It’s simple. PRE-M® is the country’s leading pendimethalin herbicide. And no wonder. With over 12 years of proven performance and formulation improvements, PRE-M is here to help your business grow.

What’s more, PRE-M comes from the leading supplier in the professional turf care industry, LESCO®.

Talk to your LESCO professional about new, special rebates for PRE-M purchases, or call 800-321-5325. And put the leading edge to work for you.

The Leading Edge.
February 1999
VOLUME 38 NUMBER 2

INSIDE

FEATURES

22 HOT NEW PRODUCTS
These products really got our attention
Ron Hall & Nancy Stairs

30 LM REPORTS: SEEDERS
New units for every application
Curt Harler

DEPARTMENTS

10 OPENING SHOTS
14 ASK THE EXPERT
16 ARBOR VIEW

COLUMNS

12 HOT TOPICS
77 EVENTS
78 INFO CENTER
78 SUPPLIERS CORNER
83 PRODUCTS
86 AD INDEX
87 CLASSIFIED
90 GRAB BAG

ON THE COVER: PHOTO OF A BOZEMAN, MT, HOME PROVIDED BY NEW ENGLAND PHOTO

ON THE COVER: PHOTO OF A BOZEMAN, MT, HOME PROVIDED BY NEW ENGLAND PHOTO

LANDSCAPE MANAGEMENT (ISSN 0894-1254) is published monthly by Advanstar Communications, Inc., 131 W. First St., Duluth MN 55802-2065. Subscription rates: one year, $39; two years, $58 in the United States & possessions; $66 for one year, $99 for two years in Canada and Mexico; all other countries $130 for one year, $195 for two years. For airmail delivery, include an additional $70 per order annually. Single copies (prepaid only): $4 in the United States, $7 in Canada and Mexico; $12 all other countries. Back issues, if available: $8 in the U.S., $14 in Canada and Mexico; $24 all other countries. Add $5 per order for shipping and handling. Periodicals postage paid at Duluth, MN 55806 and additional mailing offices. POSTMASTER: Please send address changes to Landscape Management, P.O. Box 6198, Duluth, MN 55806. Canadian G.S.T. number: R-124213133. Publications Mail Agreement Number 841919. Printed in the U.S.A.

Copyright ©1999 Advanstar Communications, Inc. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including by photocopy, recording, or information storage and retrieval system, without permission in writing from the publisher. Authorization to photocopy items for internal or personal use, or the internal or personal use of specific clients, is granted by Advanstar Communications Inc., for libraries and other users registered with the Copyright Clearance Center, 222 Rosewood Dr., Danvers, MA 01923; phone: 978-750-8400; fax 978-750-4470; call for copying beyond that permitted by Sections 107 or 108 of the U.S. Copyright Law. For those not registered with the CCC, send permission request in writing to Permissions Dept., Advanstar Communications Inc., 7500 Old Oak Blvd., Cleveland, OH 44130 or fax to 440-891-2740.
Nested in their sheds at night, ordinary mowers dream of only one thing: growing up to be a Kubota F-60 Series. And it’s easy to see why.

The Kubota F-60 Series features our exclusive Auto Assist 4WD with Dual-Acting Overrunning clutch. It automatically transfers power to the rear wheels when the going gets tough. Or, you can manually engage 4WD on the go. Either way, it gives you unequalled traction and maneuverability while reducing the damage to your valuable turf.

The durable, independent hydraulic PTO clutch lets you engage and disengage PTO driven implements on the move. A real time-saver in tight situations.

Kubota’s advanced E-TVCS diesel engines are designed to deliver maximum power with minimum vibration and noise. Plus, these super-efficient powerplants go a long way in cutting fuel costs and emissions.

Available in 22, 25 and 30 horsepower 4WD models, the Kubota F-60 Series also comes in a 25 horsepower 2WD model.

So if you’re looking for a front-end mower that handles like a dream, see your authorized Kubota dealer today.

For more information please write to:

Kubota TRACTOR CORPORATION
PO. Box 2992-1M
Torrance, CA 90509-2992
1-888-4KUBOTA ext. 403

Financing available through Kubota Credit Corporation

©1998 Kubota Tractor Corporation
When professionals need superior results they know they can count on the #1 line of gas powered blowers...Echo. Every Echo power blower is designed to handle the toughest jobs from start to finish. Power blowers that are quiet, comfortable and deliver maximum performance when you need it most — every hard-working day. That's Echo Pro Performance!

Built by the team that knows exactly what professionals need: quality, durability and power.

For more information call 1-800-432-ECHO (3246).

Circle No. 105 on Reader Inquiry Card
Finally, the most comprehensive Green Industry information is at your fingertips 24 hours a day.

Isn't that a bright idea?)

Visit us on the World Wide Web at: www.landscapegroup.com

The Internet Home of the Green Industry.
A proud supporter of these green industry professional organizations:

**ALCA**
Associated Landscape Contractors of America
150 Elen Street, Suite 270, Herndon, VA 20170
(703) 736-9666; http://www.alca.org

**ANLA**
American Nursery & Landscape Association
1250 I St. NW, Suite 500, Washington, DC 20005
(202) 789-2900

**ITODA**
Independent Turf and Ornamental Distributors Association
1217 Wayburn
Grosse Pointe Park, MI 48230
(313) 331-7739

**The Irrigation Association**
8260 Willow Oaks Corporate Dr. Suite 120
Fairfax, VA 22031-4513
(703) 573-3551; http://www.irrigation.org

**National Arborist Association**
The Meeting Place Mall, P.O. Box 1094,
Amherst, NH 03031-1094
(603) 673-3311; http://www.natlarb.com

**Ohio Turfgrass Foundation**
1100-H Brandywine Blvd., PO Box 3388,
Zanesville, OH 43702-3388
(888) 683-3445

**The Outdoor Power Equipment Institute**
341 South Patrick St.
Old Town Alexandria, Va. 22314
(703) 549-7600; http://opei.mow.org

**PGMS**
Professional Grounds Management Society
120 Cockeysville Rd., Suite 104,
Hunt Valley, MD 21031
(410) 584-9754

**Professional Lawn Care Association of America**
1000 Johnson Ferry Rd., NE, Suite C-135,
Marietta, GA 30068-2112
(770) 977-5222; http://www.plcaaa.org

**Responsible Industry for a Sound Environment**
1156 15th St. NW, Suite 400,
Washington, DC 20005
(202) 872-3860; http://www.acpa.org/rise

**Sports Turf Managers Association**
1375 Rolling Hills Loop, Council Bluffs, IA 51503-8552
(712) 366-2669; (800) 323-3875;
http://www.aip.com/stma

**TOCA**
Turf and Ornamental Communicators Association
P.O. Box 156, New Prague, MN 56071
(612) 758-5811

---

**THE ULTIMATE WHEELBARROW**

Spreading mulch, compost and soil mixes
by hand is a costly, labor-intensive process.
The Express Blower will turn an
inefficient process into a profit center and
blow your competition away!

The Express Blower can be operated by one
person, with remote control, in any weather,
on any terrain. Spread any number of
organic materials for landscaping, lawn
restoration, erosion control and much more.

With our ALL NEW Injection System, the
Express Blower can inject seed, fertilizer or
other additives with only one application.

Get a jump on your competition. Call today
and find out how you can expand your possi-
bilities with an Express Blower!

Visit our web site at www.expres8blower.com

---

**A Better Trim**

Introducing the Farm King Triplex mower -
the gang mowing system with a new level of efficiency
in more ways than speed.

There's no better or faster way to trim a turf. There's no
machine that will last longer, require less maintenance
or do more with less horsepower.

Three models - 13', 16', and 19' cutting widths all for Cat. 1 hitches.

---

**FARM KING**
John Buhler Inc.
301 Mountain Street S. Morden, Manitoba, R6M 1X7
P.O. Box 1094, Amherst, NH 03031-1094
(603) 673-3311; http://www.natlarb.com

Call for the name of distributor nearest you
Circle 109
THE BEST WAY TO MANAGE YOUR TRUCKS IS TO GET THEM FROM A TRUCK COMPANY.

The reason you've never seen the GMC emblem on a car is very simple: we've specialized in trucks, and only trucks, for over 90 years. We've concentrated on commercial issues like power, payload, operating efficiency — all the important details that matter to people like you, who are running a business.

In Trucks, Like In Business, The Details Are Important.

At GMC, we try to make every little detail count on the bottom line. Our advanced Dex-Cool* coolant is designed to go 150,000 miles before a scheduled change.* Our Vortec engines offer impressive power — from the capable Vortec 4300 V6 to the mighty 290 hp Vortec 7400 V8.

These Vortec gas engines have a one-piece serpentine drive belt, platinum-tipped spark plugs and other long-life components that allow you to drive 100,000 miles before the first scheduled tune-up.* These may be details, but they mean your trucks can spend more time on the road, less time in the shop.

You Take Care Of Your Business, We'll Take Care Of Your Trucks.

We offer a full line of trucks for a wide range of applications. When you visit a GMC dealer, you'll find salespeople as specialized as our trucks who will help you with information, recommendations and ordering assistance. And you'll also find GM-trained technicians providing expert truck maintenance. For more information about GMC, see your GMC dealer, call 1-800-GMC-8782 or visit us at www.gmcforwork.com on the web.

You specialize in your business, we specialize in trucks.

* Maintenance needs vary with different uses and driving conditions. See owner's manual for details.

GMC

Do one thing. Do it well.
PUT US TO WORK

Just tell us what materials you’re looking for and we’ll send them ASAP.

- Light Duty Commercial
- Safari®/Savana® Commercial Vans
- C-Series (Medium Duty Conventional)
- T-Series (Medium Duty LCF)
- W-Series (Light Duty LCF)
- GMC® Personal-Use Trucks
- Pontiac® Cars

Name
Title
Company
Address
City
State
ZIP

Type of Business
Do you currently own a GMC? □ Yes □ No
If yes, selling dealer:
If no, preferred dealer:

Business Phone
Are you likely to lease or buy? □ Lease □ Buy □ Undecided
When? □ 0–3 months □ 7–9 months □ 1–2 years
□ 4–6 months □ 10–12 months □ 2+ years □ Undecided

If we can do anything else for you, just call 1-800-GMC-8782. www.gmcforwork.com

GMC®
It's easy to arrange financing and leasing right at your GMC dealership.
his industry was built by the contractors and grounds managers who saw opportunities for themselves, and today is no different. Whether you lead a large landscape organization or are a newcomer, you are part of a tradition that started humbly and succeeded because of hard work and good business sense. Until now, the best and the brightest in our industry could pretty much claim this was their story. Our best and brightest are comfortable both in suits and jeans. They know about biology, equipment, operations and keeping customers happy. They also know a lot about finance, profitability and productivity. And, they still get outside a lot.

But now we’re seeing a change that’s driven by our industry’s consolidation. Despite all the fuss about consolidation overtaking our industry, we’re told that only about 5% has been consolidated so far. Participants in a January seminar I just attended on mergers and acquisitions said there literally are “trillions” of dollars in the investment world looking for a good home in an industry like ours.

So now we’re sexy, just like others who are consolidating: real estate, construction and utility management, to name a few. At the conference, we met representatives of several new consolidation groups who will soon announce their debut into the green industry. And more will follow.

The big money coming into our industry comes in the pockets of a new breed of best and brightest. They’re very smart, very educated and very savvy investors, deal-makers and advisors. They routinely handle transactions involving millions of dollars. They know due diligence, stock swaps, tax minimization, business valuation and all other aspects of mergers like they know the back of their hands.

Forget the fact that our best and brightest have years of experience in the landscape business and the new ones don’t. Forget the fact that most of them rarely work outside. The new breed is smart enough to learn a lot about our operations and learn it quickly.

So how will this affect you? Will you learn about the consolidators as quickly as they’ve learned about you? Will you understand how these new consolidations will operate in your markets and how they’ll affect your firm? Will you have enough savvy to make the right decision when someone invites you to sell?

Some of the contractors at the meeting said they liked this new breed because they bring “professionalism” to our industry. I think they also bring a whole new set of challenges and opportunities to everyone — established firms and beginners alike. And I’d recommend you learn as much about them as you can. Next month, we’ll look more closely at consolidation and what it will mean to you. LM

Ruppert Moves On
Craig Ruppert, founder of Ruppert Landscape in Ashton, MD, has resigned his position as senior vice president of the TruGreen-ChemLawn Landscape Division, headquartered in Memphis. Chris Davitt, also formerly of Ruppert Landscape, has also left TruGreen-ChemLawn. Ruppert can be reached at Ruppert Nurseries, also in Ashton.

Another national player
HOUSTON — GrowScape LLC, based here, is the newest ‘national’ landscape company. This spring it will announce its seven founding companies, with estimated combined revenues of $75 million. GrowScape will integrate ‘vertically,’ offering installation, maintenance, foundation, perennial plant materials, turf, irrigation, architecture and design. The company hopes to be in top 25 U.S. metropolitan areas within four years.
Experience The Bobcat Advantage!

Ride smoother. Lift more. Reach farther. Carry faster. Dump higher. Bobcat extended-wheelbase skid-steer loaders give you all this — and pride of ownership, too. That’s The Bobcat Advantage!

