. "That's extremely important. I watch that very carefully," he said. "If the franchises are growing too quickly their labor gets out of control."

FRANCHISEE PROFILE. While each franchise varies vastly in terms of size and revenues, *Lawn & Landscape Maintenance* chose to profile Moerchen's company — the largest within U.S. Lawns.

Moerchen started a franchise from scratch in 1989 and then purchased and merged an existing U.S. Lawns franchise, worth \$80,000 net revenue, in 1991. Today the Tampa Bay area company boasts \$1.5 million annual revenues and projects \$1.75 million for 1994. The company employs just under 40 full-time people, none of whom are seasonal.

Within the franchise, there is a

supervisor, a certified pest control operator, an irrigation person and a full-time mechanic.

Equipment inventory includes about 25 midsize walk-behind mowers (up to 60-inch machines), 36 blowers, 75 weed whackers, 24 shears, 30 edgers, 16 trucks, 12 trailers and a 300-gallon sprayer rigged on a trailer for fertilization.

Moerchen's three- to four-person crews generally carry two to three midsize mowers, two to three blowers, two edgers, two or three weed whackers, a gas can and pruning shears on a pickup truck with trailer. Separate crews handle detail pruning, pest control and irrigation.

Most of his mowing jobs are no more than 10 acres and require maneuvering around detailed landscape features. Midsize walk-behind mowers with mulching capability are ideal for the task. "We don't bag, we use high-lift blades. Sometimes we will rake or double cut if it's called for," he said.

Most of Moerchen's accounts are industrial or commercial; the latter includes apartment, condo and office complexes, strip malls and

homeowner association lots.

Moerchen's franchise has grown about 100 percent each year since its 1989 inception, until this year. The company reported about \$150,000 annual revenues in 1989; \$300,000 in 1990; \$750,000 in 1991; and \$1.1 million in 1992. The company broke even the first year, then showed 3 percent to 4 percent net profit the second year; 5 percent in year three, 6 percent the fourth year and 8 percent, or \$90,000, in 1993, Moerchen said. He anticipates about a 15 percent profit this year.

Moerchen plans to maintain about a 15 percent annual growth rate. "We'll concentrate on quality and efficiency. Get that settled. We'll also focus on training."

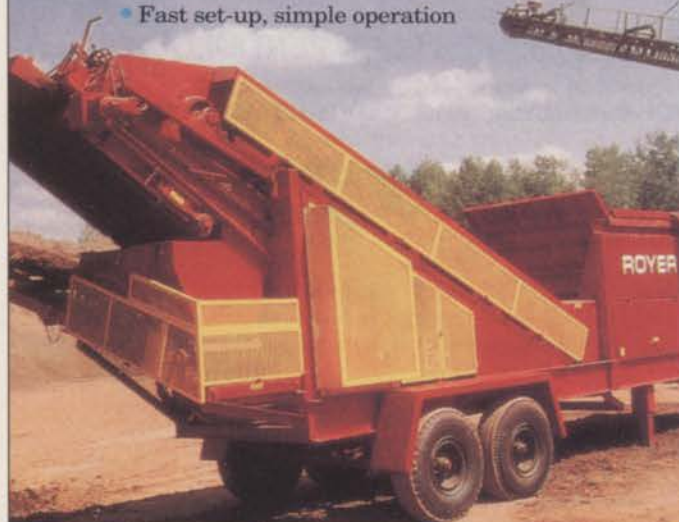
In five years, he anticipates the franchise will do about \$2.5 million. "Getting too large would make it difficult to stay close to our clients. We don't ever want to lose our ability to do that."

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

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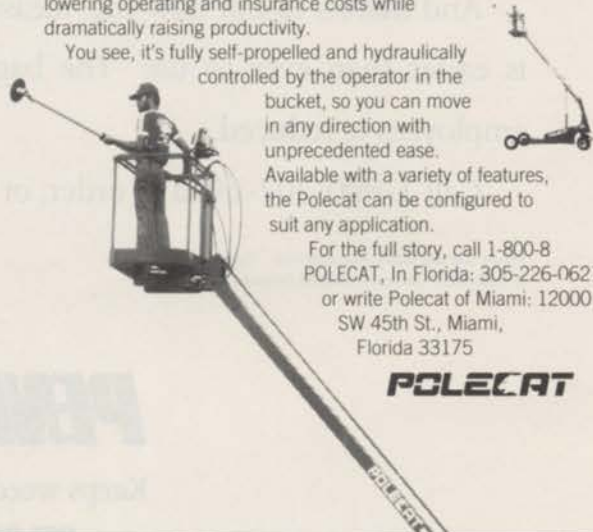
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USE READER SERVICE #13

There's More To Fertilizing Than N:P:K

Traditional fertilizer formulations are changing as manufacturers experiment using less nitrogen, reduced phosphorous and more potassium. A growing number of micronutrients are finding their way into formulation ratios as well.

By Bob Gitlin

THE TURNAROUND in NPK ratios began about 10 years ago.

Traditional fertilizer formulations were devised by university researchers who discerned what nutrients existed in turf and believed that fertilizers should those same ratios of elements.

"The formulations were very high in nitrogen with very little P (phosphorous) or K (potassium)," explained Bruce Augustin, fertilizer product manager for LESCO, Rocky River, Ohio. "Now we're seeing formulas like 24:5:11s (24 percent nitrogen, 5 percent available phosphorous, 11 percent potassium), where you've got about two parts of nitrogen to every one part potassium. Our 24:5:11 with iron and manganese is selling well across the United States."

Popularity of certain fertilizer blends goes through cycles, according to Dean Mosdell, director of new product development at The Scotts Co., Marysville, Ohio. "Blends without phosphorous were popular five to eight years ago. That trend is probably declining," he said.

The move away from phosphorous came about when environmental activists began blaming fertilizers for contaminating public waterways — although lawn industry experts claim laundry detergent phosphates are the real culprits.

Nonetheless, some states such as Michigan and Minnesota have banned use of fertilizers with phospho-

rus, Augustin said. "There's a perception that there's groundwater or surface water contamination with phosphorus. But that doesn't happen with turf." Still, his and other

companies are marketing N:P:K formulations to suit those markets.

In the late 1980s, soil analysts decided that, because phosphorous remains fixed in the soil and builds

up overtime, less needs to be added to fertilizers.

As use of phosphorous faded, it appears potassium picked up the slack. "In the last four or five years, more emphasis has been placed on higher potash (potassium), especially for golf course greens with sandier soils. You saw ratios of 1:0:2. Lately, especially for golf course turf managers that deal with high sand content, 2:1:2 is a common analysis to apply."

Potassium tends to leach less rapidly in sandy soils than nitrogen, and thus has popular applications in Florida, parts of Michigan and the Eastern Seaboard, where it's difficult to get nitrogen to remain in place long enough to be absorbed by plants.

In addition, higher amounts of potassium builds resistance to drought, heat, cold and other stresses, according to Frank Reynolds, owner of the 12-employee Reynolds Lawn Care Inc., North Branford, Conn.

Whether in granular or liquid form, new NPK configurations are being tested in various regions. Rainfall, sun or shade, topography and other variables affect what goes into the final products.

MICRONUTRIENTS ARE KEY.

A portion of fertilizer research these days is focused not on NPK ratios but the micronutrients being added. Manufacturers also have begun offering fertilizers with reduced levels of nitrogen while adding supplements of iron or manganese for faster green-up with less overgrowth.

"Instead of using
(continued on page 32)



This tree and shrub injection of fertilizer sends nutrients directly to the roots.
Photo: Moyer & Son

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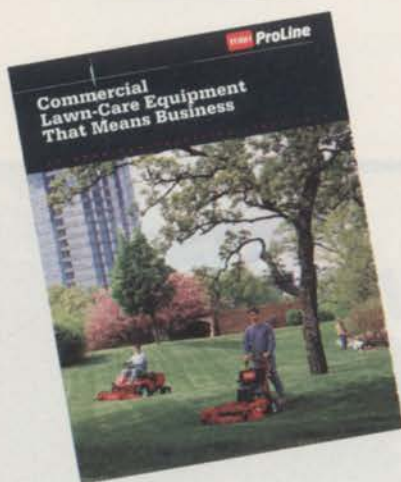
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USE READER SERVICE #33

Fertilizer Trends

(continued from page 30)

0.9 pounds of nitrogen, they may use 0.7 pounds and add iron to improve color," Mosdell said.

Iron and manganese are often applied on turf in the Southeast, such as in South Carolina and Georgia. Other nutrients might be used as supplements in the Northeast which has heavier, more acidic soils.

Micronutrients can be used mainly for limited color enhancement, and usually are applied in small quantities, said Doug Masters, lawn fertilizer marketing manager for The Andersons, a fertilizer supplier in Maumee, Ohio.

Iron in slow release fertilizers doesn't achieve quite the depth of green as quick release, said David White, director of marketing for CoRoN, Souderton, Pa. "The slow releases don't give you that deep, intense color response that urea does. Urea is a quick release. Bam, you put it down, you get color and growth. But that's the problem — you get too much growth."

Some contractors opt to stick with the standard 28:3:10s or 32:3:10s, maintaining nitrogen levels rather than adding micronutrients, he added. "They're adding micronutrients only if they have new customers who want to make the lawn to look really good, but not make it grow faster."

Augustin concurred that there is growing interest in using micronutrients to provide color without the nitrogen growth. "This is important particularly in the summertime, when you don't want to promote lush turf. If you use moderate amounts of N you can achieve the same great color — if you include iron and manganese quite often."

Larger companies are less likely to want to pay to add the extra step of using a backpack blower to spray the iron and manganese granules off the sidewalk as a last step. "Those micronutrients will stain," Augustin said. Some companies decide not to use the agronomically recommended supplementary nutrients at all, for this reason.

CHEMICAL COMPATIBILITY. Getting the fertil-



A wide array of fertilizers containing varying levels of nutrients are available to the professional contractor. Photo: Ringer

izer blend right is not an exact science. Phosphorus ties up iron, which can be a maddening but not impossible problem to overcome.

"If you use a standard hardware-store-formulation NPK, you possibly don't have any iron in there," said Roger Albrecht, owner of 43-franchise Nitro-Green Corp., based in Fairfield, Calif. "You won't get a very good looking lawn. It won't have the iron it needs to make it green. Iron gives it the green color. But you can put all kinds of iron down and it might not be available to the plant because of a low soil pH. If you add phosphorus, that also ties up iron."

Trial and error is often what it takes to figure

**Trial and error is
often what it takes
to figure out the right
fertilizer formula
for a specific
type of job.**

out the right fertilizer formula for the job. "You have to do some soil testing to see if there are any nutrient deficiencies in particular," Mosdell said. "And then pick a formula to satisfy that demand by the plant. On new seedlings, you would use a lot of high-phosphorus specialty fertilizer to stimulate

growth." Once the seedling develops roots, however, less phosphorus is needed.

Some "amazing chemistries" have hit the market that enable applicators to keep phosphorus levels down, doing foliar feeding with an iron supplement bound up with phosphorus in a

(continued on page 34)

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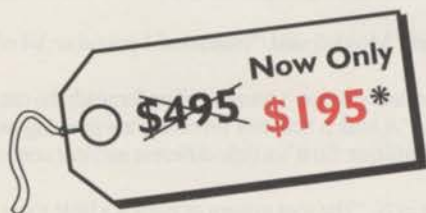
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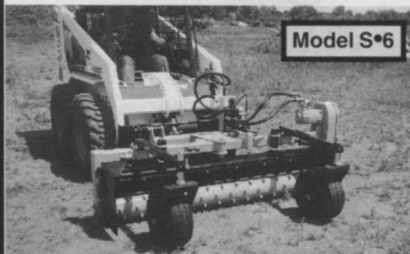
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Fertilizer Trends

(continued from page 32)

synergistic way, Albrecht said.

This kind of product "buffers your tank to a pH of between 6 and 7, so you're not running around with a tankful of stuff that's a pH of 4," which would negate the value of an otherwise well-mixed tank of fertilizer. "If you're putting down a bunch of phosphorus, you can put down all the micronutrients you want but they may not be available to the plant," Albrecht reiterated.

Chemical compatibilities have a lot to do with creating a successful tank mix, said White of CoRoN. "A mind-boggling array of nutrient sources exists: nitrogen, phosphorus, potash, iron, sulfur, manganese. You start looking at all the choices. But when you start building a fertilizer, you have to look at each individual ingredient to determine what will mix and what won't," he said. "For instance, any products with low pH, acid pH, will affect the quality of the liquid slow release."

Liquid formulators take a wish list from the lawn service, and see what they can do from there. "We look at the raw materials available. We can then come back and say, 'Well I can't make a 20:10:10 but I can make a 10:5:5.' Same ratio, you just use more material to achieve the same goal," White said.

Regional differences affect formulations as well. "Down in the Carolinas we sell a low-nitrogen, high-potassium product. In the Midwest it's more of a 3/4-pound, balanced type product," Masters said.

Although some degree of trial and error goes into determining the right formulations, most opera-

tors know what they need for certain conditions, such as heavy rainfall, sunny regions or shaded areas, he added. "They know they're going into a shaded area, so they will use a different product than they'd use in full sun."

POTASH USE IS UP. Mark Nuzum, president of Harmony Products, manufacturer of organic fertilizers, based in Chesapeake, Va., is keen on his new 6:2:12 with 3 percent iron. The potash is sulfated, low salt and has no chlorine.

Potash use is up, he said; there are even available all-potash sources sold commercially."

Ammonium sulfate is generating a lot of interest, based on positive test results. It's a promising tool in disease resistance. Additionally, the use of potash is gaining credibility among users.

organic products and traditional chemical/synthetic fertilizers.

Ross Eckstein, regional technical-support manager of (Tennessee-based) TruGreen/ChemLawn, is responsible for fertilizer formulations for the Texas-Oklahoma region. Out of the Dallas office, he takes into account all the variables. And they are many.

"It all depends on turf type," he said. "In Houston, San Antonio and Austin, which is mainly a St. Augustine turfgrass market, they'll fertilize in the spring and fall, usually 3:1:2 or 4:1:2. In summer, because it's hot and dry, they're spraying strictly iron, with a low amount of nitrogen, just to keep color and to not push growth during those stress periods."

In most of his other areas in summer, if crews are spraying, they'll switch to all nitrogen to

(continued on page 79)

FERTILIZING TREES AND ORNAMENTALS

NPK FORMULATIONS for trees and shrubs require using a different strategy than NPKs for grass, said Dean Mosdell of The Scotts Co., Marysville, Ohio.

Firstly, "it depends on how the fertilizer is applied. Operators who inject liquids for trees are probably going to want to use a little slower-releasing material than for turf," he said.

The same goes with granular tree and shrub fertilizers. They're generally slower in release rate than are the correlative products for turf.

"Rates will be higher than what's applied to turf," Mosdell said. "Instead of 1 pound or 3/4 of a pound, you may be at 1 1/2 or 2 pounds."

You'll also be adding more slow-release N, because you don't want a turf underneath the canopy turning darker green than the rest of the grass. "A mulch bed may involve grass growing underneath. Here, you drill holes and fill them with fertilizer. So it's a little different nutrient content, slow-release content."

Generally for trees, he said, analyses are higher in N. "The root system of trees is a little more extensive. They are in contact with greater soil area. So they tend to be a higher analysis in N and lower P and K."