The Bobcat brand’s smooth ride, rugged reliability, ease of operation, comfort, safety, dealer support, parts availability, service backup, choice of attachments and high resale add up to total value that can’t be matched.

Check out The Bobcat Advantage at your local dealer — or ask any Bobcat owner.

**Eldarica pine problems**

I have about 12 Eldarica pines and about three or four are having branches dying out from the center to the base of the tree. Each year a few more branches die, which doesn't appear normal. There are no indications of insects or other obvious disease.

The pines are growing in a location in the mountains about 4,000 feet high. The soil is sandy to silt. Trees are watered every two weeks during the hot, dry windy summer. I planted these pines as they thrive in heat, drought, wind and poor soil.

—CALIFORNIA

Dr. Len Burkhart, Davey's resident horticulturist and technical adviser in California, said that there is some confusion over the naming of Eldarica pine, both the common and the Latin names. Trees labeled Eldarica pine (Pinus eldarica) in a nursery may actually be Afghan pine (Pinus halepensis eldarica) or even mixed up with Brutian or Calabrian pine (Pinus brutia). Mondel pine also occurs in the nursery trade in the West and Southwest and is probably the true Afghan pine. Due to the confusion of these species in the nursery trade, the actual identity of your trees should be questioned.

In this situation, the importance of the specific species relates to ability of the trees to withstand cold. Calabrian pine can not tolerate temperatures below 0°F, while true Afghan pine can. Trees planted in conditions to which they are not adapted are more prone to stress and environmental conditions, which in turn can make them more susceptible to disease and pest problems as well as simple decline.

The problem could be as simple as cold injury or the trees could be stressed and subject to increased branch loss. Other possible problems for pines in your area include pine rust, pitch canker and other cankers, bark beetles and various needle diseases.

It would help if you had confirmation of the species of pine on your property but, for now, removal of the dead and dying branches is recommended. Take photographs of the trees from several angles, including the trunk (especially if you see excessive pitching, holes, etc.). You should contact your local county personnel with the photos and a branch sample (preferably dying, not completely dead) or send your sample to a diagnostic laboratory for further diagnosis.

**Dogwoods declining**

Some of the dogwoods in our area show various degrees of decline. The affected trees have smaller, lighter-colored leaves and they often develop fall color early and curl or shrivel in the summer. On some trees, there are slightly sunken areas at the soil line. We cut open the area and found that the bark is discolored. In some, the bark is gone and the wood is exposed. What causes this? What can be done to control?

—PENNSYLVANIA
You can spot the professionals by the work they do...

and the tools they use.

When you see LESCO Commercial-plus™ equipment on the job, you know a professional is at work. That's because the complete line of LESCO equipment is designed and built to meet the demanding requirements of landscape professionals. Rugged and reliable, this equipment minimizes maintenance costs and downtime. And it's engineered to reduce operator fatigue, so more gets done in a day.

You'll find everything you need at LESCO. A full line of mowers including walk-behind rotaries, outfront riders, a zero-turn series and small trim units. As well as the most complete line of spreaders in the industry...rotary, pendulum and drop styles.

And LESCO has sprayers ranging from the smallest hand-held variety to the versatile backpacks on up to 300-gallon tank units. There's also a renovator that de-thatches, slices and seeds in one operation and a series of aerators in both walk-behind and pull-behind models. And that's not all. LESCO also offers a complete line of hand-held power tools, blowers and truck vacs.

A great selection backed by incomparable service and convenience. No wonder LESCO Commercialplus equipment is the choice of professionals everywhere. Stop by your nearest LESCO Service Center® today and see the selection for yourself. Or call 800-321-5325.
Being a "tree person," I have always noticed trees — to the point of obsession at times (at least according to my friends). And I'm often amazed at what people will do to their trees in the name of... maintenance? ...art? ...goodness knows what?

But there are other things I notice as well, including hazardous trees, to the point where there are some places I won't park even my old beat-up pickup.

I also notice tree species — what is being planted and where. In street tree situations I have noticed that many communities seem to pick a few preferences and stick to them. In our part of the world, maples, ashes and honeylocusts are favorites, with callery pears and crabapples running close behind.

There are a couple of problems with planting monocultures or a narrow range of tree species. One is that if a specific pest or disease strikes a narrow species range, it can drive up the cost of maintenance of the trees, even threaten the survival of large numbers of them because the problem spreads so easily from tree to tree. Dutch elm disease is a perfect example since it virtually wiped out American elms in many communities.

The other concern that I have with planting a limited number of tree species, and it is not one which I have ever really heard discussed, is the continual expansion of our suburban areas (let's include developments including golf courses in this), particularly into formerly forested areas.

Very often, large tracts of land are essentially denuded of the variety of native trees and replanted with a limited and often unimaginative selection of species. This is not necessarily any one person's fault, since often these decisions are made by people who aren't all that familiar with trees. Dealing with a tree nursery with a limited selection of choices or trying to maximize the number of trees by buying what is most common and least expensive are not unreasonable decisions; just short-sighted.

There are a lot of different species out there which are valuable landscape trees. Granted, not all native species will be appropriate to all aspects of a newly developed area. But I think it's important to begin thinking about this. I am not trumpeting using only native species BUT — there are species out there that we are not seeing being planted nor are they being left to reproduce in the landscape.

In my area in particular I am thinking of the hickories. They tend to be scarce in nurseries (but they are out there) and, with their fruits, are certainly not appropriate for street situations. But there are places where they can and should be considered, including park areas, natural edges and other places where maintenance levels tend to be lower.

You could make quite a list of neglected but attractive species that we will miss if we continue to limit our choices in the landscape. Sourwood, black gum (or tupelo) or sassafras are some of my personal favorites. And all have their place.

For those of you who do some tree planting, and where you have some choice in species selection, consider what is native to your area and not being planted. The architectural characteristics, fall color, bark and leaf textures and the wildlife use of these species are all valuable additions to the landscape. If you aren't sure, ask your extension agent what they would suggest and start asking the nursery you deal with for the species you want. If they can't get it, there are other nurseries that can.

This does take some extra effort on your part, but not a lot and it is well worth it. Internet searches are also very useful, as long as the source of the planting stock is from a close hardiness zone and elevation.

We aren't going to fall off the edge of the earth if you don't, but if you at least try, I give you permission to call yourself "visionary." LM

In ONE year, this **GRASSHOPPER** will **CUT** and **TRIM** grass, mulch, side-**DISCHARGE** and **BAG** clippings, bull-**DOZE** dirt, **THROW** snow, **VACUUM** leaves, **SWEEP** walkways, and **AERATE** soil.

(For every thing there is a SEASON.)

And for every season, Grasshopper has just the right attachments.

- **Year-round versatility.** A full line of attachments lets your Grasshopper zero-radius maneuverability work for you all year long. The exclusive Combo Mulching™ Deck*, with full-flotation option, lets you mulch, discharge or bag with the same deck for superior results in varying conditions.

Other attachments include Quik-D-Tatch Vac® grass collection systems, angle dozer blades, snowthrowers, rotary brooms, dethatchers and AERA-vator™. Quik-D-Tatch® mounting system* permits removing and adding attachments in minutes without tools.

- **Easy to operate.** Even beginning operators get the feel of Grasshopper's dual-lever steering in no time. So natural, operators can mow long hours without tiring.

- **Built-in quality.** Grasshoppers are built to last, with robotic-welded steel construction and highest quality components.

*patent pending

**Call or write for the name of your nearest dealer and a "hands on" demonstration.**

First to Finish...Built to Last

The Grasshopper Company
One Grasshopper Trail • P.O. Box 637
Moundridge, KS 67107 U.S.A.
Phone: (316) 345-8621 • FAX: (316) 345-2301
Circle No. 112 on Reader Inquiry Card
FQPA opened industry's eyes in '98

COLUMBUS, OHIO — Widespread industry concern this past year over implementation of The Food Quality Protection Act of 1996 (FQPA) had some positive effects, said Anne R. Leslie, a former official of the U.S. Environmental Protection Agency (EPA).

This concern, expressed in letters and meetings with federal office-holders, focused on the EPA's methods for review of pesticide residues on foods, and whether these methods were fair and accurate, said Leslie, a speaker at the Ohio Turfgrass Conference here in December. The greatest fear by pesticide-using industries like agriculture and turf/ornamental care is that the FQPA will result in the loss of popular chemical control products.

The climax of this concern in 1998 was a memo from Vice President Al Gore to the EPA in April. The memo instructed the EPA to:

• ensure that its decisions are made based on the best available science.
• ease the transition to new pest management strategies for affected pesticide users.
• make the regulatory process transparent.
• consult with affected stakeholders.

Also, it led to the establishment of the Tolerance Reassessment Advisory Committee (TRAC) in 1998. TRAC consisted of representatives from growers, pesticide registrants, food processors, environmental groups and medical professionals.

Although uncertainty remains about FQPA's effects on the green industry, she said that the EPA is trying to make its decision making process more transparent.

While the FQPA attracted much of the attention of professional pesticide users, Leslie reported that the EPA nevertheless registered 27 new pesticides this past year. These included 14 "reduced risk" pesticides and 13 conventional chemicals. It also approved 12 biopesticides and 2 antimicrobials, said Leslie, who retired from the EPA this past summer and now consults on IPM and pesticide issues.

Playing the awards game

For 27 years, members of the Professional Grounds Management Society have celebrated the importance of top quality landscape and grounds management through a rigorous judging system, culminating in the Professional Grounds Maintenance Awards. Grand and honor awards are given for winners in a variety of categories — many of which our readers maintain: small residential sites, commercial properties, institutions, multifamily communities, public works and others.

To encourage industry participation in this award program and build a higher consumer awareness of the role of landscape and grounds management, Landscape Management has established a partnership with PGMS to become the exclusive sponsor for these awards.

As part of our sponsorship, Landscape Management and Athletic Turf Maintenance & Technology will promote the best our industry has to offer in our magazines, on our Website (www.landscapegroup.com) and to the business and consumer press.

Entry is not limited to PGMS members. In fact, it is encouraged throughout the industry. Those who win will survive multiple rounds of judging by experienced, nonpartisan practitioners.

The first of several award-winning landscapes is featured on page 66. Future issues of LM will include updated contest entry instructions, more award-winning landscapes, a guide on how to present your projects in the best possible light for judging and tips on how to get maximum marketing benefit from your efforts.

Updated entry guidelines will be available at www.landscapegroup.com or by contacting PGMS at 120 Cockeysville Road, Suite 104, Hunt Valley, MD 21030 or call 410/584-9754.

Visit www.landscapegroup.com to see our online LM Reports, with direct links to manufacturers and their products.
AgriBioTech takes cost cutting measures

Henderson, NV — AgriBioTech Inc. (ABT), late in 1998, shut down seven facilities in four states, a move that's expected to save the seed company $750,000 per year. The action led to the elimination of about 20 nonsales jobs in units in South Dakota, Ohio, Kentucky and Missouri.

"We expect better customer service, increased operational efficiencies and reduced cost, to the benefit of our shareholders," president and chief operating officer Kent Schulze said in a statement.

Also, on Dec. 23, 1998, the company said that it had completed the sale of the chemical and fertilizer division of Willamette Seed Co., with about $20 million in sales, to Wilbur-Ellis Co., San Francisco. ABT kept the seed division of Willamette Seed CO.

ABT announced that it had increased equity by about $18 million through an $11.2-million private placement and a $6.7-million voluntary warrant exercise. It has also received commitments for at least $25 million of long-term debt, which it expected to close before Christmas.

Repeat of hopper invasion in SW not likely in '99

A grasshopper isn't your everyday turf or landscape pest, but millions of them in a particular area can devastate plants, any plants. The summer of 1998 saw grasshopper populations rise so dramatically in some areas of the Southwest that they damaged turf and ornamentals.

"They'll eat anything green, killing grass, landscape plants, trees and shrubs," said Dr. Cliff Hoelscher, an extension specialist with Texas A&M University. "We've had 60 counties in Texas that have had an unbelievable problem." And Hoelscher wouldn't rule out similar problems in the Southwest this growing season, although conditions shouldn't be as favorable for infestations.

The El Niño, blamed for about every unusual weather occurrence last year, is getting the blame for the grasshoppers too — at least in part. Scientists theorize that the wet '98 spring in the Southwest in 1998 spurred plant growth and allowed the hungry hoppers to multiply.

"Grasshoppers are going to move around and find the greenest, most lush things," said Dr. John Jackman, an entomologist with the Texas Agricultural Ex- tension. "As they move off dry pastures to find something to eat, they are concentrated."

There are ways to combat more localized infestations. One is to try to exclude them from a property or plant material. Since grasshoppers like tall vegetation to hide in, mowing a barrier 20 feet wide around a property will reduce their numbers significantly. Also, a plastic, small-mesh product called Row Cover can be used to cover valuable plant material.

For the few grasshoppers that cause more annoyance to property owners than landscape damage, Hoelscher suggested that landscape managers can prepare a bait made from Sevin XLR and wheat bran bait. Sevin XLR is labeled for turf and ornamentals, and the label lays out the bait recipe. Hoelscher recommended that molasses be added to the bait to keep it from drying out too quickly during hot, dry weather.

"The bait needs to be placed in open areas," says Hoelscher. "You can't put it in the grass because the hoppers can't find it. If you have open areas in ornamental beds it works quite well there."

For a more info on grasshopper control, obtain the pamphlet Grasshopper Integrated Pest Management, free from the U.S. Animal Health and Plant Inspection Service (APHIS), 4700 River Road, Riverdale, MD 20737. Ask for technical publication 1809. LM

Milliken teams up with Emerald Isle

SPARTENBURG, SC— Milliken Chemical, headquartered here, announced in January that it is acquiring the products and brands of Emerald Isle, Ltd., Ann Arbor, MI. The acquisition includes a long-term agreement to codevelop new products for the turf and ornamental market.

"It's a good strategic fit," said Lawrence Kind of Milliken Chemical. "Milliken Chemical and Emerald Isle can combine worldwide distribution and excellent quality products for strong future growth."

Adding Bill Middleton, CEO of Emerald Isle: "We see this as an extraordinary opportunity to collaborate with really top-quality people."
For extended p

1-877-ON-THE-JOB

Get out your scissors and go to work. It's that easy with our On The Job program. It gives qualified commercial customers special APR reductions when financing through Chrysler Financial. We also offer TRAC, Capital, and Municipal Lease options that allow customers to tailor-make a deal based on individual needs. Plus, depending on the model, you can choose from a $300 cash allowance, a 100,000-mile/5-year Powertrain Care Plus™ service contract with Road Hazard Tire Coverage,* or select upfit package allowances.**

It's not just any truck you're financing, it's a Dodge. Our line of commercial trucks includes Dakota, Ram Pickup, Ram Chassis Cab, Ram Cargo Van, and Ram Passenger Wagon. And they all feature our Magnum® engines—giving you plenty of power to get the job done.
While power is important, having the right equipment is crucial. With help from your local Dodge dealer, you can select the right combination of upfit equipment to build a truck that's a cut above, too. Much like the way we help design the right finance plan. And this can make all the difference when you're on the job. To learn more about the program that's built around you, call toll-free 1-877-ON-THE-JOB or visit our Web site at www.4adodge.com

*Offers exclude 4-cylinder Dakota. Service contract option not available in AL, FL, MS, OK, or UT. No refund if canceled. Some vehicles ineligible. There is a $100 deductible for each covered repair visit. Tire coverage covers only complete or pro-rated replacement for original four tires, excluding spare. See plan copy and full details at dealer. **Upfit package allowances not available on Ram Passenger Wagons, Ram Conversion Vans, or 4-cyl. Dakotas. Upfitters are solely responsible for after-market modifications and equipment.
In the world of information overload, it's hard to make an impression. Here are some of the products that caught our attention.

By RON HALL and NANCY STAIRS

We test-drove new tractors and mowers at the OPEI Expo '98 in Louisville. We cruised the show floor at the GIE in Nashville, and talked to dozens of suppliers at the outdoor demo. We wore out the carpet at the Ohio Turfgrass Show in Columbus, Ohio. We were on the prowl for new products that will catch your eye and help you be more productive this season.

A couple of trends jumped out and smacked us right between the eyes (don't get any ideas), including the incredible popularity, and growing number, of zero-radius-turn mowers, and the proliferation of the multipurpose, mini-workhorse machines like the Dingo. It was the first introduced into the United States and is now a part of the Toro SiteWorks System™.

MOWERS THAT BITE AND GROWL

Exmark's Rick Curlett, on the show floor at GIE, showed us the new Lazer Z 72-in. mower, and explained the advantages of the new liquid-cooled 22-hp Kawasaki engine.

Encore's new front-cut Prowler features 52- or 61-in. decks, while Ferris Industries touts the new IS™ independent suspension on its ProCut Z mowers.

Steiner's new zero-turn-radius mower is the ZTM325 with a 61-in. cutting deck.

Gravely points to the new maintenance-free Gravely XL Spindles and tungsten carbide-coated blades on its 260Z unit, and Bob-Cat's ZT 100 can finish off 20.4 acres in an eight-hour day.

Scag's new Turf Tiger, with the black stripes across its fenders, looked almost menacing on the GIE show floor, but the Tiger salesman assured us that it's "the smoothest running cat" on turfgrass. And how about these for names—the Great Dane Chariot and its compact brother, the
Chariot Jr.? Both bright yellow zero-radius-turn riders come with paw prints on their fenders. Buying a new mower in 1999 could be almost as exciting as buying a new car.

**FUN, FLEXIBLE AND AFFORDABLE**

Some contractors are going to smaller equipment to get jobs done. Smaller equipment is easier to store, easier to transport to job sites and, with an explosion of attachments, some of these units perform an incredible number of functions.

A number of mini skid-steer loaders meet the needs for carrying out work in smaller spaces, which, considering that lots are getting smaller and condominiums can often have fairly limited access, is valuable.

**Kanga Loaders**

The latest model from Kanga Loaders, Bixby, OK, has improved lift capacity to 550 lbs. with overload protection; wider frame for maintenance accessibility; steel hydraulic lines; increased hydraulic reservoir capacity and fuel capacity; and 20-hp engines, either gas or diesel. Attachments include: carryall-leveller, trencher, post hole and tree-planting augers, 4-in-1 bucket, broom and two new additions (an angle backfill blade and a stump grinder).

Hans Schurmann of Anthos Landscape Co., has had the Kanga Loader for about two months and is impressed by its versatility. “Its smallness is actually one of the advantages. Many of the soul-destroying jobs — like back-breaking digging — have suddenly disappeared and work has become more fun and less tiring.”

For more information call 918/629-7230, fax 918/461-0996, on the web at www.kanga-loader.com

Circle No. 274

**Ramrod Taskmaster**

Ramrod, Minot, ND, promises a mini-skid for any task, with its Taskmaster series. It offers over 20 attachment choices.

Tina Phillips of Landscape Connections, Harrison, OH, says that their Ramrod Taskmaster replaced a worker. “He was going back to college and instead of hiring somebody, we bought a Ramrod,” she said. “We can unload the truck with the Ramrod and carry the material to a specific spot in the yard instead of using a wheelbarrow.”

Operating capacity ranges from 550 lbs. to 900 lbs., and most models are available in either gas or diesel. The 550 T-G, when equipped with 4-inch tires, is only 31 inches wide, which allows it to work in very cramped situations. The more powerful 900s are equipped with a dual hydraulic pump, which is ideal for high-output, multiuse attachments, but are still only 36 to 42 inches wide. A stabilizer kit is newly available as an option for the backhoe, as is a dozer blade which can be attached to the center of the backhoe.

For more information call 800/667-1581, email sales@ramrodequip.com, on the web at www.ramrodequip.com or Circle No. 275

**Toro**

Toro, Bloomington, MN, has the Site-Work Systems products, a line of rugged equipment, including the Dingo® compact utility loader and over 35 attachments. The 42-inch width can be reduced to a mere 33-inches when narrow tires are used and, with four-wheel skid steering, the Dingo can spin in its own radius.

It has been an exceptional investment for Paul Ocheltree at British Landscapes, Roseville, MN, who said their Dingo "reduced labor costs considerably and it reduced a lot of hand labor. It's allowed us to do certain projects that I wouldn't have tackled in the past."

Weighing in at 1,600 lbs. makes it gentle on established turf. And, one person can pull the Dingo up to a trailer, install a Site-Work Systems attachment in less than 60 seconds and be back to work. The Dingo features a two-pump hydraulic system and all the attachments fit on a specially designed trailer for easy transport.

**MORE, MORE, MORE**

Some of the other products we noticed seem to be ideas whose time has come, or cont. on page 26
CALLBACK

THE GAME THAT MEASURES SUCCESS BY THE YARD.

CALLBACK

START

EMPLOYEE CALLS IN SICK, LOSE A TURN.

CALLBACK

STORMS, GO BACK 2 YARDS.

CALLBACK

GRUBS! LOSE YOUR TURN.
The best way to move your business forward is to make sure you don’t go back.

The rules are simple. Keep your customers happy and you keep moving forward. Otherwise, you go directly to a callback. And the more you go back, the harder it is to get ahead. But one application of MERIT® Insecticide is all it takes to control grubs and callbacks. And fewer callbacks mean more time, money and labor you can use to move your business forward. Which puts you ahead of the game. For more information, contact Bayer Corporation, Garden & Professional Care, Box 4913, Kansas City, MO 64120. (800) 842-8020. www.protect-your-turf.com

You didn’t use Merit.
CALLBACK
Go back 3 yards.

Always read and follow label directions.
© 1998 Bayer Corporation. Printed in U.S.A. 99519A0178
New turf varieties keep sprouting

Turfgrass breeders and turfgrass seed marketers aren’t slowing down. New varieties continue to enter the marketplace. Most new varieties have these characteristics in common: darker green color, finer leaf blade texture and better disease and insect resistance.

The Roberts Seed Company, Tangent, OR, introduces Racer, developed at the Pickseed/Roberts Research Station. Roberts claims it offers excellent disease resistance and showed superior summer performance and persistence in the Middle Atlantic states and in the transition zone. It will be available for use in Roberts’ blends, and in mixes with Kentucky bluegrasses.

Pandora perennial ryegrass from Western Productions, Woodburn, OR, is a fast establisher. It has shown “outstanding” overseeding qualities in the transition zone, Western claims, although it also performs well in a variety of climates.

Jacklin’s new perennial ryegrass is Top-Gun, described as a high-density turf with a medium-dark green color and medium-fine texture. Jacklin also offers Arabia turf-type tall fescue, which is endophyte enhanced and features top-net blotch resistance. It has a dark green color and can be planted in full sun or moderate shade.

Medalist America says its Bluemoon Kentucky bluegrass is the darkest of any Kentucky bluegrass with a rich green leaf color. It features a fairway performance down to one-half inch mowing. On the bermudagrass front, interest is building for TifSport, a new hybrid bermudagrass that’s more cold tolerant than older hybrid varieties and more likely to resist mole cricket damage. A unique growers cooperative has been formed to produce and market the grass that was developed by Dr. Wayne Hanna’s program in Georgia.

cont. from page 23

in some cases, a new take on a good old standby. We didn’t have room for everything, unfortunately, but that is why we have a monthly Products Review section in Landscape Management.

Don’t move flowers, McStack them

The McStack attracted a lot of attention at the GIE Show in Nashville this past fall. The McStack is a system of racks that fit on the back of a truck. The racks can be loaded with plants and stacked. Then the entire racks, or “McStacks” as they are called, can be lifted off at once with a fork-lift or a loader with forks, pallet jack or McStack dolly. The system was developed a couple of years ago as an alternative to loading and unloading nursery stock one plant at a time. Imagine how much time you could save at a big commercial flower job. Recently Bill Gerhardt, operator of Greenscape, Columbus, OH, has adapted the McStack for even more landscape uses.
The porous pavement system has additional benefits: more pleasing aesthetically than pavement or cement, as well as slowing runoff and allowing rain to percolate into the ground. The Geoblock system creates a flexible structural bridge within the topsoil layer, promoting turfgrass growth and protecting it from vehicular and pedestrian traffic. It provides the load support needed and also increases green space.

For more information call Presto Products Co., Appleton, WI, 800/548-3424, or try the web at www.prestogo.com. Circle No.277

For those hard-to-reach spots

The HM19S2 can get into places that other mowers cannot. The Hover-Mower™ won’t take the place of riders and walk-behinds, but this unit from Eastman Industries, Portland, ME, provides an option for those hard-to-reach places, including steep slopes and banks. The deck design virtually eliminates scalping and the constant cushion of air glides over the ground allows operators to mow in any direction at any time.

The aluminum cutting disc and three Zytel composite metal-edged blades cut a 16-inch swath with the HM16R2 and 19 inches with the HM19S2, and cutting...
height is adjustable from 1 to 3 inches. In addition, a unique air-mulching system cuts and recirculates the grass and continues the mulching process, for a clean well-mulched lawn.

The HM16R2 has a Robin 2-hp, 2-stroke engine, a 12-inch impeller and weighs 19 lbs., while the HM19S2 has a Suzuki 3.8-hp, 2-stroke engine, a 15-inch impeller and weighs 37 lbs. For more information contact Eastman at 800/760-1680, fax 815/363-0933 or Circle No. 278

Stihl Power Scythe

The new FH 75 Power Scythe from Stihl, Virginia Beach, VA, trims shrubs, grass and weeds in close proximity to cars, windows or people. It uses a “hedge-trimming” concept, and shrubs, weeds and grass simply “lay down” after being cut, as opposed to being scattered by a traditional string trimmer.

A unique gearbox protects the FH 75 from concrete sidewalks and roadways and the blade tip is protected. In addition, the unit will articulate to provide versatility in cutting angles and application. It also features the 4137 family engine with interchangeable parts and is equipped with the Easy Start system consisting of the Elastostart shock absorbing handle and a fuel prime bulb.