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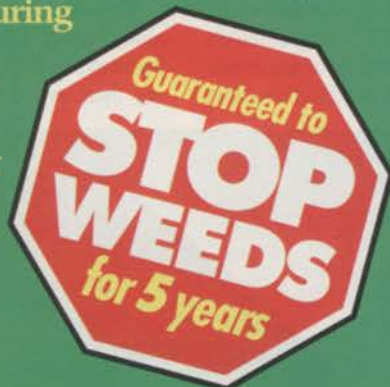
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Hydroseeding: Holding Water as a Landscape Service?

While hydroseeding appears to hold potential in lawn and landscape markets — particularly for large residential sites — high equipment costs convince many contractors to sub out the service.

By Tim Moran

WHETHER IT WAS the grass seedlings growing like hair on their straw hats, or the coating of mulch on their coveralls, there was a time when picking the hydraulic seeders

out of a crowd was easy.

They were the crews seen strung along newly finished interstate highways or subdivision sites, feeding their ever-hungry machines

which sprayed high plumes of seed, water and fertilizer mixtures across the bare ground.

"Of course, the backs of our trucks were always growing grass,

too," remembered Gary Pettee Jr., whose Hydro-Turf & Associates company was once a hydraulic seeding equipment manufacturer.

But with the federal interstate system virtually completed, the big 25-acres-per-mile seeding projects have declined. At the same time, technology has improved and the hydraulic seeding industry is now not only accepted, but considered highly developed.

That could open doors in the lawn and landscape maintenance markets which until recently has not embraced hydroseeding (a term commonly used in reference to hydraulic seeding and/or hydraulic planting) as a viable service. High equipment and maintenance costs were cited as the main impediments.

"We used to do hydroseeding in-house back in the late 1980s as the development market tightened up. But the prices for companies that did that just went down," said Ken Thompson, branch manager of The Ruppert Co.'s landscape branch in Atlanta, Ga.

Sod prices are another determining factor. Eric Olson, owner of The Lawn Company in Boise, Idaho, said his company offers hydroseeding, but does much more business in sod because Boise-area sod prices are highly competitive. Contractors based in other regions claim just the opposite; they offer hydroseeding simply because sod prices have skyrocketed.

Hydraulic planting methods are expanding within the residential market (and limited commercial segments), frequently at the request of homeowners whose imaginations are fired by the sight of a hydraulic planting rig spraying its green plume.

"We tell customers who may order a big truck and then decide not to put their name or any identification on the side of it, 'Hey, this has big appeal with the customer base. You'll get all kinds of calls,'" said Walter Butman, director of marketing for Finn Corp., an Ohio-based maker of the HydroSeeder line of equipment. "People will call

(continued on page 40)



Hydroseeding, sometimes cheaper than sodding, offers good results in seed germination. Photo: Finn

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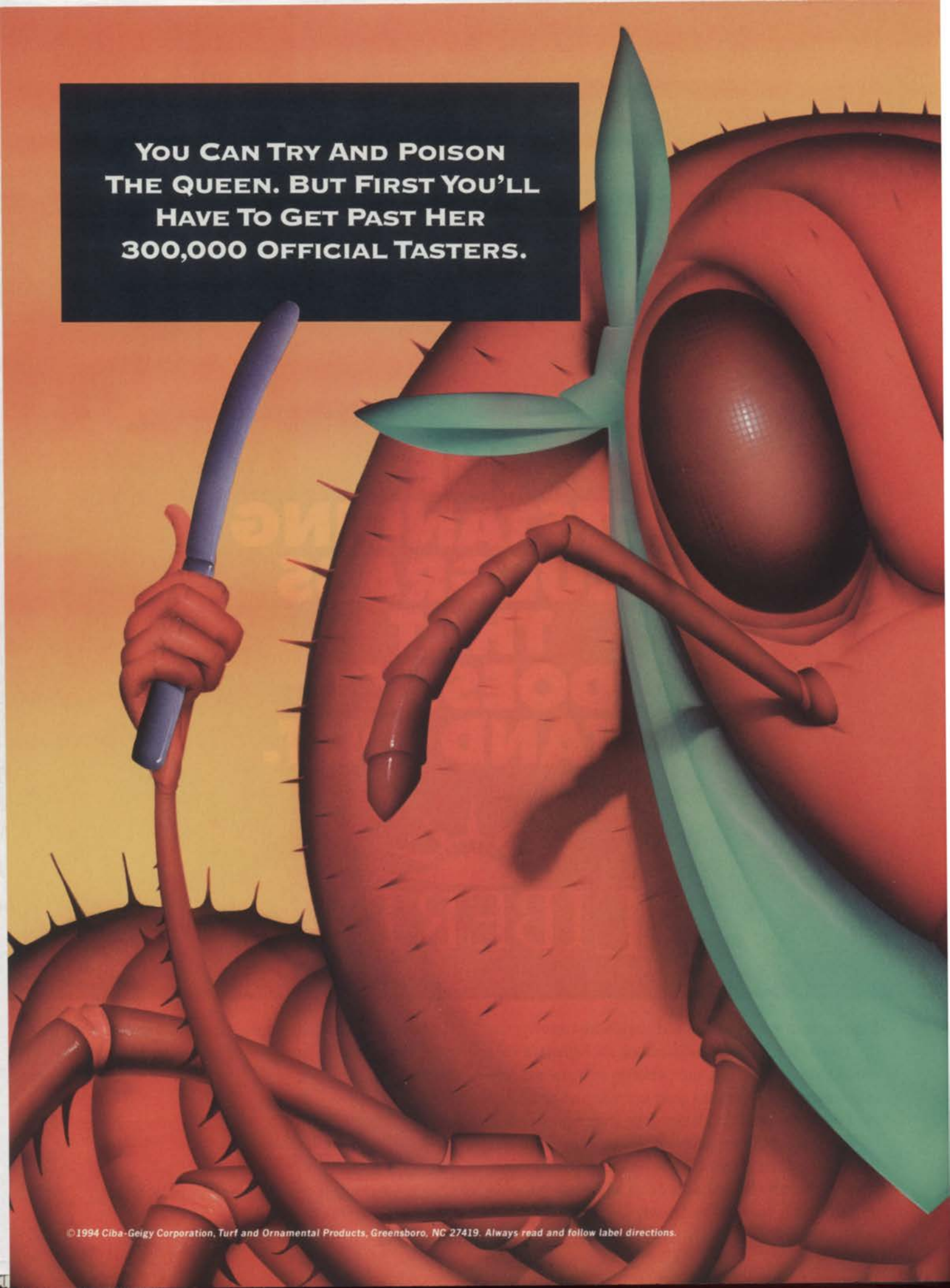


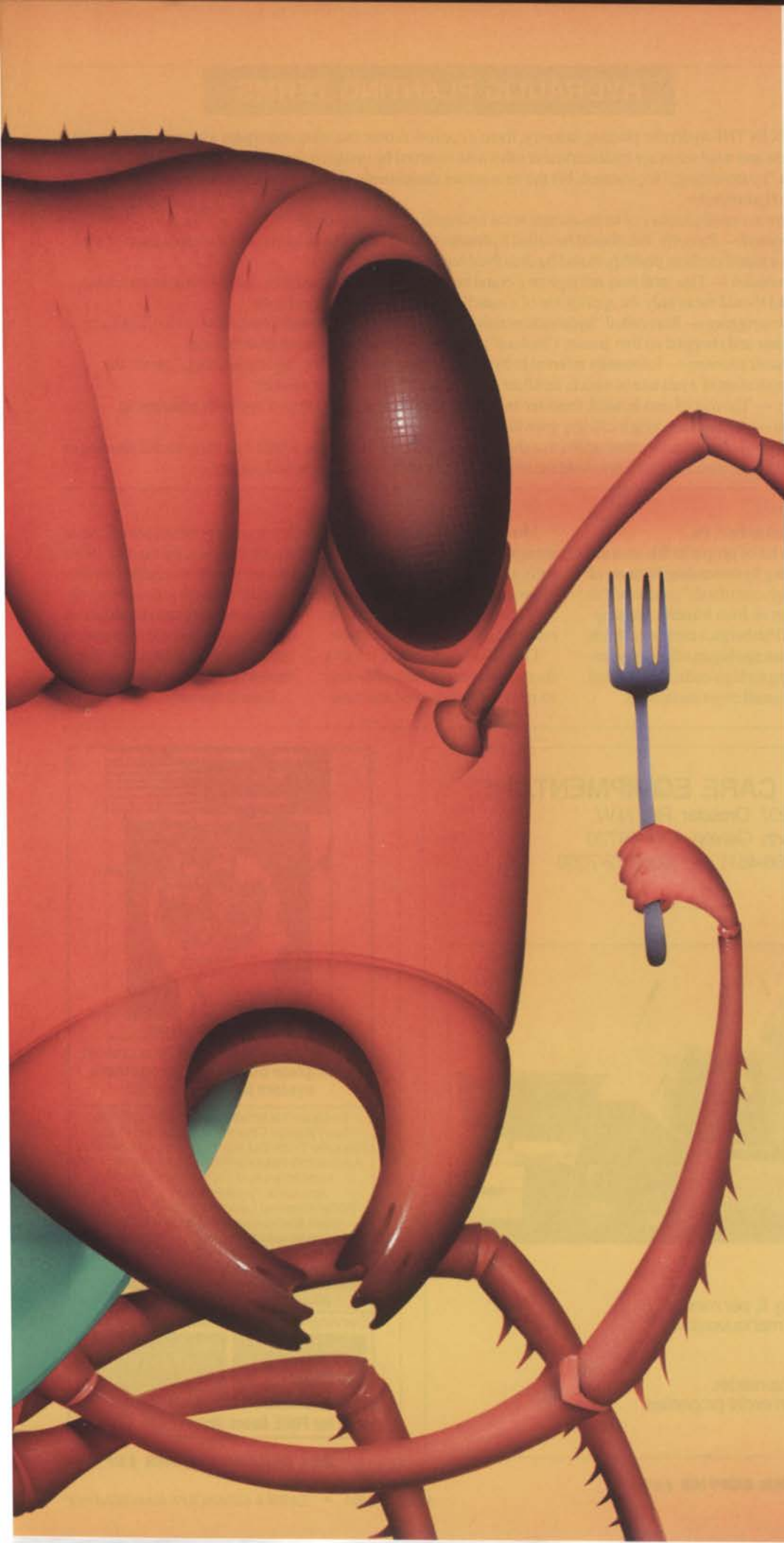
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Hydroseeding

(continued from page 36)

and say they want "That green stuff they saw being sprayed."

Confirms Bob Broughton, owner of Empire Landscaping in Hamilton, Mont., "We've noticed that people stop and watch it. It becomes a real event."

THE OLD WAY. While hydraulic planting equipment and techniques both owe their existence to the vast needs of federal highway projects begun in the early and mid-1950s, it's clear that they've worked their way down to levels at which lawn and landscape maintenance firms should at least be aware.

In some regions, where sod prices are high or terrain doesn't lend itself to either sod laying or seed drilling, hydraulic systems appear highly competitive in lawn applications, industry experts report.

"It's a little competitive around here, but even more so back East," said Bill Llofer, landscape design sales representative for Empire Landscaping. Llofer formerly

EVEN IN THE hydraulic planting industry, there's confusion over just what constitutes a generic term for the process and what terms are trademarked or otherwise reserved by involved companies. Industry pros will talk about "hydroseeding," for instance, but the term comes dangerously close to Finn Corp.'s registered equipment name HydroSeeder.

Here's a small glossary of terms current in the hydraulic planting business:

Hydroseed — Properly, this should be called hydraulic seeding, and should mean only the application of seed in a liquid medium possibly including dissolved fertilizer.

Hydromulch — This term may infringe on a brand name. Properly, this should be called hydraulic mulching, and should mean only the application of a mulch in a liquid-borne sprayed form.

Hydrosprigging — Also called "hydrostolonization," means the application of a mixture of mulch, fertilizer, water and chopped up live grasses ("stolons") capable of reproduction from growth nodes.

Hydraulic planting — Informally referred to by many as "hydroseeding" or "hydromulching," means the application of a mixture of mulch, fertilizer, seed, water and sometimes a binder.

Slurry — The mix of mulch, seed, fertilizer and water ready to be sprayed from a hydraulic planting rig.

Stolon — A live plant sprig including growth nodes.

Tackifier — A substance either added to a slurry or sprayed over a mulch as a final stop in hydraulic planting or hydraulic mulching, meant to hold the mulch together and to bind it to the soil surface.

worked in Erie, Pa.

"A lot of people in this area are offering hydroseeding because of the high cost of sod," concurred Pat Minert of John Minert Landscaping in Pittsburgh, a company which 20 years ago began offering hydroseeding for high-end residential and some small commercial sites.

Most hydraulic planting equipment probably owes its existence to early attempts at using farm silage blowers to apply hay mulch to highway roadsides. Improvements in mulchers made them more capable.

From blown-on mulch, it was a short leap to the concept of blowing on mixes of mulch, seed and fertil-

izer in one operation, sometimes in multiple passes. By the mid-1950s and early 1960s, equipment specifically for hydraulic seeding operations had begun to be refined in design and to become accepted, at least by large contractors doing department of transportation jobs.

Even in the early stages, though,

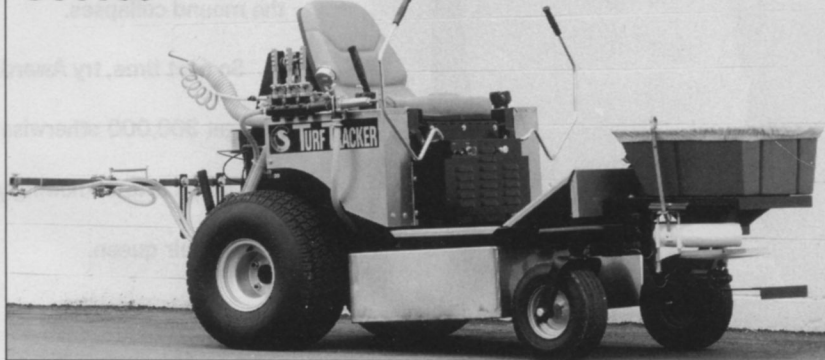


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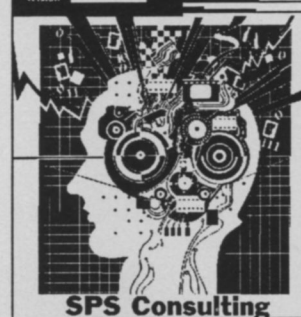


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it was clear that hydraulic planting could simply do jobs no other method could reach. Steep gradients and huge areas were its particular meat and potatoes business; aside from highways, the method was great for transforming large-turf areas, such as sports fields and parks.

And early advocates of hydraulic planting exercised great creativity both in perfecting their equipment and in promoting their service.

"We 'hydroseeded' some telephone poles one time, kept them watered, and the turf just grew like crazy, took root right through the creosote telephone poles," Pettee said.

By the late 1970s and early 1980s, hydraulic planting was ready to take advantage of an unexpected market force: strict new environmental regulations regarding soil erosion and so-called "fugitive dust" emissions.

Contractors developing large subdivision tracts quickly found that hydraulic planting helped control dust and erosion — and added extra value to home sales. "You've got developers realizing that a home sells faster with a front lawn involved — a hydroseeded lawn and some flowers," said Michael Mellon, western regional sales manager for Weyerhaeuser's engineered fiber products division, Tacoma, Wash.

MODERN TECHNOLOGY. Hydraulic planting today is a mature technology with most of the "bugs" worked out of its varying systems. "It's just a delivery method to get onto the site and growing. You're going to get, as compared to some other techniques like hand-seeding, a higher percentage of germinated seed," said Mellon.

The majority of hydraulic planting is actually a form of hydraulic mulching. The technique involves spraying a "slurry" of combined mulch, seed, fertilizer and water. Keeping the slurry uniform in the tank, and keeping the delivery hose from clogging, are two special challenges for hydraulic mulching units.

Hydraulic seeding, technically, involves only the delivery of a seed-water-fertilizer mix. This may be followed with a separate mulching. The technique is excellent for overseeding large areas.

Rick Reinecker at Reinco Inc., Plainfield, N.J., recommends multi-step seeding for large jobs, in which seeding and fertilizing may be done in one pass, mulching with hay or straw in the next and following the mulch with a spray of "tackifier" to hold the mat together on the ground.

Typical residential and commercial lawns might require use of a one-step hydraulic mulching/seeding process, which also includes a tackifier as part of the mix. For hydraulic planting operations, though, the addition of too many things to the mix begins to bump into the upper limits of efficiency.

Hydraulic planting experts agree that, to deliver a quality lawn, application rates for one-step hydraulic planting need to be at or above 1,200 pounds of "dry" material per acre (for mulch, the industry standard for moisture is about 12 percent, plus or minus about 3 percent). Most analysts, including Mellon who has lectured internationally on hydraulic planting methods, would increase that figure to 1,500 pounds



Smaller-sized seeding units are more common in the professional lawn and landscape industry. Photo: Finn

to 2,000 pounds per acre, while a few, such as Pettee, set the ton-per-acre figure as the best rate.

At those rates, the batch in a 3,000-gallon tank is good for planting 1/4 to 1/2 of an acre.

Labor effectiveness demands that an operation spend the maximum amount of time in applying the slurry; loading the tank and getting the batch properly mixed and prepared for application is probably the most cumbersome and least-productive part of the operation.

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be done in jobs that measure one or two tankfuls," said Mellon. "The poor little guy that's got to load his machine a dozen times to do an acre, he just can't hardly compete against the big 3,000-gallon tankloads."

Hydraulic planting operators need to balance their equipment needs against likely demand. "If you regularly do home lawns, you're talking about 800 gallons, and then, if you occasionally get the acreage, you just load a lot of times," Mellon said.

Units capable of processing 1,000-gallon to 1,200-gallon batches are probably the size most favored if a landscaper is going to seriously offer hydraulic planting, industry analysts say. In most cases, that batch size has the advantage of falling within the heavy-duty capacity category and may include a "progressive cavity" type of pump. That pump, like a high-tech screw augur, is both highly durable and provides enough pressure to drive slurry through 1,000 feet of hose — a competitive advantage at remote sites or on delicate terrain



difficult to access by truck.

Smaller units are more likely to be driven by centrifugal pumps, still capable and proven machinery but less able to deliver product to sites remote from the truck. For operators who know that they won't be doing mountainside erosion control or massive highway projects, a smaller unit makes sense.

WHO'S HYDROSEEDING. "Landscapers are our biggest market. We've sold to some schools, we just sold a unit to Dartmouth College, we've sold to a few government agencies and a number of cities have them," said Ray Badger, whose Badger Enterprises, New Brighton, Pa., manufactures skid-mounted centrifugal pump units ranging

Hydraulic planting services, whether performed in-house or subbed out, is growing in demand. Photo: Reinco.

from 50-gallon to 1,000-gallon capacity. "Our business increased about four times this year."

The market is strong enough for the smaller units that Badger dropped other business operations to concentrate solely on hydraulic planting equipment.

His company's entry into the hydraulic planting market came about because he saw small machines failing in quality, but a developing niche for small-batch jobs such as residential lawns.

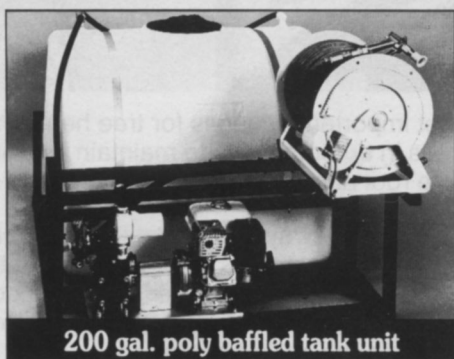
"We basically saw a very large market, and some machines that had a very large potential but were not what they needed to be," he said.

No matter what the technology level of the equipment, manufacturers and contractors say it's clear hydraulic planting has established itself as a long-term niche in the green industry.

"The residential end continues to expand, and, with legislation for



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sediment control and erosion control being tighter and tighter, contractors are responsible for taking care of that disturbed ground almost immediately," Butman said.

"In some areas, it's down to an acre or less of disturbed ground that has to be covered. That lends itself to more applicators going to this method; it's efficient, cost-effective and can be done with one or two laborers."

Butman said that Finn, which makes seven models under the HydroSeeder brand name, has experienced significant demand for small units capable of doing 10,000 square foot batches, as well as very large units.

Broughton, of Empire Landscaping, said he was drawn into the hydraulic planting market because of customer demand: "We're getting a lot of calls from residential customers who are aware of 'hydroseeding.' I am assuming from seeing it done in different parts of the country or even on highways."

"I think the smallest we've done is 10,000 square feet, but then it goes on up from there. I have seen

other landscape contractors do even smaller yards, take a hose and hit small areas and confined areas for filling in," he said.

For his own crews, as well as for his customers, he said hydraulic planting has been a boon. "We had been doing drill seeding for residential lawns, and took great pride in putting in nice lawns. We felt this was the next step for our customer. They see an instant gratification, just like with a sodded lawn—and our crews are really pleased, I think, driving by the jobs and watching the progress of the hydroseeding."

A number of contractors subcontract hydroseeding jobs as they're called for. John Gachina, of Gachina Landscape Management in Menlo Park, Calif., calls in a specialist firm rather than maintaining his own equipment and training workers in seeding techniques. Dave Wilkenhauer, of Contra Costa Landscape, the firm Gachina uses, said the costs of running and crewing his high-capacity equipment (his smallest unit is a 1,500-gallon machine) pushes hydraulic seeding dangerously close

to sod prices in ordinary terrain; it's only when a site requires special attention for gradient control that the price justifies his service for small residential jobs.

"Our bread and butter has been the large, 100-acre plus housing starts," he said. "Usually we're looking for \$900 to \$1,200 minimum for a project, but normally even \$500 would be a ton of money for a small residential project here. If it's a slope or something where the seed would benefit from the mulch cover, then that may make it worthwhile."

That's not to fault the method, he said; several smaller operators, using trailer or truck mounted equipment, have carved out the residential niche in his area and are able to offer them more efficiently than he could for the homeowner.

Similarly, The Ruppert Co. has found it best to rely on contract work with specialists in hydraulic planting, ducking the burden of equipment purchase and maintenance while benefiting from market competition.

"What we've found is we just

can't do it as well as the people who seed," Thompson said.

Ruppert, with 500 employees, makes a point of offering all services to all customers; the firm does that, though, by subcontracting to niche market professionals in areas such as hydraulic planting, fertilizing maintenance programs and irrigation system installation.

"We feel that those peripheral sorts of work are best done by experts; we in turn, act as a coordinator or overall manager and offer that service to the client," Thompson explained.

Chance Morrison, regional operations manager for ISS Landscape Management in Orlando, Fla., said that in his region hydroseeding is done by "the big sod grassing companies," but that sodding is more prevalent.

"If it was a service we felt like we could grow with and do, we would consider making that investment. Right now we just don't get requests for it," he said. ■

The author is a free-lance writer based in Grosse Pointe Park, Mich.

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Growing Wildflowers In Compost

One of the challenges of establishing wildflowers is to achieve the right seed to soil contact without burying the seeds. Compost can help do that while providing additional fertility.

By Joe Alexander and Rod Tyler

THE USE OF wildflowers has increased dramatically over the past 10 years, perhaps because of their appearance or their appeal to the nature lover hidden inside us.

Wildflowers are a colorful alternative to turfgrasses for natural areas conducive to their establishment. In turn, natural sites have increased as the acceptance of wildflowers has become more common, crossing all segments of the green industry.

BENEFITS OF WILDFLOWERS.

Aesthetically, the benefits of wildflowers are endless. After all, how many words can be used to describe a field of 18 different wildflowers growing randomly, all in bloom? Quite breathtaking, trust us.

Beyond this beauty lies other benefits commonly associated with the decision to establish wildflowers. In landscaped areas around nursing homes and elderly care facilities, for instance, the therapeutic nature of a daily walk through a



wildflower garden or field cannot be thoroughly measured.

However, there are numerous documented sources that claim the health benefits of these programs are quite evident.

Additionally, the establishment of wildflowers allows for the creation of small ecosystems which would not normally exist in turf areas. Wildlife such as white-tailed deer, killdeer or other ground nesting birds have been spotted in increased numbers in wildflower plantings. Even birds of prey, such as the red-tail hawk, have a greater food source as a result of the initial cover provided by all types of wild-

flower vegetation.

Besides the natural benefits, there are also business benefits to wildflower fields. Without a doubt, most large corporations are considering the importance of "going green." This includes incorporating the use of environmentally responsible product packaging to landscape programs that incorporate the integrated pest management concept.

The idea is not to replace turf with wildflowers; but the combination of scattered flowers against a dark green backdrop of turf is astonishing. Therefore, the image a corporation obtains from their actions is causing more companies to consider wildflowers on their 40-acre front lawns.

WILDFLOWERS & COMPOST. Using compost for wildflower establishment may seem odd at first, but it's really a natural fit.

One of the main challenges of establishing wildflowers is to achieve seed to soil contact without

covering the seeds with more than a 1/4 inch of soil. This is a challenge. As a result, seed is often left on the surface and exposed to erosion, birds and other deleterious factors out of most managers' control.

Compost helps increase seed to soil contact, helps prevent seed from washing off (if compost is applied with the seed or just after seeding) and offers a small amount of fertility in proper proportions for quick establishment. Speed of establishment is key because wildflowers are competing with enemy number one — weeds.

In areas of heavy vegetation, compost helps increase the decomposition rate; therefore keeping the thatch layer from inhibiting seed germination. Compost also helps retain critical moisture for tender germinating plants that are easily killed by drought conditions.

Since wildflowers are seeded at such low rates compared to turf, the





Indian Blanket (far left). California wildflowers five months after seeding. Photos: Environmental Seed Producers, Lompoc, Calif.

compost can act as a carrier as long as it is completely mature prior to mixing. If the compost is not mature, another application mechanism must be devised to assure that the heat from the compost does not kill the seeds prior to placement.

PLANTING CONSIDERATIONS.

Before planting wildflowers, it's recommended that the following checklist be reviewed. Answering these questions prior to project inception will increase chances for a healthy establishment of wildflowers.

- Wildflower planting checklist:
- What is the total area to be covered with wildflowers?
- What type of slope is present, and is it accessible to machinery?
- Which colors most appeal to your customer? Are company colors possible?
- Is it possible to seed in time for fall or spring?
- What native flowers are popu-

lar and where will you buy quality seed?

- Does the area have a history of weed troubles that you can counteract?
- How will you evenly apply the low seeding rates of 10 to 20 pounds per acre?
- Will you use a combination of annuals and perennials?
- How many varieties will you plant, at what heights will they flower and when?
- What reputable source of information will you turn to if something goes wrong?
- What type of soil conditions exist: clay, loam, sand or wetlands?

Obviously, by answering all of these questions during the planning phase, anyone can increase their chances for success with wildflowers. While some of the answers aren't readily available, suppliers of seed and compost products are available on a local basis almost

anywhere in the United States.

Additionally, in the U.S., there are currently about 3,000 yard-waste compost facilities, 300 biosolids facilities and 30 MSW compost facilities.

SUCCESSFUL ESTABLISHMENT.

The most important step in creating a successful program is to make sure that adequate water is available for establishment to take place. Watering is not feasible or economical on a large scale, so most programs recommend planting either in the fall or in the spring before the warmer weather begins. In the North and Midwest, the cutoff dates are before May 1 for spring planting and after Nov. 15 for fall.

However, Tom Riccardi, grounds superintendent of Goodyear Tire & Rubber Co., feels a fall planting is more conducive to successful establishment. According to Riccardi, "it seems to give the

plants a jump start for the spring." In the South and West, planting times should follow the cooler and moister times of year.

SITE PREPARATION. *Step one.* Vegetation in the existing area must be completely killed prior to seeding the wildflowers. This is the only way to give the wildflowers a head start and to prevent established turf from competing with the wildflowers for nutrients. A non-selective herbicide such as Roundup® can be used to accomplish this step. Please note some experts recommend up to two applications of Roundup for best results. For example, if a spring planting is planned, consider one application of Roundup in the fall and the other in spring just prior to seeding.

Step two. Apply a 1/4- to 2-inch layer of compost using a manure spreader, salt truck or other spreading device. Bulldozers can be used if the size of the project warrants it, but a thicker layer of compost usually results due to the operators inability to apply a perfectly even amount. The amount of compost applied usually will depend on native soil tests. The more fertile and loamy the soil, the less compost is needed.

Step three. Disk the area to incorporate compost. It's critical to incorporate the compost even on a rough scale to avoid the creation of a layer, possibly leading to poor drainage, aeration and lack of proper root development.

Again, only a light disking is needed. Over-incorporation will reduce the compost's effectiveness and bring up even more dormant weed seeds that will create problems later.

Step four. Seed according to the rate for individual flower species. Since most seed companies have a variety of wildflowers in a single pack, individual seeding for color is not commonplace. However, for

solid colors, the variety selection is narrower and annual or perennial combinations may be necessary to achieve the same color to appear year-round.

Using compost at the time of seeding helps distribute the seed more evenly. The seeding process can be achieved by many methods, including hand seeding, broadcast with walk-behind spreaders, drilling with grain drill type seeders and hydroseeding.

For optimum success, choose your seeding method with the thought of maximizing seed to soil contact while avoiding placing the seed too deep.

MAINTAINING WILDFLOWERS.

One of the economic benefits of wildflowers is that maintenance costs are reduced compared to conventional turf. In fact, if mother nature cooperates, very little maintenance is needed except for weed control. Selective mowing, wicking weeds with herbicide, hand pulling or other measures are popular in preventing the weeds from setting seed and reproducing.

GOODYEAR COMPANY WILDFLOWER PROJECT

IN THE spring of 1993, Goodyear Tire & Rubber Co. of Akron, Ohio, and Kurtz Bros. Inc. of Cleveland, Ohio, joined together to conduct the largest test project in the nation using compost to establish wildflowers.

The process began when Good Year wanted to convert 86 acres of turf into a low-maintenance alternative, demonstrating its commitment to environmental conservation.

A number of applications and combinations were targeted to learn whether or not the compost helped increase germination, decrease weeds when used as a mulch or increase establishment from available fertility.

A lot of information has been collected from the Goodyear project. Most notably, compost helped establish wildflowers, increase total plant size and, therefore, total flower size. Even the worst areas where little germination occurred in 1993, the seeds overwintered, germinated and grew to almost bush sized plants this year.

For thin areas, an occasional re-seeding may be necessary to increase plant populations, especially if native varieties are not established. Spot seeding is best accomplished with a hand seeder with compost left out of the formula unless a complete reseed is necessary. In that case, a light layer of compost, about 1/8 of an inch, is plenty to help the newest seeds germinate

and establish themselves.

Mowing wildflowers down in the fall has long been advocated by experts, but this practice should be considered after weed pressure is assessed. Many grounds managers have found that mowing is not necessary and let nature take its course.

THE FUTURE. Future research for wildflower establishment should

focus on equipment capable of seeding large areas after compost is first applied and incorporated.