For more information call 800/GO-STIHLL, visit www.stihlusa.com or Circle No. 279

Hide more than your key under these

“...It’s easier than trying to move a big (real) rock and if you change your mind about the location you can move it somewhere else,” says Jay Janosz, J&L Materials, Thousand Oaks, CA. He’s talking about Mock Rocks, artificial landscaping rocks made by Dekorra Products LLC, Poynette, WI.

These rocks are functional as well as decorative. Mock Rocks have a hollow cavity inside to cover well/septic vent pipes and other unattractive items in the landscape. The Thermostone material looks like natural rock, and is impact and abrasion resistant. Mock Rocks weigh only 8 pounds and come in two styles and three colors: fieldstone, riverbed and quartzite.

The company is planning on broadening the product line by creating rocks suitable for unobtrusive lightscaping applications. For more information call 888/635-8585 or visit the web at www.dekorraproducts.com or Circle No. 280

Monster mulch mover

The Mulch Mule is the ultimate mulch-moving machine from Green Industry Innovators, Louisville, OH. Not only does this mean no more forking or shovelling to unload material, but the 15-yard capacity Mulch Mule can be used to haul leaves, snow and other landscape debris or materials. It can be pulled with a 3/4-ton pickup and has a dependable 11-hp Honda-powered electric start engine with charging system. All components are hydraulically operated. Material is moved by a steel-chain system and can be unloaded into a wheelbarrow/bucket out-front chute or out the back swing gate.

Todd Pugh of Green Industry Innovators points out, "It has a lot of practical engineering on it. The features on the device have been formulated directly by landscape managers in the field. It is not an engineer behind a desk who’s designing this."

For more information call 330/875-0769. Circle No. 281

All you expect from Cat ... only smaller

One of our editors traveled to North Carolina this winter to learn more about the new Cat® Skid Steer Loader with a broad variety of work tools for nearly every application. She was impressed.

Features include a coupler system for quick secure work tool changes that is also compatible with work tools from other manufacturers; ease of accessibility and excellent visibility due to twin-tilt cylinders; grab irons and skid-resistant steps; ergonomic design for low effort controls using a joystick; both hand and foot throttles for additional engine power; and easy access for maintenance needs.

Six models will be available in 1999: the 216 and 226 with 1,350 and 1,500 rated operating capacity and 49 and 54 hp, respectively; the 228 and 248 High Flow models with 1,500 and 2,000 rated operating capacity and 54 and 74 hp, respectively; and the 236 and 246 with 1,750 and 2,000 rated operating capacity and 59 and 74 hp, respectively.

For more information contact your local Caterpillar dealer or Cat Rental Store or Circle No. 282

---

THE POWER SCYTHE™

MOCK ROCKS

CAT SKID STEER LOADER

MOW FOR MORE THAN A PERSONAL GUARDIAN

It's easier than trying to move a big (real) rock and if you change your mind about the location you can move it somewhere else," says Jay Janosz, J&L Materials, Thousand Oaks, CA. He's talking about Mock Rocks, artificial landscaping rocks made by Dekorra Products LLC, Poynette, WI.

These rocks are functional as well as decorative. Mock Rocks have a hollow cavity inside to cover well/septic vent pipes and other unattractive items in the landscape. The Thermostone™ material looks like natural rock, and is impact and abrasion resistant. Mock Rocks weigh only 8 pounds and come in two styles and three colors: fieldstone, riverbed and quartzite.

The company is planning on broadening the product line by creating rocks suitable for unobtrusive lightscaping applications. For more information call 888/635-8585 or visit the web at www.dekorraproducts.com or Circle No. 280

Monster mulch mover

The Mulch Mule is the ultimate mulch-moving machine from Green Industry Innovators, Louisville, OH. Not only does this mean no more forking or shovelling to unload material, but the 15-yard capacity Mulch Mule can be used to haul leaves, snow and other landscape debris or materials. It can be pulled with a 3/4-ton pickup and has a dependable 11-hp Honda-powered electric start engine with charging system. All components are hydraulically operated. Material is moved by a steel-chain system and can be unloaded into a wheelbarrow/bucket out-front chute or out the back swing gate.

Todd Pugh of Green Industry Innovators points out, "It has a lot of practical engineering on it. The features on the device have been formulated directly by landscape managers in the field. It is not an engineer behind a desk who's designing this."

For more information call 330/875-0769. Circle No. 281

All you expect from Cat ... only smaller

One of our editors traveled to North Carolina this winter to learn more about the new Cat® Skid Steer Loader with a broad variety of work tools for nearly every application. She was impressed.

Features include a coupler system for quick secure work tool changes that is also compatible with work tools from other manufacturers; ease of accessibility and excellent visibility due to twin-tilt cylinders; grab irons and skid-resistant steps; ergonomic design for low effort controls using a joystick; both hand and foot throttles for additional engine power; and easy access for maintenance needs.

Six models will be available in 1999: the 216 and 226 with 1,350 and 1,500 rated operating capacity and 49 and 54 hp, respectively; the 228 and 248 High Flow models with 1,500 and 2,000 rated operating capacity and 54 and 74 hp, respectively; and the 236 and 246 with 1,750 and 2,000 rated operating capacity and 59 and 74 hp, respectively.

For more information contact your local Caterpillar dealer or Cat Rental Store or Circle No. 282

---
After eleven years in business, Arlan and Brenda King and their sons, Jared and Jordan, reflect on the progress of their company, Paradise Environments Inc. in Sun City, Arizona:

“Our company began in 1988 with a handful of small residential accounts we purchased from another contractor. We enjoyed slow but steady growth. Mowing with our 21-inch walk-behind was, by far, the most time and energy consuming chore. Many Walker Mowers were used in our area, but I felt we didn’t have large enough accounts to justify the cost. As we grew, I realized how much time and energy a Walker could save us and increase our profits. We purchased a used Walker in ’94 and I was very pleasantly surprised to see how well the Walker performed in small, confined areas. I soon realized the Walker can be used virtually anywhere it can turn around. The Walker has been the finest, most profitable investment we’ve made in our business. We can’t imagine operating without it.”—Arlan King

Whether your business is large or small, we invite you to join the growing Walker Mower family.

For your Free video, call 1-800-828-8130, Dept. 027-5. ($3.95 shipping charge, Visa/MC accepted.) Or send check or money order for $3.95 payable to: Video Fulfillment Services, 027-5, P.O. Box 385070, Minneapolis, MN 55438. Allow 2-4 weeks delivery.
SUCCESSFUL SEEDING

Units to plant the seeds of success

By CURT HARLER, Contributing Editor

Whether you’re in the market for a simple push-behind seeding unit, a tractor-mounted machine, or you’re looking for a hydro-seeder, the latest crop of seeders is blooming with units designed for every application.

Among the key statistics to check is the capacity of the hopper — the more seed the unit will carry, the fewer stops the worker has to make. The exception to this rule is push-behind units, where operator fatigue can become a factor if the machine becomes too heavy to maneuver handily. A good standard of reference when buying a seeder is the number of square feet or acres covered per hour.

It is possible to get two-for-one deals from a number of firms. Combination machines provide an opportunity to get more useful days out of one equipment purchase. Designed to do a couple of different jobs, these units either perform multiple functions on a single pass, or they can serve as backups to other single-function machines.

AGRI-FAB
217/728-8388
www.agri-fab.com

A 175-pound, rustproof poly hopper is available on the 45-0298 push drop seeder from Agri-Fab, Sullivan, IL. This push spreader will cover 40,000 sq. ft. in one trip. It can be equipped with marker wheels to assure accurate drop in difficult conditions. Several other push-behind and tow-mount seeders are also available.

Circle No. 250

BEFCO
800/334-6617
www.befco.com

The Green-Rite one pass aerator/overseeder from Befco, Rocky Mount, NC, comes in a 58-inch working width for use with tractors from 25 to 45 hp. In a single pass, it aerates, seeds, agitates seed to ground and compacts the seed. It has a single 7.5 cubic foot seed hopper and precise seed cups to meter seed. Optional front gauge roller kit is available.

Circle No. 251

BLUEBIRD INTERNATIONAL
800/808-BIRD
www.bluebirdintl.com

The new HS-15 SeedScaper from Bluebird, Englewood, CO, allows a single
The pull-behind aerator/spreader combo from John Deere, NC, can do two jobs at once. It perforates the soil while the calibrated drop-spreader follows with seed. Lime or fertilizer can also be dropped. Unit is 40 inches wide with up to 2-inch penetration. Unit has 132 steel tine tips on 8-inch diameter tine stars. Adjustable flow control and direct drive for consistent performance make this the right tool for smaller jobs or use with a lawn tractor. Circle No. 258

FINN CORPORATION
800/543-7166
www.finncorp.com

The T30 Hydro Seeder from Finn, Fairfield, OH, is designed as an entry-level machine for establishing new lawns and turf. It has a 300-gallon capacity and applies mulch up to 70 feet from the hose end, covering 3,200 sq. ft. in as little as 8 minutes.

It offers simple controls for easy one-man operation, hydraulic reversible mechanical agitator for fast thorough mixing, and a unique pump to handle heavy hydro-mulching slurries. Circle No. 256

GANDY COMPANY
800/443-2476
www.gandy.net

Combination dethatcher/over-seeder from Gandy, Owatonna, MN, has a rugged 7-gauge steel frame and a 42-inch, covered steel hopper that holds 3.5 cubic feet (or 100-125 lbs. of seed). This 48-inch wide unit drops seed on 2-inch centers through 24 outlets. It requires a 540-rpm tractor with slip clutch for tractors 18-hp and up. Easily accessible tumbuckle adjusts planting depth. Optional shoe assembly puts seed right in the slit for improved seed-to-soil contact. Trailing 3-section gang roller and brush assembly also available. Circle No. 257

JACOBSEN
800/727-JAKE
www.jacobsen.textron.com

The Aero King 1321 Vertical-cutter Seeder from Jacobsen, Racine, WI holds over a bushel of seed, allowing a seeding rate of 23,000 sq. ft. per hour. It has an extra-wide 21-inch seeding width and operates at a speed of 2.5 mph. Seed outlets are 1.5 inches apart, giving good one-pass coverage. Regardless of the unit’s ground speed, a uniform seed rate is maintained. Unit has a 13-HP Honda engine, overhead-valve design and 6:1 gear reduction. Front-mounted vertical blades allow verticuting and seeding one time. Circle No. 258

REINCO
800/526-7687
www.reinco.com

A full line of HydroGrassers is available from Reinco, Plainfield, NJ. Ranging from the HG-5H for smaller seeding jobs to the giant HG-30GX which has up to 6-acre capacity, these units can be truck or skid mounted. The mid-sized HG-10GX has a 35-hp Ford gas engine or a 33.5-hp Kubota diesel. It has a standard 130-ft. discharge range, or 400 feet with hose. Circle No. 262

SPYKER
800/972-6130

Spyker of North Manchester, IN, has two new broadcast mulch spreaders. Model 296 is a 100-lb. walk-behind and the 297 is a 200-lb. pull-behind. With an eight-foot swath of material and a pattern for accurate application, they broadcast seed and fertilizer, as well as the new pelleted products on the market. These models also include Spyker's patented Accuway adjustment, to adjust the spread pattern from left to right on the fly to ensure a dead center spread. Circle No. 263

TORO
612/888-8801
www.toro.com

The 205 Seeder from Toro, Bloomington, MN, allows seeding of a full 18-inches width, dropping seed at 2-inch intervals. The Delta Reel blades open a soil slit to receive the seed. A flap on back of the machine covers the seed with a thin layer of soil for better germination. The 205 is powered by a 5-hp Briggs & Stratton engine. For safety, it has a handle-mounted automatic safety clutch control. Circle No. 264

Visit www.landscapegroup.com to see our online LM Reports, with direct links to manufacturers and their products.
If you really want to keep something

It takes two fierce herbicides acting side by side to keep crabgrass, goosegrass, spurge, oxalis and other weeds from breaking into your customers' property. Team* Pro preemergence herbicide combines Balan* and Treflan* herbicides into the most consistent, fast-acting, long-lasting crabgrass preventer available. Team Pro protects lawns better than pendimethalin without severe staining of spreaders, shoes or landscaping.
out of a yard, unleash the Power of Two.

And Team Pro won't harm established ornamentals, turfgrass or your reputation for a good value. For information on fertilizers formulated with Team Pro, talk to your supplier. Or call us at 1-800-255-3726 or visit our web site, www.dowagro.com. Then stand back, and unleash the Power of Two. Always read and follow label directions.
Build your fertility program on the basis of soil and tissue tests, and give your turfgrass the right amount of nutrients to allow it to perform as you would like.

By WAYNE KUS sow, Ph. D.

A turfgrass plant does not act like a sponge. The roots of grass plants do not take up soil nutrients in solution the same way that a sponge absorbs water. A generation ago, many agronomists thought this was so, but they were mistaken. We've learned that the plant's processes are much more complicated and precise than that. This is significant as we build our turfgrass nutrition programs.

One of our goals as landscape managers is to provide the turfgrass in our care with enough nutrients to achieve the results that we desire, and no more. These results, among others, may include greener color, a denser stand to crowd out weeds or faster recovery from traffic injury in the case of turf for sports. Their order of importance may be different, of course, depending upon the types of grass that we manage and the uses to which they are put.