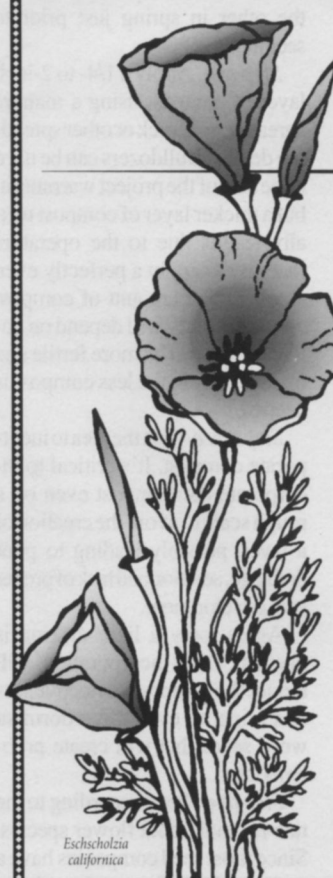
Weed control will continue to be challenging. If a preemergent herbicide were available for only the "bad" weeds, the managers job would certainly be easier.

The problem is that most of the wildflowers have been considered a weed at one time or another, so even selective herbicides are going to have a tough time selecting a bad plant from a good one.

In general, using compost with wildflowers yields excellent floral displays, creates a viable market for high quality composts and offers several environmental and aesthetic benefits.

As parks, golf courses, landscape professionals and corporations realize this benefit, wildflowers will increase in popularity, and society will benefit immeasurably from their beauty.

Both Alexander and Tyler are experts on green industry composting. They're both employed by Kurtz Bros., Cuyahoga Heights, Ohio.



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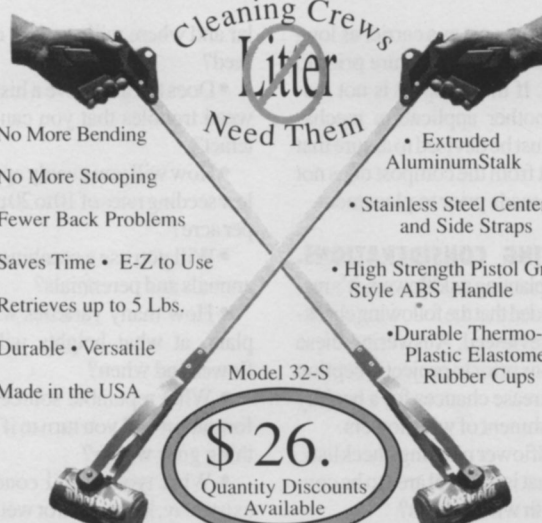
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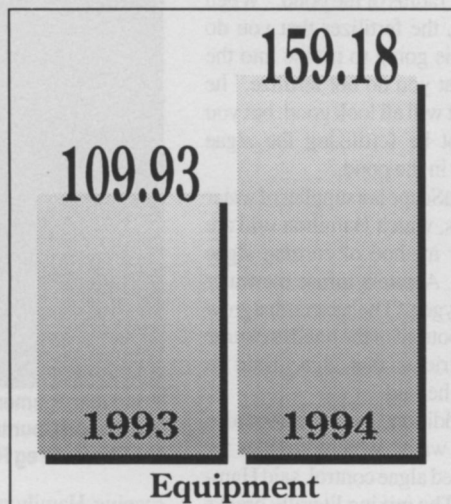
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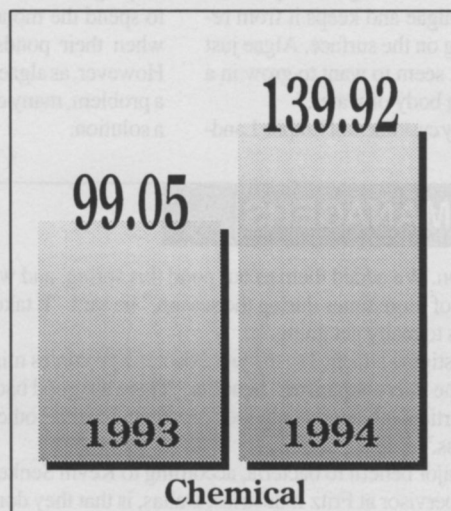
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Ponds

Offer Challenges, Opportunities

A number of strategies are used to manage ponds, including using aerators, aquatic herbicides, bacteria and even fish. Each method has its benefits and drawbacks.

By David Clancy

LANDSCAPE PROFESSIONALS offering pond maintenance must realize that what they do to land plants can impede their ability to maintain ponds properly. In fact, proper care and fertilization of a landscape will often wreak havoc in the aquatic ecosystem.

For instance, most professionals involved in water maintenance note a major concern is algae bloom, or a greater than normal growth of algae in a pond. While there are many causes for algae growth, the primary catalyst is an increase of nutrients in the water. Lawn and landscape professionals are often to blame.

When a landscape contractor fertilizes a property encompassing a lake or a pond, an excess of nutrients in the fertilizer can be washed into the water following a rainfall. The increased amount of nutrients in the pond becomes fodder for algae growth that can make a pond unsightly and even foul smelling.

However, there are steps the landscape professional can take to en-

sure this doesn't happen. The first and simplest, according to Guy Hamilton, division manager at AquaScape Technologies, Minneapolis, is to stop fertilizing within a 10-foot radius of the pond. "When it rains, the fertilizer that you do spread is going to trickle into the area that you do not fertilize," he said. "It will all look good, but you will not be fertilizing the algae growth in the pond."

AquaScape is a supplier of water aerators, which Hamilton said are another method of curbing algae growth. Aerators infuse the water with oxygen. "The bacteria that grow on the bottom of the pond consume the nutrients that algae need to grow," he said.

In addition, most aerators also stir the water, which provides for increased algae control, said Hamilton. "The mixing literally breaks up the algae and keeps it from reforming on the surface. Algae just doesn't seem to want to grow in a moving body of water."

Many customers of Empire Land-



Pond management is crucial at Westwood Country Club, Vienna, Va. Photo: Greg Ryan.

scaping, Hamilton, Mont., elect not to spend the money on an aerator when their ponds are first built. However, as algae bloom becomes a problem, many call back seeking a solution.

BACTERIA AS POND MANAGERS

BACTERIA are used increasingly to help manage aquatic growth. The bacteria consume nutrients required by algae, thus limiting algae survival.

"You can take a water soluble bag or jug of bacteria and pour it into the pond," said Guy Hamilton, division manager for AquaScape Technologies, Minneapolis. "This way you don't have to wait for the bacteria to multiply by itself. The bacteria will start consuming sludge and nutrients immediately."

Bacteria was used to clean up the Exxon Valdez oil spill off the coast of Alaska five years ago. "Now they are finding specific strains of bacteria will multiply and handle a certain food supply, and then when they get done consuming that food supply, they just die off," Hamilton said.

Chuck Whealton, landscape management area manager of The Ruppert Co., Ashton, Md., is experimenting using bacteria in the company's pond this year. "We bought mixed bacteria that feed on algae and

plankton. We added them to our pond this spring, and will add them a couple of more times during the season," he said. "It takes two or three seasons to really get going."

The stigma attached to the word bacteria promotes misconceptions about the microorganisms' benefits. "There are good bacteria and bad. This particular bacteria only feed on organic matter; otherwise they are harmless."

A major benefit to bacteria, according to Kevin Senkevich, production supervisor at Fritz Industries, Dallas, is that they don't break down into nutrients, which algae feed on. "So many algicides out there try and kill the algae, which break down into nitrates and phosphates, which in turn grow more algae," he said. "It becomes a cycle."

Instead, he added, "bacteria remove the phosphates and the nitrates. Then they begin consuming the sludge that is at the bottom of the pond."

The result is a pond that is low in sludge, algae and other organic matter.



LITTLE FISH, CLEAN POND

LANDSCAPE PROFESSIONALS often overlook natural aquatic life as a means of controlling pond vegetation. The same method used in home aquariums can be applied to ponds.

For instance, Chuck Whealton, landscape management area manager for The Ruppert Co., Ashton, Md., is testing snails, feeder fish, tadpoles and Israeli carp to curb algae and weed growth.

Israeli carp differ from grass carp, which cannot be legally imported into Maryland, he said. "Grass carp are pretty ferocious feeders. If they were to get loose out of one of the water management systems and into the tributary systems, it wouldn't take them long to reproduce and then take away all of the grass beds in the rivers and Chesapeake Bay," he explained.

"However, Israeli carp are supposed to be sterile and won't reproduce as long as you have other game fish in the water. Every few seasons you will have to add some accordingly, and you must maintain the population of game fish. That will ensure you don't overpopulate with the carp," he said.

Apparently the game fish give off a pheromone that keep the Israeli carp from wanting to reproduce, he added.

Not everyone buys the fish fodder theory. "I don't think using fish to control algae is a good idea," said Joe Bondra, general manager of Cygnet Enterprises, Linden, Mich. "They have a very short digestive track. The weeds are not allowed to break down before they are excreted, which fertilizes the pond once again."

"Many of their problems could be solved with simple aeration," said Bob Broughton, president of Empire. "The strange thing is that they spend all of this money on a pond, you would think an aerator would be the next logical step," he said. "But I sense they think it is something they have to maintain, and that scares them off."

Some customers learn the lesson eventually. "Whatever the reason, they drag their feet and think they can get by without aerators. But when they find out they can't, they call me back," Broughton said.

Not all pond management professionals are sold on the capabilities of aerators. Joe Bondra, general manager, Cygnet Enterprises Inc., a Linden, Mich., lake management company, believes aerators are but one component of a total pond management program. "Aerators do not control algae," he said. "They do help to a certain extent, but an aerator is not the answer to everything."

Bondra cites cost as one reason many people maintain their ponds without using aeration. "Most people cannot afford an aerator, especially homeowners," he said. "They want to remedy the problem, but they don't have the money for an aerator. So there are alternatives that are accessible to those with lower landscape budgets."

Bondra suggests using an algicide, in conjunction with better stabilization of the pond banks, as a means of managing a pond. "And use low-phosphorous fertilizers on the land," he said. "That will keep the phosphorous levels in the pond lower, and keep the nutrients away from the algae."

And if the budget allows, he said, use an aerator to help with the management system. "Using all of those things together is an excellent management strategy."

Most methods Bondra recommends rely on common sense, he said. "Take a look at the waterway, where water enters the pond. If

there are cattails in upstream water supplies, many people want to remove them. Don't. They take nutrients out of the water before they get to the pond. That can save some aggravation."

Brian Suffren, sales manager for Marine Biochemists, a division of Applied Biochemists, Milwaukee, agrees with the total pond management strategy. "Aerators are a tool, along with chemicals and other aspects of pond management," he said.

CHEMICAL TREATMENT. Two types of chemicals address pond management problems: those for unwanted growth in the water (immersed weeds), and others used for weeds above the water (emerged weeds). True pond management requires using both types.

For instance, algaecides kill algae in the pond. The chemicals are usually added to the water, and noticeable reductions in algae occur in seven to 10 days.

Another means of controlling

algae and other plant growth is by using water dyes which restrict the sunlight (and photosynthesis) that hits the bottom of the pond. However, these dyes turn the pond a dark blue, and customers might not find it appealing.

"If you cut the light, you also cut the rate of growth," said Chuck Whealton, landscape management area manager for The Ruppert Co., Ashton, Md. "However, the color of the pond will change, and you might have to adjust the amount of dye you use, depending on the customer's wishes."

According to Whealton, the dyes are very effective on algae and submerged weeds. "Floating weeds are another story, because you won't cut the light to those," he said.

Herbicide application for emerged weeds varies. Some types are sprayed directly on the weeds, much like their land counterparts. Within a week, the weeds should begin dying, said Richard Both, manager

(continued on page 79)

Field Testing Turf Enables Quick Analysis



Field diagnostic kits include all the needed materials for obtaining a diagnosis. The first step is obtaining a sample of diseased tissue.

ONE OF THE MOST pressing needs of lawn and landscape professionals is rapid, accurate disease diagnosis. Today's advanced technology allows using disease diagnostic kits to accurately pinpoint certain diseases in the field in about 10 minutes.

Traditionally, a number of factors inhibited rapid turf diagnosis.

Forexample, microbes that cause plant diseases are microscopic, so most diagnosis is based on symptoms that are quite variable. In addition, identifying the disease may not be possible until considerable injury has occurred and control is no longer possible.

Moreover, few turf managers have access to laboratory equipment to conduct their own diagnostic

Today's disease diagnostic kits allow turf professionals to accurately diagnose important diseases in the field in about 10 minutes. The technology involves using antibodies produced by the immune systems of animals

By Dr. Gail Schumann

tests. Laboratory diagnosis of common diseases caused by bacteria, fungi and nematodes is relatively rapid — from one day to a week if culturing is required. Diagnosis of

virus and mycoplasma diseases is more difficult and may require longer periods of time, however. And professional diagnostic labs require several days for shipping and labo-

ratory analysis of the problem.

In recent years, researchers have developed technology for field disease diagnostic kits that allows diagnosis of some diseases quickly without the use of special equipment. These field diagnostic kits are called immunoassays because they use antibodies produced by the immune systems of animals.

HOW THEY WORK. Immunoassays are practical applications of the phenomenon that occurs when foreign substances invade an animal's blood system. Antibodies specific to the invader are produced each time an invasion occurs. This is a normal defense reaction by an immune system when invaded by

(continued on page 52)

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ALERT® RAPID DISEASE DIAGNOSIS KITS FOR ORNAMENTALS

TYPE OF KIT	IMPORTANT FUNGI DETECTED	IMPORTANT FUNGI NOT DETECTED	TESTED ORNAMENTALS
PHYTOPHTHORA	22 <i>Phytophthora</i> species; high concentrations of some <i>Pythium</i> species and some downy mildews	Fungi that may cause confusing symptoms such as <i>Fusarium</i> , <i>Rhizoctonia</i> , <i>Sclerotinia</i> and others	Azalea, chrysanthemum, <i>Cornus</i> , <i>Taxus</i> sp. rhododendron
PYTHIUM	14 <i>Pythium</i> species; high concentration of some <i>Phytophthora</i> species react	Many non-Oomycete fungi tested, a few <i>Pythium</i> species do not react	Chrysanthemum, impatiens, vinca
RHIZOCTONIA	Most strains of <i>Rhizoctonia solani</i>		chrysanthemum, geranium, impatiens, poinsettia, vinca

Diagnosing Diseases

(continued from page 50)

pathogens such as viruses and bacteria.

Through extensive research, scientists have discovered they can provoke the same animal immune systems into producing antibodies against microbes that can cause plant diseases.

The plant pathogens do not cause disease in animals; the antibodies simply are harvested from a blood

sample and used for rapid pathogen identification.

Like a key in a lock, each type of antibody physically fits on the specific pathogen which triggered its formation.

With enzymes attached to antibodies, diagnostic kits cause visible color changes when they encounter pathogens. In the tests — known as ELISA tests, or enzyme-linked immunosorbent assays — very specific antibodies (monoclonal antibodies) are produced

using tissue culture which makes accurate diagnostic kits affordable to the lawn and landscape industry. Similar kits have been produced for home pregnancy tests, Lyme disease tests and many medical applications.

PRACTICAL APPLICATIONS. Disease diagnostic kits are gaining recognition in the lawn and landscape market, particularly for diagnosis of *Pythium*. Because they are fairly expensive — about \$15 per test —

they make more sense on large properties such as golf courses, higher-end residential and commercial sites.

The kits provide some clear advantages; namely, they can be used on-site with no special equipment and render results in about 10 minutes. A drawback, however, is that each kit can diagnose only one kind of pathogen, so it's better if the user has an idea of what disease might be present.

If more than one turf disease is

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suspected, such as *Pythium* blight and brown patch, two different types of kits are required.

Even though different bacteria and fungi may be present in a plant sample, the kits respond positively only to the one which matches the antibodies in the kit. This helps prevent confusion in the diagnostic lab. The specificity of the antibody kits enables lab technicians to detect the actual pathogen in the complex of microbes present in diseased plant tissues.

Field diagnostic kits include all the needed materials for obtaining a diagnosis. The first step in diagnosing is obtaining a sample of diseased tissue. For diagnosing turf diseases, cut some of the infected turf blades with a kit knife. Because pathogenic fungi are usually present in thatch and soil, clean blade samples provide the most accurate detection.

With ornamental diseases, take a sample from the fungus-infected portion of the plant: leaves, stem cankers, roots, etc. This is important for obtaining an accurate diagnosis; a leaf sample will give a

negative result if the pathogen is in the roots.

Ground the plant sample on special emery-paper pads to release plant sap after a short period of rubbing. Then place the pads in an extraction solution bottle with a filter tip. This allows a clean sample to be squeezed onto the disease detector.

Four numbered bottles are used

to squeeze different solutions onto the disease detector in the correct order. Each detector includes three small circles of exposed filter paper. One of the circles is a positive control which should always change color. The second circle, which is the negative control, should always remain white. The third circle is the actual test area. If color

appears in this circle, then the pathogen has been detected.

Estimate the amount of fungus detected in the sample by observing the color of the circle. The darker the circle, the more fungus detected.

Forgetting a more accurate measurement of the color intensity, a meter is available that produces a number which reflects the color

ALERT® RAPID DISEASE DIAGNOSIS KITS FOR TURFGRASS

TYPE OF KIT	IMPORTANT FUNGI DETECTED	IMPORTANT FUNGI NAME NOT DETECTED
BROWN PATCH	<i>Rhizoctonia solani</i> , <i>R. cerealis</i> , binucleate, <i>Rhizoctonia</i> -like fungi; weak reaction with pure culture extracts of <i>R. zeae</i> and <i>R. oryzae</i> and fungi that cause red thread, southern blight and gray snow mold	<i>Pythium</i> species, several leaf spot fungi, and the pink snow mold fungus
DOLLAR SPOT	<i>Sclerotinia homoeocarpa</i>	Fungi that cause brown patch, necrotic ring spot, pink snow mold, some leaf spots, and <i>Pythium</i> species
PYTHIUM	15 <i>Pythium</i> species	Some <i>Pythium</i> species, <i>Rhizoctonia</i> and <i>Sclerotinia</i> species

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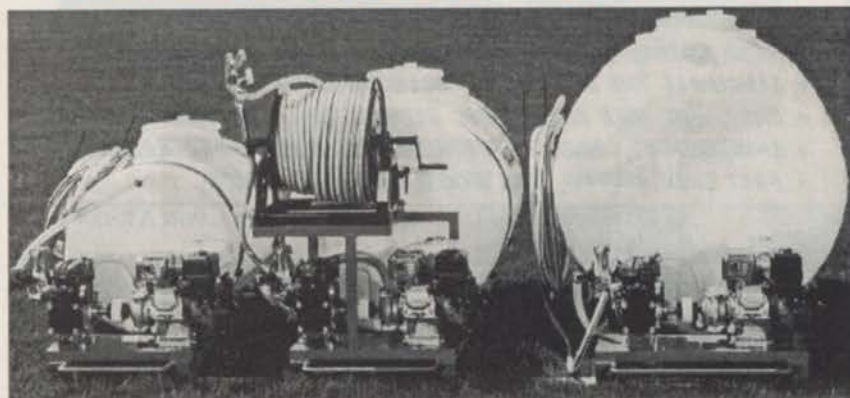
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intensity. These numbers are handy for record keeping. In many cases, the mere detection of the pathogen is the only information needed. For instance, if *Phytophthora* is detected in the roots of an azalea plant, a precise measurement of the color intensity is probably not that interesting.

In a lawn situation, however, a low meter reading might suggest that a fungicide is not really necessary, especially if cultural practices can be modified or more favorable weather is expected in a day or two.

TURF AND ORNAMENTALS. A number of multiwell immunoassay kits are available for

diagnostic laboratories and plant production facilities for a wide variety of pathogens. Because of economic constraints and market demand, only a few immunoassays are currently available as field kits for on-site use. They are sold under the trade names of Reveal® and Alert® and are available from the Neogen Corp., Lansing, Mich. As listed in the chart on page 50, Alert kits can be used for greenhouse, bedding and nursery plants and are used to detect *Phytophthora*, *Pythium* and *Rhizoctonia* in greenhouse and bedding plants, and *Phytophthora* in ornamentals.

It is important to carefully read the materials

provided by the kit manufacturer because they contain the results of extensive testing by diagnosticians and plant pathologists.

There are several important diseases or signs to look for. The most common plant materials have probably had the most extensive testing.

For example, *Phytophthora* crown rot, cankers and dieback are common problems on azaleas and have been tested in many labs. The antibodies have been selected to detect most species of *Phytophthora*; however, the antibodies have been selected to detect most of them.

In a few cases, the *Phytophthora* kits will also react positively with high concentrations of other closely-related *Oomycete* fungi such as a few *Pythium* species and some downy mildew fungi. It is important to note which fungi might also be present under the same conditions, so results will not be misleading.

When the kits are tested by plant pathologists, the results are compared to standard laboratory methods to ensure accurate diagnosis. The information sheets include lists of fungi showing which fungi react and which do not. They also list plant species that have been tested for each kit. If you are testing a plant that is not on the list, it might be helpful to check with your local diagnostician or kit manufacturer for any special limitations for that plant species. A few plant species might cause some background color to develop in the disease detector, but the color will also be noted on the negative control circle and should not interfere with test results.

The *Phytophthora* Alert Kits can be used for a number of common landscape ornamentals. Applications include testing plants that have died or declined to determine if *Phytophthora* was actually the cause. They may be useful when a shipment of nursery stock arrives with symptoms that suggest a disease problem. They may also be useful when transplanting nursery stock to a landscape site to assure that diseased plant material is not established in the area. Similar tests can be conducted on bedding plants using the *Pythium* and *Rhizoctonia* Alert kits in addition to the *Phytophthora* kit.

For turfgrass diseases, Reveal kits are available for detection of *Pythium* (*Pythium* blight), *Rhizoctonia* (brown patch) and *Sclerotinia* (dollar spot). The *Pythium* kits are especially useful because *Pythium* blight can be a very destructive disease in a short period of time and usually requires different fungicide choices than most other turfgrass diseases.

A rapid, accurate diagnosis can help a turf manager make the correct fungicide choice without waiting for diagnostic lab results. The *Rhizoctonia* kit is also very useful for turfgrass professionals.

Brown patch is not always easy to diagnose without a microscope. Both *Pythium* blight and brown patch may be active at the same time. If a fungicide application is necessary, a tank mix will probably be required to control both diseases.

As with the Alert tests, Reveal meter readings always useful for record-keeping. The use of meter thresholds for fungicide application decisions has been the subject of several research

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Each kit is geared toward a specific disease. No kit can be used in more than one application. Photo: Neogen Corp.

studies on golf courses.

Meter readings are probably not as useful in landscapes where repeated fungicide applications are not routine. Turf managers should note that results may vary considerably between tests on the same turf. If meter readings are to be used to make a fungicide application decision, more than one test result should be considered.

PRECAUTIONS. Immunoassay kits must be cared for properly. The antibodies are easily destroyed by high heat and freezing. Kits should usually be purchased for a single growing season.

All components are clearly marketed with an expiration date. Accurate results cannot be expected after these dates. The liquid components should be allowed to warm to room temperatures before use, but returned to a refrigerator as soon as possible. They should not be left in a hot vehicle or allowed to freeze.

As noted before, the positive and negative control circles on each disease detector offer confidence that the kits and their components are functioning properly.

A positive result with an immunoassay kit will probably confirm the suspicions caused by symptoms of the diseased plants. A negative

result is more difficult to interpret. Sometimes the pathogen is no longer active, especially in extensively rotted plant tissues.

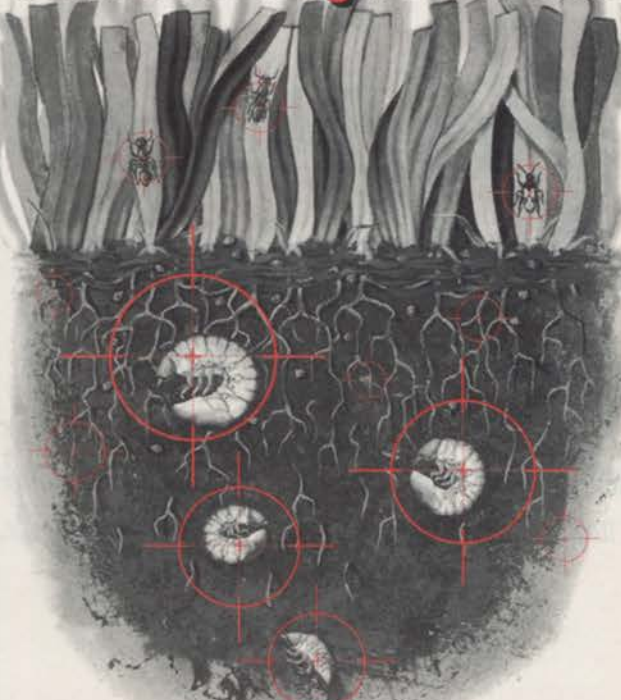
The sample also might not have contained the pathogen. If a kit produces a negative result despite suspicious symptoms, a diagnostic laboratory might still be required for microscopic examinations and culturing from the diseased tissue.

Even though only a few on-site commercial kits are available for disease diagnosis at this time, many laboratory immunoassay kits are available for a wide variety of fungal, bacterial and viral diseases. This means that your local diagnostic labs might be able to offer diagnosis results more quickly although an added fee might be necessary to pay for the immunoassay kits.

Many research projects are developing new immunoassay for other pathogens including nematodes and for detection of important such as pesticides residues in plant tissue, water and soil. ■

The author is an assistant professor of plant pathology at the University of Massachusetts.

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Seed Days Nationwide Draw Ample Crowds

Seed companies hosting this year's turf field days vie to produce the first endophyte-enhanced turf species offering disease resistance. Meanwhile, all claim victory in carving their own specialty turfgrass niches.

By Cathy Hoehn

WHEN KATHERINE Lee Bates wrote of amber waves of grain in the lyrics to "America the Beautiful" in 1895, she most likely wasn't referring to Oregon's nearly 400,000 acres of turf stands bowing gently in the North Pacific breeze.

But the image she conjured up still survives.

Seed companies in Idaho, Oregon, Ohio and other regions hosting field days throughout the summer providing dealers, distributors and their customers, the media and



Monitoring growth is important in evaluating turf varieties.

other interested parties the opportunity to see firsthand the amount of time, research and preparation that goes into growing, evaluating and harvesting assorted turf crops and turf trials. And what comes out of them.

Many gave tours not only of their crops and checkerboard turf trial plots, but also the massive facilities where, after harvest, the seeds are cleaned, conditioned and bagged by automated machines and then stored in warehouses sometimes 90,000 square feet in size.



In between tours, many seed companies gave presentations and also invited guest speakers, mostly university plant pathology professors, to talk about the latest research and development efforts.

BAD SEED. A number of issues cropped up in discussions during the seed field days. It appears one of the most prominent problems facing turf growers is preventing competitors from selling bad seed which tarnishes the whole industry's reputation.

In particular, seed experts believe labeling and protection laws fall short of their intended goals; for example, the perennial ryegrass labeling laws, according to Darcie Lostcutoff, general manager of Turf-Seed Inc., Hubbard, Ore.

A federal law allows perennial ryegrass to be tested and labeled under two rules. The Association of Official Seed Analysts rule assumes all perennial ryegrass to be 0 percent fluorescence (contains no seed from another crop) unless oth-

erwise described by the breeder. The Federal Seed Act, however, allows for the package to contain up to 5 percent of another seed type before a fluorescence level is required on the label.

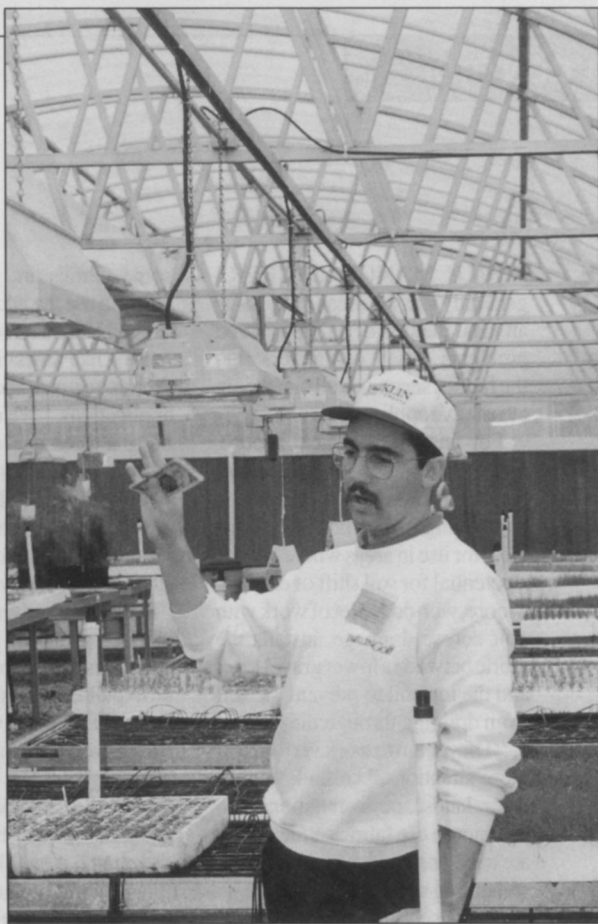
Efforts are underway to make the AOSA rule part of the Federal Seed Act to ensure fair and accurate labeling.

Tom Stanley, marketing director at Turf-Seed, favors proposed legislation to amend the Plant Variety Protection Act to better protect seed developers' new varieties (it would require anyone producing the same variety to pay royalties to the original developer).

Unlike many breeders, International Seeds Inc., Halsey, Ore., opposes the National Turf Evaluation Program board of director's move to allow most official testing to take place at public test sites vs. private sites. Many in the industry believe that private companies holding NTEP trials are biased in their reporting. ISI, however, believes the NTEP board's policy, established in 1991, favors individual breeders in the public sector.

Mark Sellman, tall fescue plant breeder for Jacklin Seed, vies with drizzly rain and cool temperatures to capture the crowd's attention.

WHO'S DOING WHAT? Current research essentially focuses on improving cultivars and species' dis-



Far left, Bill Rose, president of Turf-Seed Inc., explains issues affecting the seed industry. Left, Rick Williams, operations manager/research department for Jacklin Seed, outlines current greenhouse projects.



Left, Dr. Leah Brillman, research director for Seef Research of Oregon. Below, Dr. Hank Williams (center) of the University of Illinois, discusses the viability of genetic engineering for turf.

ease resistance and response to traffic pressure, while requiring less water and fertilizer. Many are also trying to integrate use of reclaimed irrigation water into their programs.

The word bandied about among seed developers and researchers this year is endophytes. While endophytes have been used for insect resistance for some years, a recent study shows that endophytes also provide improved disease resistance.

Jacklin Seed has worked long and hard to find one native species of bluegrass that contains endophyte. "There are 69 species in the United States that we've found with endophytes. Kentucky bluegrass isn't one of them," said Doug Brede, research director for Jacklin Seed Co., Post Falls, Idaho.