For instance, our fertility program would be different for the turfgrass of a busy youth soccer field than for a corporate office park. The soccer field, subject to more traffic and stress, is likely to require more nutrition — indeed, a much different total management program — than the office park where the goal is primarily to provide curb appeal, as in a home lawn. Likewise, a program for a warm-season turf would be different than a program for a cool-season turf.

Whether we're developing a fertility program for athletic turf or a home lawn, or for warm- or cool-season turf, we don't want to use any more nutrients than we need for the results we desire. That would be a waste of material and labor. That's why, we must understand the basics of how a turfgrass plant selects the nutrients that it needs. And, remember, it doesn't withdraw them from the soil solution as in the model of a sponge.

In fact, research has shown that a turfgrass plant tightly controls what it takes up,
The plant will "shut off" the roots or "turn them on" when it needs nutrients. The shoot of the plant communicates with the roots through the use of hormones, nutrient ion gradients and other plant processes. The shoot, in effect, tells the roots, "I need more potassium," or "I don't need more potassium." The root responds accordingly.

**Who's in charge?**

What controls this process? Plant demand controls it.

And what causes plant demand? Shoot growth is primarily responsible for plant demand.

So how can we affect shoot growth? Primarily, we stimulate shoot growth with nitrogen (N).

It has long been shown that as we increase the N rate we increase, in linear fashion, turf shoot growth. We can measure this by comparing clipping weights. Turf growth will peak and level off at a rate of about 12 to 15 lbs. of N/1,000 sq. ft. annually. But, turfgrass is a unique "crop." Unlike most agricultural crops, we're not seeking maximum biomass. We're managing it for aesthetics such as color and density and, in the case of athletic fields, for durability and playability. Therefore, the amount of N we apply to turfgrass is substantially less than what we would apply to encourage peak growth.

**Know your nutrients**

Nitrogen is one of the three major nutrients responsible for plant growth and health. The others are phosphorus (P) and potassium (K). There is a tight relationship between the amount of nitrogen, phosphorus and potassium that a turfgrass plant will use.

The challenge for managers is to find the right combination of nutrients to satisfy the demands of the plants under their care. This is not as simple as picking up a bag of product and applying it, even though there is essentially a constant ratio of nitrogen, phosphorus and potassium (N-P\textsubscript{2}O\textsubscript{5}-K\textsubscript{2}O) in turf clippings, a ratio of 4-1-3.5.

Does that mean you should always use a fertilizer with nutrients in those proportions? Of course not. Soil samples may indicate that the soil of the turf we are managing already contains sufficient phosphorus and potassium to meet the demands of the turfgrass. We can only know this by taking soil samples.

**Playing with the numbers**

If soil tests indicate that P and K levels are low, we should use a fertilizer with enough of each element to correct the deficiency to meet the plants' demands. If they are already sufficient in the soil we want to maintain these levels, and if they are high, there is no reason to add additional amounts since the plant won't use them.

We can, however, increase the turf's "demand" to use greater amounts of P or K, for instance when we're establishing turf or we're seeking rapid recovery of athletic turf, by stimulating shoot growth with additional nitrogen.

Anytime we change the N rate, we're going to alter the demand for P and K. We demonstrated this on turf plots to which we had applied 2, 4, and 8 lbs. N/1,000 sq. ft. respectively. We applied no additional phosphate or potash to the plots. After three years we recorded that the plots that had received 2 lbs. of N showed a 6 ppm reduction in soil phosphorus and a 25 ppm reduction in potassium, the plots receiving 4 lbs. N showed reductions of 10 ppm P and 37 ppm K, and the plots receiving 8 lbs. N recorded a 19 ppm drop in P and a 57 ppm drop in K.

Anytime we change the nitrogen rate, we are going to alter the demand for phosphorus and potassium.

**Wayne Kussow, Ph.D. is with the Dept. of Soil Science at the University of Wisconsin**

---

**NITROGEN CREATES DEMAND FOR PHOSPHORUS AND POTASSIUM**

<table>
<thead>
<tr>
<th>Clipping nutrients</th>
<th>Annual N lb./M</th>
<th>%N</th>
<th>%P</th>
<th>%K</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>3.8</td>
<td>0.42</td>
<td>2.4</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>4.3</td>
<td>0.44</td>
<td>2.5</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>5.2</td>
<td>0.48</td>
<td>2.9</td>
<td></td>
</tr>
</tbody>
</table>

**THE FUTILITY OF APPLYING P AND K WHEN THERE IS NO DEMAND**

<table>
<thead>
<tr>
<th>Clipping nutrients</th>
<th>N-P-K Applied lb/M</th>
<th>%N</th>
<th>%P</th>
<th>%K</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-0-0</td>
<td>4.3</td>
<td>0.44</td>
<td>2.5</td>
<td></td>
</tr>
<tr>
<td>4-1-0</td>
<td>4.3</td>
<td>0.44</td>
<td>2.6</td>
<td></td>
</tr>
<tr>
<td>4-0-3</td>
<td>4.3</td>
<td>0.44</td>
<td>2.6</td>
<td></td>
</tr>
<tr>
<td>4-1-3</td>
<td>4.3</td>
<td>0.44</td>
<td>2.6</td>
<td></td>
</tr>
</tbody>
</table>

**cont. on page 38**
You Can’t Clean Up This Season If You Spend The Season Cleaning Up.
Dimension® turf herbicide. It's the best value because of what it won't cost you.

Like about thirty-five bucks to shampoo a fluffy white pooch. Or eighty-five to clean a white Berber carpet. What's it cost to repaint a white picket fence?

Scrub a concrete walk or driveway? You'll learn first-hand, if your turf herbicide stains those items. And that messy yellow stuff could end up costing you even more: If the herbicide you use doesn't provide the best control of crabgrass and other weeds, you could be getting some unexpected calls from unhappy customers.

Dimension is labeled for use on ornamentals, so you can use it on the lawn and landscape. It doesn't stain, so you can apply it with confidence right up to concrete walks and driveways. Your customers won't be seeing any more of those little fringes of crabgrass along the edges of their turf. All they'll see is healthy, happy lawn...and all you'll see is happy customers and a healthy bottom line.

Clean up this season. Call 1-800-987-0467 or visit us at www.dimensionpro.com for complete information.
Set your company apart

Differentiate yourself from your competition by targeting consumers interested in environmentally friendly fertilization methods

By CHUCK PAULSON AND MIKE ARCHER

It's relatively easy today to build turf programs capable of approaching perfection, at least for a while. But, even with customers' desire for high quality turf, there's also a desire for methods that are considered "environmentally friendly."

Many lawn care businesses are looking for ways to differentiate themselves from their competition in today's fast-paced world of new product development, and they are watching for opportunities in the area of turf management. One option is to focus on the changes that follow in the wake of a maturing market and to take advantage of emerging opportunities for improving the quality of turf and the bottom line.

A new approach?

For many companies, an organically-based program is considered simply not feasible, and even a solid Integrated Pest Management (IPM) program has often been considered to be difficult to implement and sell. It can be difficult to explain the benefits to the clients and justify higher prices, compared to less expensive competitors.

Phil Catron of NaturaLawn of America, however, says that IPM is more than a program; it's philosophy and way of doing business. "It has to do with your decision-making process on whether you are treating the symptom or trying to solve the problem," he says, "and how you approach solving the problem through prevention, monitoring and control."

Continued progress in the area of IPM means new developments provide a proven range of effective active ingredients that reduce the impact they have on the environment. By bringing valid attention to a genuine desire to use safer products in reduced amounts, lawn care professionals can reduce the active ingredient load in the environment. This approach can be instrumental in gaining favor with the customer.

Fertilizer options

The basis of the lawn care programs of NaturaLawn of America are their organic-based fertilizers, blended by Spring Valley Turf Products. This is a good place to start in differentiating from the competition. While NaturaLawn of America has its own cont. on page 40
Phocus on Phosphorus

As a landscape or grounds manager, shouldn't you know the basics about the products you use? Take phosphorus, for instance. See how well you do on this quiz, based on an article written by Dr. Peter Landschoot, Penn State University.

1. Phosphorus is extremely important in:
   a. encouraging plant color
   b. rooting, cell division and synthesis of chemical compounds
   c. enhancing water uptake in the plant

2. Phosphorus cannot move from one portion of a plant to another
   a. true
   b. false

3. Turf that is deficient in phosphorus turns purple or red
   a. true
   b. false

4. Too much phosphorus may affect iron and zinc uptake
   a. true
   b. false

5. Phosphorus should be incorporated into the soil prior to seeding or sodding
   a. true
   b. false

6. Phosphorus can enter surface waters via erosion and runoff.
   a. true
   b. false

Answers:

1. B. Phosphorus (P) is extremely important in seedling development, rooting, cell division and the synthesis of various chemical compounds used by plants.

2. False. Phosphorus is available to turfgrasses as \( \text{H}_2\text{PO}_4 \) and \( \text{HPO}_4 \) and is mobile in plants — meaning that it can move from one portion of the plant to another.

3. True. Deficiencies of this nutrient in turf are usually expressed as purple- or red-colored leaf blades and as reduced growth and tillering.

4. True. Excessive P concentrations in plant tissue (greater than 1.0% on a dry weight basis) may have adverse effects on iron and zinc uptake and metabolism.

5. True. Phosphorus is largely immobile in soils — meaning that it takes a long time to move from the turf surface into the root zone. It may take months to move just a few inches in soil.

6. True. Although P is not readily leached from soils into ground water, recent surveys have shown that it can enter surface waters via erosion and runoff. Avoid applying P fertilizer where runoff is likely — such as on frozen soils and paved surfaces.

Phocus on Phosphorus

As a landscape or grounds manager, shouldn't you know the basics about the products you use? Take phosphorus, for instance. See how well you do on this quiz, based on an article written by Dr. Peter Landschoot, Penn State University.

The Landscape Management Handbook

This best single-source reference containing the most current and comprehensive information on the basics of turfgrass and landscape management available today!

edited by
William E. Knoop

125 pages, softcover
Item #LSMB830
$24.95

Provides an overall understanding of turf and landscape care and management and covers all the basics of the green industry

Covers all the topics golf course superintendents and students of turfgrass and landscape management need to know

Combines practical information with the tried and true basics of management to provide a single, practical, affordable and up-to-date text

Features detailed information, charts, diagrams, figures and tables to illustrate key information points

The Landscape Management Handbook provides a unique, single-source reference of comprehensive information on a variety of turf and landscape topics. It's an ideal handbook for golf course and lawn care superintendents and crew members, and is also appropriate for schools that teach basic turf and landscape management.

Call 1-800-598-6008
Fax: 218-723-9146
Outside the U.S. 218-723-9180
Order on-line at www.landscapegroup.com

ADVANSTAR MARKETING SERVICES
Customer Service Dept. • 131 W. 1st St., Duluth, MN 55802


CODE: 960574
specially blended products, which gives it the additional marketing tool of uniqueness, there is a range of products available to lawn care companies looking for a way to separate themselves from the pack. These include organic-based materials, a combination of natural-organic and synthetic-organic materials, which allows for maximizing the benefits of fertilizer applications. Organic-based products can range from 25% organic material to 100% organic. Anything less than 100% is organic-based.

True, early organic products were often ineffective and costly when compared to the traditional approach. Many products were dusty, possessed an offensive odor, had a limited shelf life or had use rates that were simply impractical for broadcast application. But now, some fertilizer formulat ors blend complete N-P-K fertilizers that contain both biological and traditional components. The customer's desire for high product quality, availability, competitive pricing and lower environmental impact are being met and often exceeded. To satisfy the needs of the turf professional,

Field studies indicate that there is better interaction between nutrients, turfgrass and plant microbes in soils that have adequate organic matter.

manufacturers of these products must specify ingredients that blend well, do not degrade, are readily available and provide definite environmental benefits.

Here are the benefits

According to Catron, most fertilizers are designed to feed the turf. While this is necessary, feeding the soil is often overlooked.

"It is old-fashioned agronomics. It is simply understanding plant nutrition and understanding that you're dealing with a soil environment that's full of organisms. And if you feed all these organisms, they, in turn, will feed the turfgrass."

Catron looks at it as an investment into the soil where you can get a healthier plant that "withstands disease and insect problems and reduces the overall use of any kind of controls, whether they're biological or synthetic."

Field studies indicate that there is better interaction between nutrients, turfgrass and plant microbes in soils that have adequate organic matter. As the nutrient program approaches this balance in the soil,
TurfGrass Trends delivers . . .

. . . practical turfgrass management information you can use today, from the #1 research digest for turf managers. Begin your subscription right here, and see what you've been missing! Each issue is written by field experts, and includes leading-edge research and timely information for practical, proven answers to your turfgrass challenges.

- disease management
- nutrients
- insect management
- genetic improvement
- irrigation
- weed management
- so much more in every issue!

". . . helpful and informative. I believe this is a very valuable publication, especially as we all work to protect the environment."

Dr. Terrance P. Riordan
Turfgrass Plant Breeder
University of Nebraska

Yes! Begin my subscription to TURFGRASS TRENDS

U.S. & CANADA

| 6 Months | $96  | 1 Year | $180 |

ALL OTHER COUNTRIES

| 1 Year  | $210 |


My payment enclosed. (Make checks payable to TURFGRASS TRENDS.)