What happens when researchers try to cross other species' endophytes into Kentucky blue? "They're kicked out," Brede said.

He also reported that Jacklin Seed has isolated endophyte in sheep fescue for the first time. The variety offers dark color, insect resistance and heat and drought tolerance.

Dr. Hank Wilkinson, professor of plant pathology and agronomy at the University of Illinois, who spoke at Turf Merchant's Turfgrass Inspection Tour at its Aurora Re-



search Station in Oregon, said the most significant improvements in turf will come through genetic engineering. "In the future I think we'll see more genetic manipulation (in turf). It will take five to 10 years," Wilkinson said. "This science attempts to move genes, not mutate them.

"All of this takes time and is expensive," he added. "I recommend caution when you are promised a miracle turfgrass."

Turf Merchants continues focusing on resistance to pythium, crown rust, leafspot, red thread and brown patch, as well as stress tolerance, in turf-type tall fescue. Its top-per-

forming perennial ryegrass shows high endophyte content, fine texture and a dark green color.

THWARTING COMPETITION.

Turf-Seed, the company which started seed field days 12 years ago, plans to defy the competition by holding next year's field days at Pure Seed Testing, East, in Rolesville, N.C. The company will alternate its field days each year between Oregon and North Carolina.

Dr. Bruce Clarke of Rutgers University, Turf-Seed's guest speaker, discussed methods for controlling summer patch, one of the most de-

structive diseases for cool-season grass. Lawn professionals can now reduce their use of fungicides for controlling summer patch and increase "good cultural practices such as aeration, raising the height of cut and fertilizing with acidifying nitrogen sources," he said. Those practices allow turf managers to reduce fungicide rates 25 percent to 50 percent, he added.

Seed Research of Oregon appears to have the corner on testing unusual varieties and species. For instance, the company is experimenting with tufted hairgrass, a species from England and Northern Ireland. The grasses look deceptively like tall fescue. "They show nice texture and color," said Dr. Leah Brillman, research director. "It's a wetlands grass — low maintenance, but expensive."

Lofts Seed introduced an alkali grass similar in texture to fine fescue at its summer field days in Wilmington, Ohio. The company sports about 2-1/2 acres of demonstration plots. "We don't have seed yields here. We evaluate turf," said David Goodwin, branch manager. ■

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

Landscape Fabric: More Than Just a Weed Barrier

Traditionally used in landscape applications to deter weeds, contractors are finding fabrics serve as effectively in soil retention and erosion control.

By David Clancy



Landscape fabrics are about 90 percent effective at preventing light weeds from merging. Photo: Reemay.

WHILE MANUFACTURERS generally tout landscape fabrics as an ideal method of reducing weed problems, many contractors find the fabrics serve as well or better in alternative applications.

For instance, Bruce Moore, owner of Eastern Land Management, a Shelton, Conn., landscape contracting firm, finds the fabrics ideal for use in areas where there is a potential for soil shift or erosion. Moore, who does a lot of work with golf course drainage, installs the fabric between a lower gravel level and the top soil to prevent the soil from draining through the gravel.

"They seem to work very well in those situations," he said. "But in other landscape installations, we tend not to use fabrics, unless they are to be used under a walkway, or something similar," he said.

Likewise, Mike McMurry, vice president/manager for Marvin's Garden and Landscape Service,

Sarasota, Fla., uses the fabrics to prevent soil from draining in sump holes. "By separating the gravel from the soil, we are ensuring the soil doesn't erode with drainage," he said.

In addition, said McMurry, fabrics help prevent erosion on banks. "In those applications, it really isn't acting as a weed barrier. It is more like a soil barrier, or soil separator."

John Kida, national sales manager for Fabrico Inc., a fabric supplier, explained that landscape fabrics—depending on type—can serve four functions. "They act as a weed preventer, a soil separator—in which they prevent top grade soil from mixing with subgrades, a filter fabric and an erosion control blanket," he said. "So basically some products can be used in four different jobs."

Bear in mind that

some fabrics are geared for one specific use, he added.

Kurt Kluznik, president of Yardmaster in Painesville, Ohio, uses fabrics for just about all types of applications. "We use them a little bit as a weed barriers. But we use them more often as a soil separator when we build walls," he said.

Kluznik also uses the fabrics for reinforcing hardscape structures such as modular walls and patios. "These walls are engineered so the manufacturers will provide specifications as to the fabric type to use," he explained. "You lay down several portions of the wall, then backfill it as you come up. Then you lay this geogrid fabric over the top of the wall, pull it back over the gravel and then backfill behind the wall and stretch it out like a blanket.

"As you continue to build the wall, you continue this process," he said. "The weight of the wall and the weight of the backfill will support the wall. The fabric becomes an integral part of an engineered wall.

"The other way to accomplish the same thing is by putting in massive structures, cribbing or poured in-place concrete to support a wall like that," he said.

Indeed, landscape fabrics are suited for many applications, but care must be taken when using them as weed barriers, according to Kluznik. "The clients expect them to eliminate weeds. No matter how good the product is, you will still have weeds. You might minimize them, but they are going to grow when there is mulch on top of the weed barrier."

WEEDING OUT CONCERNS. Contractors generally agree that landscape fabrics by themselves cannot prevent all types of weed growth. "A little 2-ounce piece of fabric is not going to stop weeds that can show through 6 inches of blacktop," said McMurry. "But it will cut down on the amount of weeds that do penetrate, which makes maintenance that much easier."

Kluznik in particular isn't sold on the weed prevention capabilities of the fabrics. "I have some reserva-

(continued on page 60)



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Landscape Fabric

(continued from page 48)

tions about using them as weed barriers," he said. "But, as a reinforcement fabric or as a soil separator, they are ideal."

Fabrics don't offer 100 percent weed solutions, said McMurry. "You have to cut through the fabric to put plants in, and that allows a space for weeds to come up."

Frost heaving is also a problem, noted Moore. "If the fabrics are not installed properly, they can be pushed up with the frost. And that can cause more problems than it solves with weed control."

Another concern, he added, is trying to rework a planting bed once the fabric is laid. "It does create a lot of work."

Manufacturers agree landscape fabrics are not 100 percent effective weed barriers. "They will reduce weeds by about 90 percent," said Jane Underwood, sales manager for Reemay Inc., an Old Hickory, Tenn., supplier of fabrics. "Some very aggressive grasses will come through, but all in all, we have had a lot of success."

Effectiveness is increased when the products are used in conjunction with a preemergent herbicide, she added. "We suggest spraying Roundup first and then putting the fabric down and covering it with mulch or stone."

Reemay offers a fabric that already contains preemergent herbicide, but the product is designed for specialty applications, such as preventing tree roots from invading foundations, etc.

In agreement with Underwood is Boyd Thomas, director of marketing for Easy Gardener, Waco, Texas. "Depending on the fabric, there will still be a few weeds popping through. If your clients expect it to stop 100 percent of the weeds, they will be disappointed. It will not, and we make no claims that it will," he said.

"We put it on our package, especially if you have areas with infestations of nutgrass or rhizome grass, that you will need to use chemical treatment before — or if there is some infestation — afterward, in order to eliminate any weeds that tend to come through," he added.

Many fabrics not only act as weed barriers but provide erosion control as well. Photo: Easy Gardener.

"We try and be upfront about that right in our instructions," he said. "And if we are telling the contractors this, it should be up to them to tell the homeowners."

"If the homeowner buys a fabric at a Home Depot, he will know that the fabric is not a 100 percent solution. However, if the contractor does the job, the homeowner never sees the package."

Many contractors voiced con-

cern about weeds whose seeds were

prevent that from happening." McMurry, however, said downward root penetration does not occur often enough to be a concern. "With the leaves dropping off of the bushes, you are creating an environment for seeds to sprout. Since this is above the fabric, it really has no effect on the weeds' growth."

"However, when you go to weed the bed, you don't really have to pull it out of the ground, you just

'If your clients expect (fabric) to stop 100 percent of the weeds, they will be disappointed. It will not, and we make no claims that it will.'

cern about weeds whose seeds were wind-deposited in mulch on top of fabrics. Neal Caldwell, president of Dalen Products, Knoxville, said a few fabrics are even marketed to prevent weeds' roots from burrowing down through the fabric to the soil below. Three-layered fabrics offering reduced porosity are most effective, he said. While those products can't prevent tough weeds from coming up through the fabric, they can prevent weed roots from penetrating downward.

"Ninety-five percent of your problems will be crabgrass seeds that blow into the top mulch," he said. "Crabgrasses are tough weeds; their roots will grow through most fabrics. Few landscape fabrics can

pull it off the top of the weed mat, which is an advantage from a maintenance point of view," he said.

McMurry pointed to specific situations where landscape fabrics are beneficial as weed preventers. "They reduce the weeds that come up from the ground. If you are on a conditioned site where there is a lot of weeds in the soil already, or if you are going to rip out and redo a planting, the fabric will help prevent weeds from coming through," he said.

Additionally, "if you are out in the middle of somebody's front yard and are planting a palm tree within a 10-foot circle of mulch and nothing else in the circle, the fabric will work. But if you are

planting in 12-inch centers and use fabric, you will be doing a lot of cutting," he said.

Despite the pitch for fabrics, Moore prefers the protection offered by a preemergent spray coupled with several inches of mulch. "I haven't found an advantage of the fabrics in weed applications applications," he said. "I don't think they work any better than mulch."

He also believes the mulch method is more cost effective. "I haven't really figured out the cost of installing the fabrics in a bed, but we have found that it is more cost efficient to clean the bed, put the mulch in and do preemergent chemical applications."

And for his customers' benefits, "We feel it gives better results."

George Morrell, chief executive officer of The Morrell Group, an Atlanta-based contracting firm, contends that pine straw, which is plentiful in the Southeast, offers an organic alternative to fabrics. "A few years after installing the fabrics, the decomposed organic layer on top of the fabric becomes a bedding for weeds," he said.

The pine straw offers several benefits, he said. "It's abundant, cheap and natural looking. We put it down twice a year as a mulch. It adds aesthetic value. When we replenish it, it kind of refurbishes the beds and makes everything look really smooth and clean."

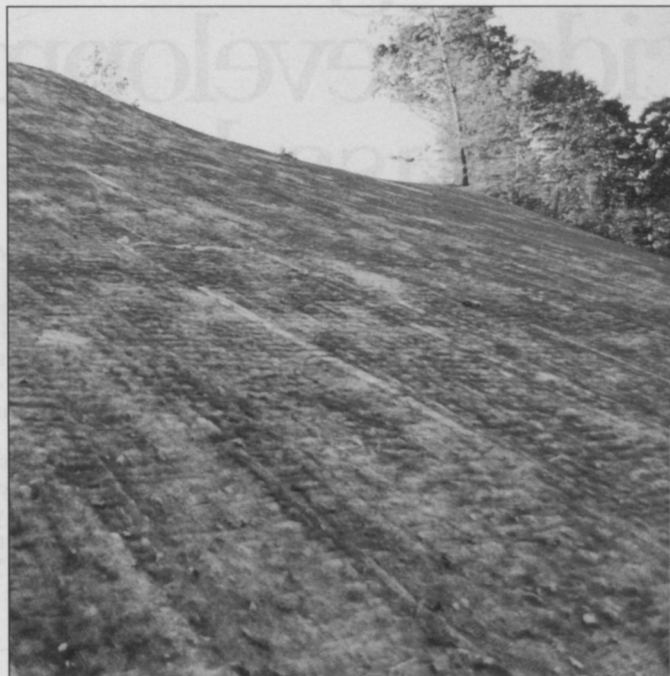
"Once that decomposed layer of pine needles builds up, it does basically the same job as the landscape fabric, but it is a natural product."

CLIENT SATISFACTION. Meeting expectations is the key to success with landscape fabrics. Contractors who wish to use them as weed barriers must be upfront with their customers that the fabrics will not stop all weeds, since they are not marketed as having that capability. They are very effective, especially used in combination with preemergent and event postemergent herbicides.

And contractors looking for more than just a weed barrier product can expect to find success using the fabrics in other applications.

As Moore noted, "They have their place. A lot of people have had good results with them as weed preventers. We happen to use them more frequently for other types of applications."

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



PESTICIDES IN THE URBAN ENVIRONMENT

PART 9

Water Quality

Pesticides and nutrients from lawn care application neither runoff nor leach from the soil under turfgrass. But rather than scientific data, contractors should promote the environmental benefits of turf.

By Barbara G. Howell

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

WATER, WATER everywhere and, still, we do not know what to think.

Five years ago, studies in Pennsylvania, New York and Rhode Island reached similar conclusions. First, well-maintained turf is an excellent sponge; it soaks up



PESTICIDES IN THE URBAN ENVIRONMENT

water, nutrients and pesticides and filters contaminants. Secondly, by the time the water from such turf runs off, contamination from fertilizers and pesticides is minimal.

Yet, questions about the impact of lawn and landscape products on water quality are still being asked. Citizens continue to voice their concerns, and research goes on. Regulation is, again, on the industry's doorstep.

Groundwater, defined as water found in a saturated zone in sufficient quantities that it can be pumped out, is not really the issue. Areas above aquifers, recharging zones and around the nation's 550 community wells are well protected not only from pesticide pollution, but also from land use practices which could pollute drinking water sources.

Such protection is being extended by Environmental Protection Agency-required state management plans which identify vulnerable areas. Specific management plans will then be drafted to control pesticide applications and other activities in those areas where monitoring has shown contamination. Activities of lawn and landscape contractors are of minor concern since so many other pollution sources exist.

The real issue for lawn and landscape contractors is surface water — rivers and lakes which catch the runoff from lawns, streets and fields. Studies conducted in 1988 by Tom Watschke at

Pennsylvania State University and W. Michael Sullivan at the University of Rhode Island showed that pesticides and nutrients from lawn care applications neither runoff nor leach from the soil under stands of turfgrass.

RESEARCH GOES ON. A new study being conducted on 142 acres of residential property in Minneapolis shows detectable levels of pesticides in 85 percent of the storm events sampled. Two facts about these "detectable" levels are important.

First, the levels of MCP, MCPA, 2,4-D and dicamba in the samples were detectable, but not unhealthy. Except when the storm water was collected from a gutter alongside a street, the levels were well within drinking water standards.

Secondly, according to one of the study's authors, Jeff Lee, environmental programs manager, Minneapolis Parks and Recreation Board, the levels of specialty pesticides found in storm water runoff was higher following a weekend.

"Data points the finger more toward the homeowner than the lawn care applicator," Lee said.

Lee suggested that the levels of pesticides found in these samplings may well be attributed to misapplication or over application. For example, traces of broadleaf herbicides were found year-round in the storm water runoff. However, lawn and landscape applicators indicated that they were not making applications in summer months.

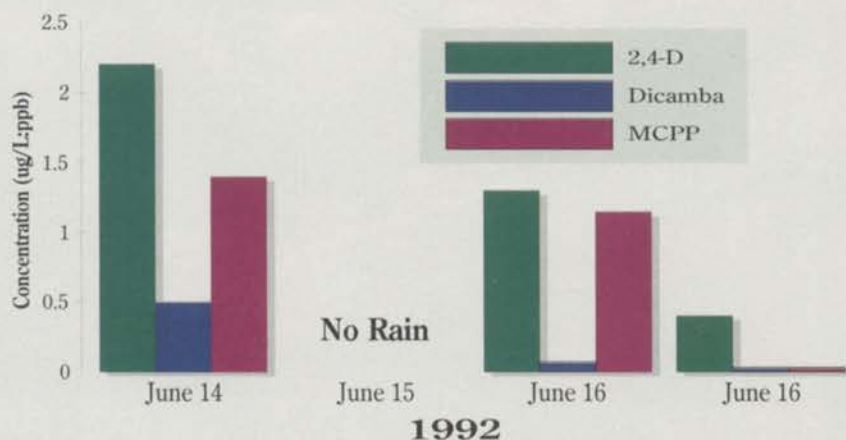
He attributed the increased levels, then, to homeowner applications, perhaps at excessive rates. Misapplication and failure to sweep chemicals off hard surfaces like driveways, for example, also contribute to these levels.