Please Bill Me

Charge my subscription to:  VISA  MasterCard  American Express

Signature ______________________ Date ______________________

Account # ____________________________ Exp. Date ____________________________

Billing Address ____________________________

City ____________________________ State ____________________________ Zip/Postal Code ____________________________

Fax completed form with credit card information to 218-723-9417 or 9437, or mail coupon with your payment to TURFGRASS TRENDS, 131 West First Street, Duluth, MN 55802-2065.

Charges will appear on your credit card statement as Advanstar Communications Inc., which publishes and distributes this magazine.

Name (please print) ____________________________

Title ____________________________

Business ____________________________

Address ____________________________

City ____________________________ State ____________________________ Zip/Postal Code ____________________________

Country ____________________________

Internet/E-Mail Address ____________________________
the quality and health of the turfgrass improves. Increased rooting and turf density reduce the reliance on pesticide use also.

**Economic benefits?**

The price difference between organic-based fertilizers and synthetic fertilizers has narrowed, but organic-based materials still tend to be more expensive. So can you justify a higher-priced product? Well, if a solid program means that you can reduce your use of other materials, the answer is yes.

Catron says that yearly comparative data at NaturaLawn of America data indicates that they use 80% less control materials than a traditional lawn care company, for weed and insect controls, and over 97% of the applications that they do make for insects are biologically based.

In addition, increases in earthworm populations, mixing of organic materials into the soil and decreases in thatch all contribute to the condition of the soil, and can only benefit the turf, which ultimately will impact the types and extents of treatments required.

**How do you start?**

Well, besides finding a supplier of organic-based products and updating your ad in the Yellow Pages, it is important to have a good understanding of the nutritional aspects of the turf you are dealing with.

Catron advises people to look down the road and see the long-term benefits. Changing your materials is an easy step, he says. The tough change is adapting your approach and training, and involving your employees to make good decisions and not to treat a disease symptom as soon as they see it. If you are building soil as well as turf, you want to give the soil organisms and insects a chance to do their job.

**Chuck Paulson is the National Sales Director and Mike Archer is Product Manager for Spring Valley Turf Products, Jackson, WI.**

---

**Fertilization and nutrition products**

<table>
<thead>
<tr>
<th>Company</th>
<th>Ingredients</th>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Johnathan Green</td>
<td>Organic-based soil treatments</td>
<td>Complete line of fertilizers and fertilizer combination products</td>
</tr>
<tr>
<td>Harmony Products</td>
<td>Organic and natural/organic-base fertilizers, liquid applications and fertilizer combinations with weed and insect control products</td>
<td>Complete 14-3-6 1% Iron, 6-2-12 3% Iron Bridge Products and the new Complete 7-2-5 4% Iron</td>
</tr>
<tr>
<td>Howard Johnson's Enterprises</td>
<td>Beneficial bacteria</td>
<td>Multigreen II</td>
</tr>
<tr>
<td>Lange-Stegmann</td>
<td>Organic chelated of iron, copper, zinc and manganese that improves root growth, color and stress tolerance</td>
<td>N-Sure-KS liquid fertilizer, part of the first Surf family of liquid fertilizers</td>
</tr>
<tr>
<td>Terra Industries</td>
<td>Organic chelated of iron, copper, zinc and manganese that improves root growth, color and stress tolerance</td>
<td>Terra's Gold Cote technology delivers predictable, controlled release nutrition</td>
</tr>
<tr>
<td>Tesserendero Kerley</td>
<td>Organic chelated of iron, copper, zinc and manganese that improves root growth, color and stress tolerance</td>
<td>N-Sure-KS liquid fertilizer, part of the first Surf specialty fertilizer solutions, contains trizone slow-release nitrogen and potassium thioulate</td>
</tr>
</tbody>
</table>

Fertilizers are dry granulated fertilizer products made from aerobically composted turkey litter. Bolster plant growth supplements, formulated from seaweed, humic acids and plant nutrients, are available in liquid and water-soluble packets.

For more information call 800/383-4081 or Circle No. 288

**Nutramax Laboratories, Inc.,** offers Macro-Sorb radicular and Macro-Sorb foliar amino acid-based fertilizers and Quelant-Ca calcium chelated with amino acids.

Quelant-Ca is tank-mix compatible with herbicides, soluble fertilizers, insecticides, fungicides and plant growth regulators.

For more information call 800/925-5187, website www.nutrimaxlabs.com or Circle No. 289

**Plant Health Care's Flexx** reduces stress, stimulates root growth and corrects nutrient deficiencies.

A water-soluble biostimulant premix, Flexx comes with fully chelated micro-nutrients, biostimulants and beneficial bacteria.

For more information call 800/421-9051, website www.planthalthcare.com or Circle No. 290

**Regal Chemical Co.,** offers Multigreen II.

This liquid water-soluble organic blend of organic chelated of iron, copper, zinc and manganese that improves root growth, color and stress tolerance.

For more information call 800/621-5208 or Circle No. 291

**Simplot's** line of Best brand fertilizers are formulated for a wide range of applications.

Many Best products contain Polyon, TriKote and Best-Cote controlled-release polymer and sulfur coatings.

For more information call 800/992-6066, website www.bestfertilizer.com or Circle No.xxx

**Terra Industries** offers a full line of fertilizers. Products include primary, secondary, micro-nutrient and pesticide packages. Terra's Gold Cote technology delivers predictable, controlled release nutrition.

For more information call 800/288-7353, website www.terraindustries.com or Circle No. 292

**Tessendero Kerley** offers the first Surf family of liquid fertilizers. N-Sure-KS liquid fertilizer, part of the first Surf foliar specialty fertilizer solutions, contains trizone slow-release nitrogen and potassium thioulate.

For more information call 800/525-2803 or Circle No. 293
The American work ethic is not dead.

Utility Tractors
8.4% financing

Z-Trak™ F620
zero down

Commercial Walk-Behinds
free line trimmer

Commercial Cutter Package
$99/month
$99/down

Gator 4x2
$99/month

Taking Care Of Business
And After 160 Years

Your to-do list just got a lot shorter. Gas or diesel, 2- or 4-wheel drive, Gator® Utility Vehicles are great for most any job. Stable and surefooted, they haul more than their own weight (up to 1,400 pounds!), yet tread lightly on turf, with a psi of only 7.1 to 7.5. For as little as $99 a month, you’ll wonder how you ever did without one.

Fleet Owner’s Discount

Get a minimum of $100 credit per unit when you buy any combination of 3 or more John Deere commercial walk-behinds (36-in. or larger), commercial front mowers, Z-Trak zero-turning-radius mowers and Gator utility vehicles. Ask your dealer for complete details.

Front Mowers

$500 off F725®

$800 off F900s and F1145®

The savings? Industrial-size. Choose from six front mower models — 20 to 28 hp, gas or diesel. Every one with patented two-pedal control, power steering, and master brake pedal for the PTO. F1145 has on-demand or full-time 4-wheel drive. See one today.

Gator 4x2

$99/month†

or just $5,995∗

Z-Trak™ F620

zero down‡

$214/month‡

Nothing Runs Like A Deere®
With Us, ©

**Commercial Cutter Package Sale**

For this package, the price is right. The thirteen-hp GS30 gear-drive mower with 36-inch deck, 250-mph backpack blower, fast-cutting commercial hedge trimmer, and industry-best XT120 gas line trimmer all mean business — lots of business, for you.

When you test-drive any commercial equipment in this brochure, you'll receive a FREE John Deere mesh trash bag. Empty, of course. Offer available at participating dealers only.

A deal with a really long string attached. Buy a John Deere commercial walk-behind (36-in. or larger) before May 31, 1999, and you'll receive a free, next-generation commercial-grade line trimmer (plus get zero-down financing).** Besides enjoying the advantages of superior decks and fully enclosed transmissions, on our hydrostatic models, you'll also get the opportunity of a ten-day test drive.***

New XT Series Trimmers

Deere M-Series engines set the tone for power and sound quality. Their extreme durability, reliability, and power make these new handtools the best way to arm yourself.

3 YEAR limited warranty on HD & GS transmissions

Perhaps the most vital part of a commercial mower, John Deere wide-area walk-behind transmissions come with the assurance of a three-year limited warranty. So they'll be part of your crew for a long time to come.

Free Line Trimmer $319.99 Value

with purchase of commercial walk-behind 36-in. or larger


* Manufacturer's suggested list price. Price may vary by dealer.
** At participating dealers. Subject to approved credit through John Deere Credit Installment Plan. Financing at 8.4% for 36 mo. for commercial use only. Dealer setup, freight, taxes, and other miscellaneous charges (if any) are not included in prices and monthly payments. Personal use installment financing also available. Ask dealer for details. Offer expires May 31, 1999.
*** It's the John Deere Promise: If you're not completely satisfied with your purchase, you can return it within ten days for a full refund.
With Us,

Gator 6x4

$136/month**

or just $8,255*

790 Tractor

$10,995

lowest price in its class**

The best financing around.

These 20-hp zero-turning-radius mowers with a choice of 48-, 54-60-inch decks already set the user-friendliness and ease-of-service. Option of buying one with no money (May 31, 1999)**, their financing is the same.

Quality Decks

A great first impression. Most John Deere decks are pressed from a single sheet of heavy steel, lending them a strength welded-together rivals simply can't match. Underneath, a high-lift design, maximum blade overlap, and a wide-discharge chute provide you the precision cut that impresses the first time — and every time.

90 Days

Same As Cash

It's an advance on your future. Pay nothing for 90 days for the John Deere commercial parts, service and handheld products you need to build your business now. Offer good through October 31, 1999.***

It's Nowhere Nea
An Early Retirement.

**PowerGard® Protection Plan**

Security and value for the long term. Available for all new John Deere tractors, engine and powertrain coverage can be purchased for 12, 24, or 36 months (with varying hour combinations) beyond the John Deere Basic Warranty. This coverage transfers to subsequent owners, so it not only protects your investment, but adds resale value, too.

---

**5210 Tractor**

*Lease for $199.99/month*

53 hp / 45 PTO hp

Power and economy. This 45-PTO-hp package includes standard CollarShift transmission with 9 forward/3 reverse speeds. Ask your dealer about upgrading to our 540/540E PTO option. For light- to medium-duty jobs, it saves fuel and reduces noise by operating 540-rpm PTO implements at a much lower engine speed.

---

**100 HST Tractor**

$300 off*

20 hp / 16 PTO hp

The quicker hooker-upper. A 20-hp diesel engine. HST automatic transmission with easy-to-use Twin Touch® foot controls. 4WD. Mid- and rear-PTOs. Power steering. And really, really quick implement hook up. Stop by your dealer to find out more.

---

**4500 Tractor**

*Price $399.00/month†*

39 hp / 33 PTO hp

Never lets work pile up. High breakout force, quick cycle times, and a PowrReverser™ transmission (that lets you go back and forth without clutching) allow this 39-hp tractor package to set the pace in the industry for loading and unloading. But don't take our word for it, try one for yourself. (Price includes 460 Loader, 616 Rotary Cutter.)

---

Hour An Early Retirement.
The wait is over. Now you can finance John Deere implements worth over $1,000 for one low rate. These implements are exceptionally easy to hook up, and perfectly complement the machines they attach to. Visit your John Deere dealer to find out more.

8.4% Financing

RPM Parts Kit
Perhaps the only time in-the-box thinking is a good idea. This kit contains almost everything you need to perform routine service on your equipment. Pick one up when you buy a machine, and you’ll be all set for 500 hours of service.

Great workmanship and dedication to the quick fix.
We put as much care into servicing machines as we do building them. That’s why for the past 160 years, expert technicians have always stood by to perform repairs quickly and well.

1-888-669-7767/ www.deere.com for a dealer near you.

Parts on time
After-hours. Weekends. Next-day delivery. A 90-day warranty. Before you ever install them, John Deere parts set themselves apart. Crafted to meet the most exacting standards (ours), they’re available both when you need them, and where — at your John Deere dealer.

Nothing Runs Like A Deere®

Now Through May 31, 1999
Magnify your results!

Your target wants to see more from you.
Advanstar Direct Mail Lists are precisely targeted.
Which means that regardless of what you’re sending, your target will receive it.

TARGETED NAMES
UPDATED QUARTERLY—NEW NAMES!
GUARANTEED DELIVERABILITY
HIGHLY SELECTABLE
ASK ABOUT 24 HOUR TURNAROUND

Call today:
888-RENT-LIST

Art, Beauty & Fashion
Entertainment / Marketing
Energy & Environmental Management
Landscaping, Pest Control & Roofing
Motor Vehicles
Telecommunications
Travel / Hospitality
And More …
Build a cost-effective parts inventory

Save yourself time and money by building the right maintenance parts inventory for your operations.

Just follow these seven steps

By MARK NEIDICH

If you think the cost of an inventory is all parts and supplies, think again. Parts are 30% of equipment maintenance costs (not including operating costs). Labor constitutes most of the balance, although miscellaneous costs may be as high as 10%.