The EPA is financing the second phase of the Minneapolis study designed to determine the lawn care practices of 2,800 homeowners, and to educate them on improving do-it-yourself practices.

"The message of the

Concentrations of pesticides in storm water runoff were found to be higher following weekends or periods of no rainfall in Minneapolis. Notice on June 16 it rained twice. Source: Jeff Lee, Minneapolis Park & Recreation Board.

Event Mean Concentration





Correct application measures and doses are good for turf and the industry in general. Photo: Moyer & Son.

"At the state level science plays an important role," James said. "We have been able to gain statewide preemption in 40 states. This has helped the industry overcome the challenge of local ordinances."

While he encourages environmental concern and urges proper application rates and techniques, James suggested lawn maintenance operators promote the enormous benefits of turfgrass in helping to prevent erosion and actually clean up pollu-

tion. He suggested that they tell customers what they are doing to be good stewards to the environment.

Lee's best advice to lawn and landscape operators is to be concerned about water quality and make appropriate applications at correct rates, at correct times, using correct application methods and cleanup procedures.

LEVELS. "Detectable" is often a key word. Allen James, executive director for the Responsible Industry for a Sound Environment, said that, too often, "detection is equated with pollution. Something can be detected but still be well below safe levels of concentration. Some people hear 'detection' and they equate that to 'exposure' and believe that means 'harm.'" Sometimes this confusion leads to attempts at regulations.

The use of scientific evidence is often not effective at the local level, James said. RISE has struggled with innumerable attempts at local regulation of the lawn and landscape industry in its three years, beginning with a successful effort in Missoula, Montana.

Too often, community leaders react to the pressure of activist groups and do not heed scientific evidence. This lack of scientific reasoning has led RISE to work to make pesticide regulation fall under state control to preempt local ordinances.

tion. He suggested that they tell customers what they are doing to be good stewards to the environment.

"Talk to your customers and to their neighbors. Good communication is key. Tell them what you are applying, why and how it will help. Tell them about your training and safety programs. Answer their questions."

NITRATES AND PHOSPHATES. Despite the findings of the Rhode Island study, fertilizers are again under close scrutiny. Sullivan's work on nitrate leaching showed that concentrations were affected not by the rate of nitrogen applied, but by the watering practices on the site.

Perhaps because fertilizer application is not covered under state preemption regulations, many communities now question nitrate and phosphate levels in surface water which may be affected by fertilizer application.

Sullivan said he continues to get requests for testimony on a regular basis from "a host of communities" which are trying to control fertilizer applications.

"Frequently, the attempts to rule and regulate are based on sensationalized news reports and rarely any scientific input," Sullivan suggested. "The unfair reality is that the attempts are directed at the commercial applicator and not the homeowner."

PESTICIDES IN THE URBAN ENVIRONMENT

The homeowner, not only the one who is making DIY fertilizer applications, but the one who fails to work in a team effort with his lawn care company, is often at fault.

Sullivan's study found that, on turf watered by rainfall alone, nitrate levels in samples collected at turfgrass root zone levels varied little with increased rates on nitrogen.

"Turf is a phenomenal scavenger when it comes to drawing nutrients," concluded Sullivan.

At zero pounds of added nitrogen per 1,000 square feet, the leachate rate was about 2 pounds per year. When the applied nitrogen rate increased to two pounds, the leachate showed only 3 pounds per year. At 5 pounds of added nitrogen, the leachate showed only 3 1/2 pounds per year.

Leachate losses became greater, Sullivan said, when the turf was over-irrigated. Then, the losses were substantial. As much as 15 percent of the nitrogen could be washed away from the plant if the turf were flushed with irrigation water following a rainfall.

When watered with 1 1/2 inches of water a week above the normal rainfall, the leachate showed 3 pounds of nitrate being lost from turf to which no nitrogen was added. Under the same wa-

tering conditions, 13 pounds per year of nitrates were collected from turf with two pounds of nitrogen added per 1,000 square feet. If nitrogen was added at a rate of 5

(continued on page 66)

Leachate Rate

APPLIED N ADDED WATER	0 LBS. N/1,000	2 LBS. N/1,000	5 LBS. N/1,000
0"/week*	2 lbs./year	3 lbs./year	3.5 lbs./year
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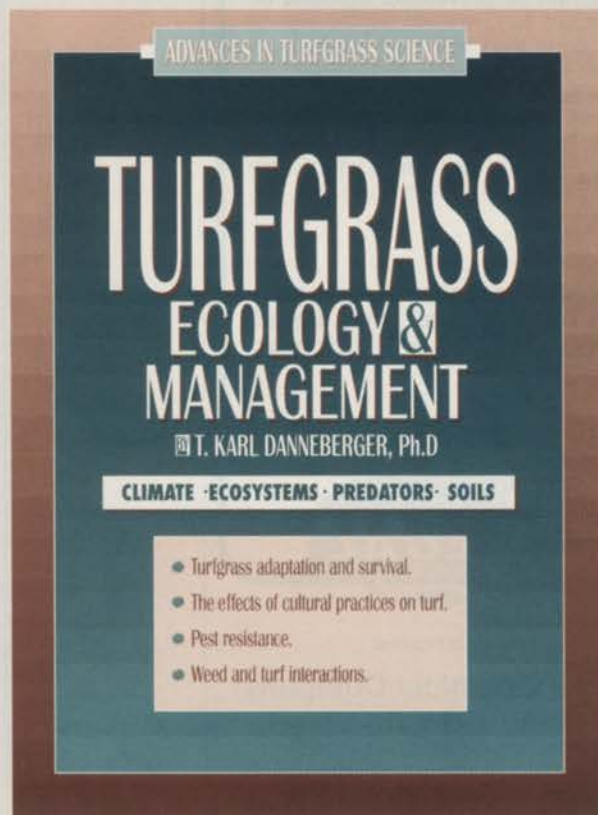
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PESTICIDES IN THE URBAN ENVIRONMENT

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pounds per 1,000 square feet, 28 pounds of nitrates per year leached out under heavy watering.

"Work with your customers," Sullivan suggested. "Find out what their watering practices are and adjust application rates and timing to fit that pattern. If they are over-watering and losing nitrates, not only is there a potential environmental concern, but you are wasting the nitrogen that should be going to the plant and they are wasting water."

NITRATE AND PHOSPHATE SOURCES. While everyone acknowledges the presence of nitrates in ground and surface water, the real areas of confusion are sources and levels of nitrates.

One long-term study at the Rothamsted Experiment Station in England showed that most nitrate leaching occurs from the decay of organic matter and crop residue, not applied nitrogen. With so many sources of nitrates, it is difficult to determine their individual contributions to the water level.

According to "Facts from Our Environment," a publication provided by The Fertilizer Institute, "...the total nitrates found in water today are not adjusted for 'base' nitrate levels coming from natural organic matter release." The publication cites a water quality analysis from Illinois in 1860 that revealed approximately 50 parts per million nitrate-N, five times the present public health standard.

The publication also cited a study in Texas where commercial N is not a factor. The wells in the area were tested for nitrates in the 1960s and, again in the 1980s. One half of the wells showed a higher nitrate level in readings from the 1960s.

Kathy O'Hara from The Fertilizer Institute said that organization is working only on a national level. She knew of some local attempts at regulation of fertilizer application by lawn care applicators; those attempts are monitored by state agribusiness organizations.

While nitrate levels are a major source of concern in the local regulations, there are also reports from several areas which indicate that some ordinances try to regulate phosphate levels. Like nitrates, phosphates found in water can be from a number of sources including organic matter and naturally occurring phosphate concentrations in soil which have been disturbed by construction.

Phosphates are of particular concern in surface water because excess phosphate levels in lakes can cause undesirable algae bloom. A publication by the extension services at Iowa State University and University of Minnesota suggested that while misuse or misapplication of materials containing phosphates is a concern, "proper application techniques for each given

(continued on page 78)

People

GENE HINTZE JOINED Sandoz Agro's Specialty Products Business Unit as marketing services manager. Hintze formerly worked on a variety of turf, ornamental, professional pest management and agricultural accounts for Bader Rutter & Associates, a public relations and advertising firm.

Griffin Corp. named **Lynn Harper** business director of its nursery and ornamental products division. Harper oversees sales and marketing of Spin Out™ root growth regulator, leads regional sales in the United States and helps develop and implement business strategies in other countries.

ISK Biosciences announced the following appointments: **Osvaldi DiGiacomo** as sales representative, Sorocaba, Sao Paulo, Brazil, responsible for commercial development and sales of Chlorothalonil, Daconate, Sanson and Atabron. DiGiacomo previously served in technical services with Sao Vicente, Sao Paulo/Casa Bernardo Ltda.; **Afonso Silva** as sales representative, in charge of commercial development and sales of Chlorothalonil, Daconate and Sanson in a specific territory in Brazil; **Lisa Lowe** as secretary, responsible for secretarial support to the North America business products manager and the Americas



Wheeler



Harper

business development manager. Lowe formerly served as administrative assistant with Remco America; and **Justin Wolfe** as sales trainee, responsible for sales in Michigan, Indiana, Illinois, Ohio and Kentucky.

PWT Waste Solutions named **Michael Wheeler** vice president of operations, maintenance and management, charged with overseeing operations at existing facilities while planning for new facilities. Wheeler formerly served as deputy utilities director for Hamilton, Ohio, supervising water and wastewater services including the city's in-vessel biosolids composting facility.

Solatrol appointed **Dan Clawson** president and chief executive officer. Clawson previously held top positions in sales, mar-

keting and operations with Toro Irrigation, Johnston Pump, ITT Jabsco, Johns-Manville Buckner and Febco AG-Turf. He is also partner of Growth Marketing Associates, a management/marketing consulting group.

Crandall Hicks Co. hired **Jim Goodall** as part of its executive staff. Goodall previously worked at Husqvarna Forest and Garden.

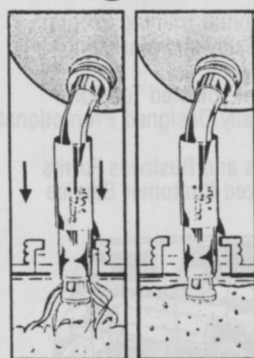
Jacobsen named **Jordy Smith** regional sales manager for the northwestern United States and western Canada. Smith formerly served as territory manager in the turf industry.

Jeff Rzepecki joined L.R. Nelson Corp. as sales manager for the California/Southwest territory. Rzepecki directs sales and marketing efforts for Nelson's landscape and turf product line, and coordinates new product introductions and training. He formerly served as service line manager at Environmental Care.

Becker-Underwood appointed **Wally Boilek** Eastern U.S. sales manager, in charge of sales east of the Mississippi River. Boilek was formerly sales manager for I.S.I. Terra-Sorb.

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USE READER SERVICE #81

Products

United Horticultural Supply offers Turfgo LI 700 for turf, a surfactant which improves penetration of pesticides by driving them through a plant's natural protective barriers. The more rapid penetration through the plant's hairy and waxy surfaces keeps pesticide from being washed off by rain or irrigation water.

Turfgo LI 700 also can be used as a wetting agent to uniformly cover a plant's surface area, or as a pH adjuster for products

sensitive to high pH water. Since alkaline water causes many pesticides to degrade, Turfgo LI 700 adjusts the pH level of alkaline water, reportedly preventing pesticide loss and improving compatibility.
Circle 126 on reader service card

The 3D turfgrass biostimulant from **Plant-Wise Biostimulant Co.** is billed as a top performer in tests conducted by Dick Schmidt at the Virginia Polytechnic Institute.

The concentrated biostimulant is derived from cold-process seaweed and fortified with proprietary humic acid and plant growth nutrients. It is designed to give a "three-dimensional" approach to turfgrass conditioning offering foliar enhancement, physiological integrity and foundation fortification.
Circle 127 on reader service card

PRODUCT SPOTLIGHT

Vertex Water Features offers the TwoTier floating fountain for lakes and ponds. The all-brass head produces a wide-spreading, dramatic water display. The center jet column reaches 40 feet and heavy floral sidejets arch up to 20 feet high. The system supports 15 and 20 sidejets depending on pump size.

TwoTier's spray pattern can be illuminated with up to four light fixtures for nighttime viewing.

The standard equipment package includes fountain, motor, lighting, 100 feet of cable and a control panel. All fountain components are billed as waterproof and corrosion resistant.

Circle 125 on reader service card



Diamond Machine Technology is marketing the DMT Diafold™ Whetstone tool sharpener.

DMT's 4-inch Whetstone tool sharpeners feature protective plastic carrying cases that

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USE READER SERVICE #73

unfold into permanently attached handles. Each Whetstone consists of perforated diamond-covered steel sheet injection molded onto a base of glass-fiber reinforced plastic. The plastic fills the perforations, creating islands that dot the diamond surface and help clear shaven metal particles. The islands make dry sharpening possible.

Circle 128 on reader service card

Growth Products upgraded the packaging for its professional liquid fertilizers, micronutrients and natural organic products. The new Mini Bulk package holds 275 gallons and fits on a standard 48-inch by 40-inch pallet.

The Mini Bulk is constructed of eight plies of heavyweight corrugated paperboard which can withstand heavy compression.

Each package is available with side dispensing valves that can be emptied by gravity. The package can be broken down into a corrugated box with a polyethylene bag liner for quick disposal and recycling.

Circle 129 on reader service card

The **Ferris CTR™** compact rider features a Geo-Steer system that pivots around the inside drive wheel and a space-saving lift system for an 8-inch clearance.

The automobile-type steering wheel is billed

to provide safe, precise steering, with tight turning and good control on hills.

The front-steering tires on the Geo-Steer system should hold in place if a rear wheel spins on side hills, and the system has even weight distribution for traction and stability.

The 78-inch CTR rider also features a Scissor-Matic Lift, a manual or optional electric-powered cylinder which raises the cutting deck on folding arms for a 4-inch clearance and lowers for cutting heights between 2 inches and 4 1/2 inches.

The rider's main frame rests on scissor arms to provide 3 additional inches of clearance.

Circle 130 on reader service card

Two yard tractors offering air induction are available from **Husqvarna Forest & Garden.**

The YT180 and the YTH180 are equipped with 18-h.p. engines and feature 42-inch decks that draw air from vents into the underside of the decks. The air induction feature allows operators to lower cutting heights for plush grass areas.

Both tractor models feature mulching blades and chute blocks, as well as snow-blade, blower and tiller attachments.

The YTH180 also offers hydrostatic drive,

a fluid-drive system which allows a full range of "shift on the go" forward or rear ground travel through the adjustment of one lever. The hydrostatic mower has a built-in neutral position between forward and reverse speeds.

Circle 131 on reader service card

Bidding & Contracts, Your Key to Success, a 40-page text from Wayne's Lawn Service, details effective bidding techniques used in 19 states including Hawaii and California. Topics covered in the book include pricing, profit, cost calculations and contracts.

Circle 132 on reader service card

Integrated Pest Management Systems offers Turfject, a low-pressure, low-volume pesticide injection system for controlling molecrickets, nematodes and grubs.