These figures do not reflect average downtime of equipment, the time spent getting replacement parts when breakdowns occur or other data which would indicate the effectiveness of the inventory control system.

Support dollars for shelves, lighting, telephone and vehicle should be 25% of the on-shelf inventory. For a $2,500 annual parts inventory, turned over six times per year, this would give $416 on-shelf maximum ($2,500/6).

2. Choose the right parts

New parts — Factory manufactured parts are usually the highest quality, best fit, longest warranted and most expensive. Aftermarket manufactured parts can be as good as factory manufactured ones, but are often the equivalent of rebuilt parts, and sometimes worse.

Rebuilt parts — These parts have been reconditioned and tested. They are 30% to 50% less expensive than new parts. In most cases, you can get good service from such parts, but they have been used and therefore, to a certain extent, are fatigued. Although they are less expensive than new parts, the service life is considerably less.

The cost to consider here is the repeat labor cost of installation associated with the shorter component service life. One rule of thumb seems to cover most rebuilt parts: They make sense when you can expect to get 75% of the original life out of the rebuilt unit, but at 50% or more below the cost of a new one.

A major drawback of a major use or rebuilt part is that the components don’t wear at the same rate, thus increasing the frequency of unscheduled repairs, since the unpredictability of the parts makes scheduled maintenance difficult.

Premanufactured parts — These are rebuilt parts, repaired to original factory specifications. They cost more than rebuilt, but less than new. Again, labor costs are a significant consideration.

Your goal should be to plan for scheduled repairs, thus saving the extra cost inherent in unscheduled repairs. Good quality parts replacement helps you reach your goal. Poor quality parts means more frequent failures and low equipment availability.
3. Understand price vs. cost

Too often, price and cost are used interchangeably and in error. **Price** is what we pay in dollars to acquire a product or service. **Cost** takes into consideration all the factors that add up to return on investment. We can spend a varying number of dollars on similar types of products, but real costs have a wide variation depending on the benefits we receive in terms of life, economy and quality of performance.

Ease of installation and frequency of service, labor required and safety are only a few of the considerations in determining cost. In essence, if we are to justify the high initial price of a product, we will have to do so on the basis of its cost.

4. Balance inventory vs. downtime

Anything that can be done to reduce the spare parts inventory without sacrificing equipment availability reduces your costs. However, as equipment availability increases, inventory costs rise sharply. If a large inventory is aimed at having many vehicles available, cost reductions just won’t happen (although downtime costs drop and maintenance and labor costs remain about the same).

Parts should be replaced in inventory to minimize equipment downtime. Because of the cost of warehousing and maintaining our inventory, the best theoretical policy would be no inventory at all. But this is unrealistic because we know we can’t get parts instantly.

5. Buy wisely

There are several categories of discounts available to fleets. Most owner/operators don’t know what sort of discount they can reasonably hope for or how favorable each one is.

**Fleet** — This is the best price small operators can obtain with no inventory. It usually runs 5% off walk-in prices.

**Jobber** — If you are going to stock some inventory, this category will give you 15% off.

**Distributor** — This price is 25% to 35% off counter, but will constitute a $2,500 to $3,000 monthly purchase of inventory.

**Manufacturer** — Purchase from the manufacturer usually is only possible when it is a fairly small company, but the manufacturer can offer 50% to 75% savings. This would be vehicle parts only. Small equipment manufacturers’ parts usually will be higher than aftermarket suppliers.

6. Control your inventory

All inventories need some type of control system. The simplest system would be to restock when the bin is empty. This system works poorly because it leaves you without parts when you most need them.

Establish an economical quantity that works for your operations. This will reduce the cost of purchase-order transactions, while also leaving you with inventory.

7. Understand volume

Look at the item cost vs. the inventory volume. Fast-moving items will account for 65% of your inventory. This is where you should concentrate your purchases and management to reduce downtime or out-of-service units (which are often caused by inexpensive parts).

Although oil filters and lubricants are not considered parts inventory, they are part of the purchased inventory and vital to your truck and equipment operation. It is these items that will give you purchasing power at a warehouse distributor and allow you to start price negotiations to reduce your cost on all items purchased there.

Mark Neidich is fleet manager at Groundmasters, Cincinnati, OH, where he is responsible for 45 trucks and 400 pieces of equipment.
Is your service mix costing you money?

Add-ons can mean added expenses, not just added profits. If your services aren’t up to snuff, use careful analysis to find out why

By ED, TODD AND AARON WANDTKE

You operate Mixed Mowing & Maintenance Company, and you know something isn’t right. Although you’ve added new services, it hasn’t worked out as you hoped. You’re not alone. Many firms have expanded their service mix, but not all have found this means better profitability.

It’s time to do some serious analysis to help you decide if you need to drop the unprofitable services. How can you determine if your service mix is delivering enough profitability? What can you do to return your business to the profitability it had before? If labor is tight, should you keep the current service mix?

We used a sample profit and loss statement for a company that we consulted with previously. It may be like your operation. Here are the symptoms:

- It experienced significant growth in volume but, for two years, the owners didn’t seem to make more money.
- They borrowed more money and it took longer each year to become profitable.
- The company bought more equipment, which caused the complication of moving to a new location.

Go back in time

By looking back at Mixed Mowing’s last three years (Exhibit 1), we can see that the company was making money then, but as it experienced growth, profits remained constant and even dropped. What was the problem?

We examined the revenue from years 1 to 3 and observed it increased 26% in year 2 and 27% in year 3. The core business, mowing, was barely growing, but the new services were growing rapidly.

On the other side of the ledger, total operating expenses as a percentage of revenue declined in year 2 and rose in year 3. This suggests we need an analysis of the component costs. Administrative expenses rose 3% in year 3. We need to identify the expenses directly attributable to the services. Finally, profit increased from year 1 to year 2, but dropped in year 3.

Look at each service

After we identified costs by service, a profit and loss statement was developed (Exhibit 2). You can see that cleanup and lawn care made money for the company, while irrigation lost money — $52,150.

Next, we determine if any revenue was a function of another service being performed. (One relation was established: Cleanup would not be a service center if the company wasn’t already doing the mowing services.)

We asked the owners how they provided the services in prior years. Surprisingly, they had subcontracted one service and started another because many of its customers seemed to need it.

Under the microscope

To analyze Mixed Mowing’s services, we separated the revenue into operating service columns (Exhibit 2). This was done on the basis of the employees that performed the services. To understand how the services affect profitability, we:

- Combined mowing maintenance with miscellaneous service, as these services are performed by the same people, with the same vehicles.
- Identified clean up, irrigation and lawn care as separate cost centers.
- Identified payroll by the individuals who performed each of the applicable services.
- Separated subcontract cost, material purchases, taxes and other expenses by service cost centers.

cont. on page 54
Honda Proudly Announces Some Dramatic Reductions.

No, this isn’t a closeout sale. It’s a brand new line of string trimmers from Honda. And thanks to some dramatic reductions, now you really can do more with less.

Honda’s new trimmers take advantage of their 4-stroke engine’s combustion format to dramatically decrease noise. 4-stroke engines are well known for producing fewer emissions than comparably sized 2-stroke engines, making them very environmentally friendly. In fact, Honda’s trimmers meet all EPA and CARB emission standards.

Honda’s trimmers use straight gasoline, eliminating the hassle of mixing gas and oil. And they can run two times longer than comparable 2-stroke engines on the same amount of fuel! The engines also suppress spark plug carbon buildup and carburetor clogging, maintaining like-new starting ease.

Starting under $320, Honda’s hard-working, durable string trimmers are some of the most efficient and cost-effective string trimmers available.

HONDA Lawn & Garden

For a free brochure and location of the Honda Lawn & Garden Dealer nearest you call 1-800-426-7701.

For optimum performance and safety, please read the owner’s manual before operating your Honda Power Equipment. ©1998 American Honda Motor Co., Inc.

Circle No. 117 on Reader Inquiry Card.
**MIXED MOWING & MAINTENANCE CO. EXHIBIT 1**

**PROFIT & LOSS STATEMENT**

<table>
<thead>
<tr>
<th>Revenue Description</th>
<th>Year 1 $</th>
<th>Year 2 $</th>
<th>Year 3 $</th>
<th>Year 1%</th>
<th>Year 2%</th>
<th>Year 3%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lawn Care</td>
<td>$0</td>
<td>$0</td>
<td>$122,000</td>
<td>0%</td>
<td>0%</td>
<td>12.01%</td>
</tr>
<tr>
<td>Mowing &amp; Maintenance</td>
<td>475,000</td>
<td>520,000</td>
<td>550,000</td>
<td>74.80%</td>
<td>65.00%</td>
<td>54.13%</td>
</tr>
<tr>
<td>Irrigation</td>
<td>0</td>
<td>65,000</td>
<td>167,000</td>
<td>0</td>
<td>8.13%</td>
<td>16.44%</td>
</tr>
<tr>
<td>Property Cleanup</td>
<td>0</td>
<td>40,000</td>
<td>92,000</td>
<td>0</td>
<td>5.00%</td>
<td>9.06%</td>
</tr>
<tr>
<td>Miscellaneous Services</td>
<td>160,000</td>
<td>175,000</td>
<td>85,000</td>
<td>25.20%</td>
<td>21.88%</td>
<td>8.37%</td>
</tr>
<tr>
<td>Total Revenue</td>
<td>635,000</td>
<td>800,000</td>
<td>1,016,000</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

**Operating Expenses**

<table>
<thead>
<tr>
<th>Description</th>
<th>Year 1 $</th>
<th>Year 2 $</th>
<th>Year 3 $</th>
<th>Year 1%</th>
<th>Year 2%</th>
<th>Year 3%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Payroll</td>
<td>245,000</td>
<td>250,000</td>
<td>308,022</td>
<td>38.58%</td>
<td>31.25%</td>
<td>30.32%</td>
</tr>
<tr>
<td>Subcontract Labor</td>
<td>65,000</td>
<td>118,000</td>
<td>32,000</td>
<td>10.24%</td>
<td>14.75%</td>
<td>3.15%</td>
</tr>
<tr>
<td>Materials</td>
<td>0</td>
<td>0</td>
<td>140,000</td>
<td>0</td>
<td>0</td>
<td>13.78%</td>
</tr>
<tr>
<td>Gasoline</td>
<td>12,000</td>
<td>16,000</td>
<td>22,450</td>
<td>1.89%</td>
<td>2.00%</td>
<td>2.21%</td>
</tr>
<tr>
<td>Vehicle Maintenance</td>
<td>30,000</td>
<td>35,000</td>
<td>48,000</td>
<td>4.72%</td>
<td>4.38%</td>
<td>4.72%</td>
</tr>
<tr>
<td>Payroll Taxes</td>
<td>36,750</td>
<td>37,500</td>
<td>46,203</td>
<td>5.79%</td>
<td>4.69%</td>
<td>4.55%</td>
</tr>
<tr>
<td>Employee Benefits</td>
<td>8,000</td>
<td>10,000</td>
<td>18,000</td>
<td>1.26%</td>
<td>1.25%</td>
<td>1.77%</td>
</tr>
<tr>
<td>Operating Supplies</td>
<td>10,000</td>
<td>12,000</td>
<td>28,400</td>
<td>1.57%</td>
<td>1.50%</td>
<td>2.80%</td>
</tr>
<tr>
<td>Uniforms</td>
<td>5,000</td>
<td>6,000</td>
<td>7,625</td>
<td>.79%</td>
<td>.75%</td>
<td>.75%</td>
</tr>
<tr>
<td>Depreciation</td>
<td>6,000</td>
<td>12,000</td>
<td>24,000</td>
<td>.94%</td>
<td>1.50%</td>
<td>2.36%</td>
</tr>
<tr>
<td>Total Operating Expenses</td>
<td>417,750</td>
<td>496,500</td>
<td>674,700</td>
<td>65.79%</td>
<td>62.06%</td>
<td>66.41%</td>
</tr>
<tr>
<td>Gross Profit</td>
<td>217,250</td>
<td>303,500</td>
<td>341,300</td>
<td>34.21%</td>
<td>37.94%</td>
<td>33.59%</td>
</tr>
</tbody>
</table>