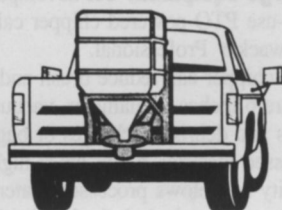
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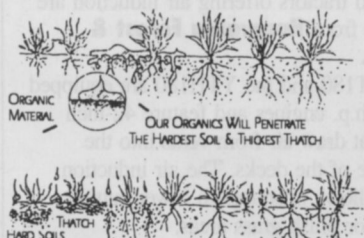
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borne insects and nematodes live. Unlike high-pressure systems, Turfject uses pressure from 20 psi to 50 psi and volumes from 10 gpa to 20 gpa.

The system injects pesticide below the turf's thatch layer, reducing photodegradation and tie-up of the product. It also reduces pesticide exposure to the applicator and environment, allows applicators to use liquid-applied products such as wettable powders, dry flowables, liquids and biologicals and reduces pesticide runoff.

The injection system also can serve as a verti-cutter while applying pesticide. It uses a spring-loaded disc to slice the sod, creating a 1/2-inch to 2-inch deep slit. A low-pressure, thin stream of pesticide solution is injected into the slit.

Circle 133 on reader service card



LaBarge Equipment Co. developed a multi-use PTO-powered chipper called the Bushwacker Professional.™

The chipper can reduce brush and limbs that are 6 inches in diameter, vacuums leaves and debris, discharges or bags processed material, blows air at high velocity and blows processed material.

Other options include hydraulic chipper feed, auxiliary shredder, bale hopper, 48-inch ground vacuum and metered mulch discharge.

Circle 134 on reader service card

Basamid® granular soil fumigant from **BASF Corp.** is now available in 7 1/2-pound, shaker containers.

The smaller containers allow users to purchase the correct amount of product for small areas. The smaller dose of fumigant treats from 600 square feet to 1,500 square feet, depending on target pests. The container's shaker top helps ensure the granular product spreads evenly.

When worked into the soil, Basamid controls many nematodes, soil-borne diseases and weeds. Basamid is labeled for use in ornamental, turf, horticultural nurseries, lawn renovation and potting soil.

Applications include sod production, turf renovation, fumigation of new ornamental seedbeds and reconditioning of older ornamental beds.

Circle 135 on reader service card

V&B Manufacturing's "six in one" tool kit offers six Groundbreaker landscaping tool configurations for digging, trenching, chopping, weeding, planting and tilling.

The pack includes two additional handles that are 36 inches and 26 inches long, respectively. Three reversible tool heads can be used in combination as picks, tillers and axes.

The tools feature rust-resistant ductile iron heads and seasoned hickory handles.

Circle 136 on reader service card

The Quad model all-vegetative debris processor from **VC Marketing** features four sets of knives, flails and blower fins, rather than the three sets available in the Y models.

The extra set allows the Quad models to feed and process material about 25 percent faster and eject chip and mulch about 3 feet to 4 feet farther than the Y series.



The Quad processors incorporate 18-h.p. Briggs & Stratton Vanguard and 22-h.p. Kohler Command engines.

The AVP reduces all types of vegetation through the same feed hopper.

Circle 137 on reader service card

Easy Gardener added the ProWeedBlock non-woven geotextile to its line of landscape fabrics.

Puncture- and tear-resistant, the ProWeedBlock is available in professional-sized 3 feet by 150 feet and 6 feet by 150 feet rolls. Its micro-funnels taper at the bottom to block out light weeds while allowing air and water to pass through freely. High permeability of both air and water should eliminate runoff as well as soil souring.

ProWeedBlock is geared for use around trees and shrubs, under walkways and patios, as well as in drainage systems and septic tanks, to filter out silt.

ProWeedBlock contains ultraviolet inhibitors for enduring long periods of direct sunlight.

Circle 138 on reader service card

RELM Communications offers the WHS150, a small, portable, scanning two-way radio measuring 6.4 inches high by 2.45 inches wide by 1.3 inches thick.

The 5-watt, 16-channel, scanning, VHF (150-174 MHz) synthesized radio is ideal for users who need multiple channels which can be constantly monitored.

Operation has been simplified by allowing the user to access channels directly through the keypad or by rotary knob located on the radio's top panel.

The radio also features built-in CTCSS signaling and a full-function keypad which is DTMF compatible. CTCSS is a privacy option which keeps the radio quiet until a message with an individual code is received.

The radio is housed in a lightweight, durable diecast alloy case.

Accessories include a drop-in battery charger, microphone and leather carrying case.

Circle 139 on reader service card



John Deere offers a new generation of skid-steer loaders incorporating quieter engines, improved vertical lift boom and sturdier frames and components. Additional features include more cab room, improved visibility and easier access to key service points.

The JD 4475 features a 30-h.p., liquid-cooled diesel engine. Its compact size — coupled with a 1,360-pound rated SAE operating capacity — makes the loader usable for a variety of applications.

The mid-size JD 6675 is powered by a 42-h.p., liquid-cooled diesel engine.

Circle 140 on reader service card

The Original Ez-Pull Pickup Unloader from **Yates Industries** incorporates a strong mat attached to a shaft that can be rotated with a crank handle. Turning the handle rolls the mat onto the shaft which enables the user to pull heavy loads rather than lift them.

The Ez-Pull is available fully assembled and easily attaches to pickup trucks.

Circle 141 on reader service card



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SEP. 7-11 RISE Annual Meeting, Ritz Carlton, Naples, Fla. Contact: Responsible Industry for a Sound Environment, 1156 15th St. NW, Suite 400, Washington DC 20005; 202/872-3860.

SEP. 8-9 Southwest Horticultural Trade Show, Phoenix Civic Plaza, Phoenix, Ariz. Contact: Cheryl Goar, Arizona Nursery Association, 602/966-1610.

SEP. 13-14 Turfgrass Research Conference and Field Day and Landscape Management Research Conference and Field Day, University of California, Riverside. Contact: Cindi McKernan, registration coordinator/research conferences, Department of Botany and Plant Sciences, University of California, Riverside, CA 92521; 909/787-3423.

SEP. 18-21 ALCA Interior Plantscape Division Conference & Trade Show, Mirage Hotel, Las Vegas. ALCA's Certified Landscape Professional Exam takes place Sept. 21. Contact: Associated Landscape Contractors of America, 12200 Sunrise Valley Drive, Suite 150, Reston, VA 22091; 703/620-6363.

SEP. 18-21 Florida Turfgrass Association 42nd Annual Conference and Show, Broward

County Convention Center, Fort Lauderdale. Contact: FTGA, 302 S. Graham Ave., Orlando, FL 32803; 800/882-6721 or 407/898-6721.

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. 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 Ornamentals 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. 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; 908/246-3210.

NOV. 5-8 IA International Irrigation Exposition, Inforum/Apparel Mart, Atlanta. Contact: Irrigation Association, 5260 Willow Oaks Corporate Drive, Suite 120, Fairfax, VA 22031; 703/573-3551.

NOV. 3-4 1994 WALP State Conference, Bellevue, Wash. Contact: Washington Association of Landscape Professionals, 206/236-1707.

NOV. 6-9 National Institute on Park and Grounds Management, Orlando, Fla. Contact: NIPGM, 414/733-2301.

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.



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emergence herbicides that make this possible. All of them are very gentle on your plants. And they bind tightly to soil particles, which makes them very resistant to leaching. If you're looking for grassy weed control, you

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Pesticides in the Urban Environment

(continued from page 66)

turfgrass site should pose little or no threat to water resources."

The report cited a study of storm runoff in 16 Minneapolis lakes. The study compared areas where P-free fertilizer had been applied with those where P-containing fertilizer was used. "Little or no difference was observed in P in the runoff water," the study concluded.

EFFECTIVE ANSWERS. As studies and attempts at regulation continue, lawn and landscape contractors must help answer public concerns. They should:

- Continue to emphasize the benefits of turfgrass. Tell customers, neighbors and concerned citizens that turfgrass prevents soil erosion (and, thereby water pollution); that turfgrass helps filter air and water and produces oxygen.
- Be knowledgeable and train applicators in proper products, rates, timing and application techniques.

- Encourage aeration in turf maintenance programs to improve soil structure; increase water retention and nutrient penetration; and decrease runoff.

- Use proper application techniques and rates. Do not over use or misapply.

- Employ proper cleanup procedures. It's essential that product be swept off hard surface areas like driveways and sidewalks. Turfgrass absorbs nutrients and chemicals; concrete does not.

- Talk with customers about watering practices. Make certain that your applications are in sync with their individual watering practices.

- Offer information and answer questions. Tell customers or concerned citizens what your company is doing to protect the environment.

- Become well-acquainted with studies on water quality so that you may give informed answers. Jeff Lee, for example, will be speaking on the Minneapolis study at PLCAA's annual meeting in St. Louis in November.

Refer questions to which you cannot adequately respond to PLCAA or other professional organizations.

The author is an industry consultant with Key Solutions, a division of Iris Sales & Solutions Inc., Rocky River, Ohio.

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Pond Management

(continued from page 49)

Environmentally conscious clients will always challenge the idea of killing aquatic vegetation. Both warned. "The bottom line is there is going to be dead vegetation — the weed that you are trying to control," he said.

He cautioned against depleting growth in ponds heavily concentrated with vegetation. "Killing the vegetation will cause the microorganisms decomposing that growth to use the oxygen in the water," he said. "This can cause some fish to suffocate."

A means of controlling this, he said, is to attack small sections of the pond at one time. "If most of the water is choked with weeds, treat it in strips," he said. "Treat no more than one-third of the total area at any one time. This allows for safe oxygen depletion."

After the first kill, pond managers should wait four weeks and treat another one-third, he added.

SLOW KILL. Other herbicides are formulated to kill aquatic weeds over an extended period. "For plants like hydrilla, you will get a dropout (of weeds) in about 45 days," said Bill Culpepper,

president of SePRO Corp., Carmel, Ind. "That is important because the vegetation is usually just a total mat, from the bottom to the top of the water, and there is a lot of mass there. If you kill all that mass suddenly, you are going to kill all of your fish and get an oxygen imbalance."

Unlike some herbicides that are applied directly on the plant, the slow-kill herbicides are applied to the water, where they attack vegetation. The latter products act more slowly than the direct-application herbicides, which might concern customers who want immediate results.

"You have to explain to your customers why a slow kill is better for their ponds," Culpepper said. "Many farmers understand the need for a slow kill, but many individuals who have had ponds installed do not. They need to know upfront that it is a slow kill and why it is a slow kill, why it is a benefit."

A better method is to apply herbicides early in the season, before weed problems occur, Culpepper said. "Most lake managers know that, and they use herbicides as a preventive step," he said. "It is just like killing terrestrial weeds. If you prevent them early on, you won't have to deal with the problem later."

"Once pest species have been established, they become very difficult to eradicate," said Ken Brown, a spokesman for the Aquatic Plant Management Society, Vicksburg, Miss. "It happens on land, and it is also true of aquatic plants. Once a root stock is established, it is very difficult to eradicate."

According to Brown, pond managers are best advised to plan in advance. "Draw up an ecological plan from the start. Landscape management and ecological science have long been at odds. Landscape managers are interested in putting in something that has a known number of species with known locations. While landscape is a design process, an ecological system will vary from year to year and season to season."

"The pond management approach should take into account the possibility of unwanted species getting into an area and plan on how to prevent that," he said.

By focusing on all aspects of the pond management system, the landscape professional can offer customers a total pond management package, designed specifically for each installation. ■

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

Fertilizer Trends

(continued from page 34)

reduce burn potential. Some of that might just be straight urea based; some, a controlled-release nitrogen.

Another trend is increased use of granular fertilizers for turf, most containing N, P and K. Most slow-release N applications are granular, White said. "You get longevity out of a granule you don't normally get out of a liquid."

Granular is the way many operators go, he added. "You have less capital tied up in large tanker sprayers. You can get a professional spreader and put it in the back of your old car, and you're in business for no more than a couple hundred bucks."

Reynolds would like to see more slow-release nitrogens built into fertilizer bags. He is also waiting for "agronomic reasonability" to catch up with the "marketing hype" surrounding micronutrients, he said. He believes micronutrients currently cost too much to warrant extensive use on lawns.

AN EXCEPTION. Despite the trend toward granular applications, Albrecht said he employs a lot of liquid as his slow-release N. "We're primarily a liquid company — we actually buy a couple nitrogen sources, a slow release and a quicker release, depending on the time of year. Then we'll buy some phosphorus and potash. We do a lot of foliar feeding with iron formulations."

Nitro-Green has offices in 16 states, mostly in the West.

Requirements are all over the map.

For instance, Albrecht has branches in Greeley, Colo.; Cheyenne, Wyo.; and Fort Collins, Colo., all in a triangle, each town 40 miles apart from one another. All their NPK formulations are

"very much different," he said.

How do you hit on the formulation that works for an area?

"You have problems and then you try to find out. You do a soil test. You do leaf analysis tests, see what is actually in the plant; we rely on that a little more than we do soil tests. Soil tests will tell you what is in the soil. That does not necessarily mean it's available to the plant."

Nitro-Green works generally in clay soils with little or no rain. Potassium is a tricky element of the NPK puzzle. "You don't want to assume, 'Well there's a lot of potassium in the soil so we don't need to add any,'" said Albrecht. "Is it available to the plant? The only way to find that out is through tissue analysis."

Even within the same city, NPK applications can vary dramatically. "The guys up on the bluff have different requirements than the guys in the old part of town where it's shady."

CAN THEY WATER? Reynolds has manipulated his fertility schedule to accommodate the likelihood that he's going to have a stressful climate. Indeed, regions with water restrictions can limit fertilizing schedules.

"We're not fertilizing during the summer. We're coming in during spring, with a large quantity of fertilizer, 100 percent controlled release. For three years now we're on a fertility schedule that's not standard in this industry. Lots of customers don't want to, or can't, water in summer. Maybe the city doesn't want to spend money."

The first thing Reynolds' crews do is determine whether the client will water to keep the grass green during the summer.

"If so, we come in with a fertilizer in the spring that will last for six months. If not, we come in with a fertilizer in the spring that greens it for the

spring but does not have long duration; and we do not fertilize in summer."

The 500,000-square-foot condominium complex with the sophisticated sprinkler system, and the budget to use it over the summer, is an exception. More and more, Reynolds is skipping the summer fertilization and customers consent to living with browned summer turf, in order to save water.

In either case, it's a sale of a premium, educated, ecology-conscious service. "It's not the mass-marketing, telemarketing salesperson who is ignorant of any agronomy. This is an individual who is savvy in putting together an effective lawn care program," Reynolds said.

Nitrogen is affected by this program, as well as the NPK ratio.

"If we're going for a lawn that's going to be green during the summer, the amount of nitrogen is very high, and the type is a slow release," Reynolds said. "It's going to release over a six-month period. Otherwise, we're going to use a fast-release fertilizer and the quantity is going to be necessary only to stimulate growth in the spring."

Reynolds added that he usually uses a 4:1:1 combination for lawns fertilized in spring only. For a lawn to be watered in summer, our potassium is increased significantly over the course of the year."

Boosted K builds resistance to drought, heat, cold and other stresses, he said. "We go a step further even. Instead of just using potassium chloride (a potentially turf-burning salt), we use potassium sulfate," Reynolds said. It seems a number of companies are turning to potassium sulfate, a kinder, gentler element than chloride. ■

The author is a Contributing Editor to Lawn and Landscape Maintenance magazine.

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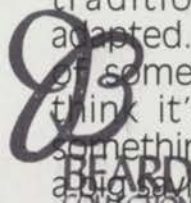
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