**Administrative Expenses**

<table>
<thead>
<tr>
<th>Description</th>
<th>Year 1 $</th>
<th>Year 2 $</th>
<th>Year 3 $</th>
<th>Year 1%</th>
<th>Year 2%</th>
<th>Year 3%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Payroll Administration</td>
<td>85,000</td>
<td>99,000</td>
<td>145,000</td>
<td>13.39%</td>
<td>12.38%</td>
<td>14.27%</td>
</tr>
<tr>
<td>Payroll Service</td>
<td>2,200</td>
<td>2,400</td>
<td>2,700</td>
<td>.35%</td>
<td>.30%</td>
<td>.27%</td>
</tr>
<tr>
<td>Dues &amp; Subscriptions</td>
<td>1,200</td>
<td>1,500</td>
<td>2,000</td>
<td>.19%</td>
<td>.19%</td>
<td>.20%</td>
</tr>
<tr>
<td>Education</td>
<td>1,500</td>
<td>2,000</td>
<td>2,600</td>
<td>.24%</td>
<td>.25%</td>
<td>.26%</td>
</tr>
<tr>
<td>Building Rent</td>
<td>15,000</td>
<td>15,000</td>
<td>15,000</td>
<td>2.36%</td>
<td>1.88%</td>
<td>1.48%</td>
</tr>
<tr>
<td>Payroll Taxes</td>
<td>12,750</td>
<td>14,850</td>
<td>21,750</td>
<td>2.01%</td>
<td>1.86%</td>
<td>2.14%</td>
</tr>
<tr>
<td>Employee Benefits</td>
<td>5,100</td>
<td>6,500</td>
<td>9,600</td>
<td>.80%</td>
<td>.81%</td>
<td>.94%</td>
</tr>
<tr>
<td>Insurance Auto/Gen Liability</td>
<td>9,000</td>
<td>14,000</td>
<td>20,000</td>
<td>1.42%</td>
<td>1.75%</td>
<td>1.97%</td>
</tr>
<tr>
<td>Telephone</td>
<td>3,500</td>
<td>4,800</td>
<td>6,000</td>
<td>.55%</td>
<td>.60%</td>
<td>.59%</td>
</tr>
<tr>
<td>Office</td>
<td>12,000</td>
<td>14,000</td>
<td>20,000</td>
<td>1.89%</td>
<td>1.75%</td>
<td>1.97%</td>
</tr>
<tr>
<td>Trade Shows</td>
<td>2,000</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>.20%</td>
</tr>
<tr>
<td>Advertising/Promotion</td>
<td>5,000</td>
<td>15,000</td>
<td>12,000</td>
<td>.79%</td>
<td>1.88%</td>
<td>1.18%</td>
</tr>
<tr>
<td>Vehicle Depreciation</td>
<td>6,000</td>
<td>10,000</td>
<td>12,000</td>
<td>.94%</td>
<td>1.25%</td>
<td>1.18%</td>
</tr>
<tr>
<td>Vehicle Expense</td>
<td>1,200</td>
<td>1,800</td>
<td>2,400</td>
<td>.19%</td>
<td>.23%</td>
<td>.24%</td>
</tr>
<tr>
<td>Travel</td>
<td>4,000</td>
<td>6,000</td>
<td>8,000</td>
<td>.63%</td>
<td>.75%</td>
<td>.79%</td>
</tr>
<tr>
<td>Entertainment</td>
<td>2,000</td>
<td>4,000</td>
<td>6,000</td>
<td>.31%</td>
<td>.50%</td>
<td>.59%</td>
</tr>
<tr>
<td>Professional Services</td>
<td>12,000</td>
<td>13,000</td>
<td>15,300</td>
<td>1.89%</td>
<td>1.63%</td>
<td>1.51%</td>
</tr>
<tr>
<td>Interest</td>
<td>12,000</td>
<td>16,000</td>
<td>22,000</td>
<td>1.89%</td>
<td>2.00%</td>
<td>2.17%</td>
</tr>
<tr>
<td>Total Administrative Expenses</td>
<td>189,450</td>
<td>239,850</td>
<td>324,350</td>
<td>29.83%</td>
<td>29.98%</td>
<td>31.92%</td>
</tr>
<tr>
<td>Operating Profit</td>
<td>27,800</td>
<td>63,650</td>
<td>16,950</td>
<td>4.38%</td>
<td>7.96%</td>
<td>1.67%</td>
</tr>
</tbody>
</table>

(cont. on page 58)
One Big Mean Yellow Machine

Blazer 360Z

- Floating Deck
- Deck Offset
- Floating Front Axle
- Zero Turn Radius

No Payments For 120 Days On Approved Credit
Howard Price Turf Equipment • 18155 Edison Avenue • Chesterfield, MO 63005

Circle No. 113 on Reader Inquiry Card
A little Talstar® controls common lawn pests as well as a lot of Dursban® or diazinon. Talstar label rates for surface feeding pests are one-fourth the Dursban rate and one-tenth the rate for diazinon. So while the impact on the environment is reduced, the impact on lawn pests remains the same: they’re gone. With no odor but long residual. And if you compare Talstar to other pyrethroids like Tempo® or Scimitar®, you’ll find that Talstar offers two additional benefits: true mite control and no skin irritation.

Find out why lawn care operators all over the country have made Talstar the fastest rising star in the lawn care industry. Call 1-888-246-4125 for Talstar literature and labels.

Talstar at ½ oz. per 1,000 square feet controls these pests:

- Annual Bluegrass Weevil (Hyperodes, Adult)
- Ants
- Armyworms
- Billbugs (Adult)
- Black Turfgrass Ataenius (Adult)
- Centipedes
- Chinch Bugs
- Cutworms
- Fleas (Adult, Larvae)
- Imported Fire Ants (Adult, Mounds)
- Leafhoppers
- Mealybugs
- Millipedes
- Mole Cricket (Adult, Nymph)
- Pillbugs
- Sod Webworm
- Sowbugs
- Ticks
hed a sudden rise to the top

Talstar PL Granular and Talstar Lawn & Tree Flowable.
The rising stars of the lawncare industry.

Circle No. 108 on Reader Inquiry Card
We also learned that their irrigation services covered installation, service and lighting repairs. Analysis of this cost center showed that Mixed Mowing should get out of the irrigation business. However, on closer look at the revenue and costs, we learned that installation was the prime cause of the operating loss in this cost center.

Based on the analysis, we asked the following questions:

• Does Mixed Mowing need to market installation of irrigation systems?
• If the company only offered irrigation and outdoor light service work, would there be enough revenue possible for one individual or would another trained individual be needed?

Based on our discussions, we learned that the individual who designed irrigation systems would not remain if the company only remained in the service business. Mixed Mowing chose to exit the irrigation business.

Pick the winners

That decision led to a new picture. Mixed Mowing’s owners realized that by realigning services, they could make more than $50,000 more per year (operating profit of $16,950 vs a new operating profit figure of $69,100).

It’s possible your company may be losing money in one service but it is not evident, based upon the way you are keeping the records. By following an analysis like ours, you can see if there is an opportunity for improving your profitability. Not all businesses can be analyzed as quickly as this, but you will learn more about the financial contribution from each service center.

This is a good time to analyze the income statement for your company for last year. You may find that you can improve profitability if you eliminate services that are not improving your overall financial performance.

The authors provide green industry consulting services for Wandtke & Associates Inc., 614/891-3111.

### MIXED MOWING & MAINTENANCE CO. EXHIBIT 2

**PROFIT & LOSS STATEMENT**

<table>
<thead>
<tr>
<th>Revenue</th>
<th>Total</th>
<th>Mowing</th>
<th>Cleanup</th>
<th>Lawn Care</th>
<th>Irrigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemicals</td>
<td>$122,000</td>
<td>$122,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mowing &amp; Maintenance</td>
<td>550,000</td>
<td>550,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Irrigation</td>
<td>167,000</td>
<td></td>
<td>167,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Property Cleanup</td>
<td>92,000</td>
<td>92,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Miscellaneous Services</td>
<td>85,000</td>
<td>85,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Revenue</strong></td>
<td>1,016,000</td>
<td>635,000</td>
<td>92,000</td>
<td>122,000</td>
<td>167,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Operating Expenses</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Payroll</td>
<td>308,022</td>
<td>172,022</td>
<td>26,000</td>
<td>40,022</td>
<td>68,000</td>
</tr>
<tr>
<td>Subcontract labor</td>
<td>32,000</td>
<td>20,000</td>
<td>5,000</td>
<td>7,000</td>
<td>7,000</td>
</tr>
<tr>
<td>Materials</td>
<td>140,000</td>
<td></td>
<td>21,310</td>
<td>26,840</td>
<td>91,850</td>
</tr>
<tr>
<td>Gasoline</td>
<td>22,450</td>
<td>11,950</td>
<td>1,500</td>
<td>3,500</td>
<td>5,500</td>
</tr>
<tr>
<td>Vehicle Maintenance</td>
<td>48,000</td>
<td>38,500</td>
<td>3,000</td>
<td>3,500</td>
<td>3,000</td>
</tr>
<tr>
<td>Payroll Taxes</td>
<td>46,203</td>
<td>21,310</td>
<td>6,300</td>
<td>10,200</td>
<td></td>
</tr>
<tr>
<td>Employee Benefits</td>
<td>18,000</td>
<td>9,840</td>
<td>1,560</td>
<td>2,520</td>
<td></td>
</tr>
<tr>
<td>Operating Supplies</td>
<td>28,400</td>
<td>22,200</td>
<td>1,200</td>
<td>3,000</td>
<td></td>
</tr>
<tr>
<td>Uniforms</td>
<td>7,625</td>
<td>4,375</td>
<td>750</td>
<td>2,000</td>
<td></td>
</tr>
<tr>
<td>Depreciation</td>
<td>24,000</td>
<td>18,750</td>
<td>1,750</td>
<td>2,000</td>
<td></td>
</tr>
<tr>
<td><strong>Total Operating Expenses</strong></td>
<td>674,700</td>
<td>323,440</td>
<td>66,020</td>
<td>88,110</td>
<td></td>
</tr>
</tbody>
</table>

| Gross Profit | 341,300 | 311,560 | 25,980 | 33,890 | 197,130 |

<table>
<thead>
<tr>
<th>Administrative Expenses</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Payroll Administration</td>
<td>145,000</td>
<td>125,000</td>
<td>8,000</td>
<td></td>
<td>12,000</td>
</tr>
<tr>
<td>Payroll Service</td>
<td>2,700</td>
<td>2,700</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dues &amp; Subscriptions</td>
<td>2,000</td>
<td>2,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>2,600</td>
<td>2,600</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Building Rent</td>
<td>15,000</td>
<td>15,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Payroll Taxes</td>
<td>21,750</td>
<td>18,750</td>
<td>1,200</td>
<td></td>
<td>1,800</td>
</tr>
<tr>
<td>Employee Benefits</td>
<td>9,600</td>
<td>8,400</td>
<td>480</td>
<td>720</td>
<td></td>
</tr>
<tr>
<td>Insurance Auto/Gen. Liability</td>
<td>20,000</td>
<td>14,000</td>
<td>2,000</td>
<td>2,000</td>
<td></td>
</tr>
<tr>
<td>Telephone</td>
<td>6,000</td>
<td>5,500</td>
<td>200</td>
<td>500</td>
<td></td>
</tr>
<tr>
<td>Office</td>
<td>20,000</td>
<td>19,100</td>
<td>200</td>
<td>500</td>
<td></td>
</tr>
<tr>
<td>Trade Shows</td>
<td>2,000</td>
<td>2,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advertising/Promotion</td>
<td>12,000</td>
<td>10,000</td>
<td>1,000</td>
<td></td>
<td>1,000</td>
</tr>
<tr>
<td>Vehicle Depreciation</td>
<td>12,000</td>
<td>12,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vehicle Expense</td>
<td>2,400</td>
<td>2,400</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Travel</td>
<td>8,000</td>
<td>6,000</td>
<td>1,000</td>
<td></td>
<td>1,000</td>
</tr>
<tr>
<td>Entertainment</td>
<td>6,000</td>
<td>4,000</td>
<td>1,000</td>
<td></td>
<td>1,000</td>
</tr>
<tr>
<td>Professional Services</td>
<td>15,300</td>
<td>15,300</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interest</td>
<td>22,000</td>
<td>17,900</td>
<td>1,200</td>
<td>1,400</td>
<td></td>
</tr>
<tr>
<td><strong>Total Administrative</strong></td>
<td>324,350</td>
<td>282,650</td>
<td>3,400</td>
<td>16,280</td>
<td></td>
</tr>
</tbody>
</table>

| Operating Profit $ | 16,950 | 28,910 | 22,580 | 17,610 | (52,150) |

| Operating Profit % | 1.67% | 4.55% | 24.54% | 14.43% | -31.23% |
For those of you out there whose job it is to make things grow, UD TRUCKS has some enrichment in the form of a truck. The UD1200 light-duty truck to be exact. It comes with a very efficient 145hp turbocharged and intercooled engine, a cabover design for a tighter turning radius for some of those difficult residential and city streets, and is built for long lasting durability. The UD1200. A truck built to help some other things grow: like your business. For more information about UD TRUCKS, Western U.S. call 800-272-4831, Eastern U.S. call 888-680-8060.

www.udtrucks.com
Yesterday's smart landscape managers knew that irrigation was critical to landscapes. Today's trendsetters understand how to make it critical to their businesses. This three-part series explores past trends, today's irrigation contracting business models and tomorrow's technologies.

By BRUCE F. SHANK

The landscape industry really is a package of industries working together to provide the plants, hardscape, chemicals and equipment that make our nation green. Each segment has developed under the leadership of visionary men and women, largely in the last 50 years of the 21st Century.

People like Ben Warren in the sod industry, Dick Duke in lawn care, Harry Gill in sports turf, Eb Steinegger in the golf course superintendent profession, Arden Jacklin in the lawn seed business, O.J. Noer in the fertilizer industry, and turf researchers like Jim Watson, Jim Beard, Bill Daniel and Fred Grau made our industry a multibillion-dollar business. It's time the landscape industry "Hall of Fame" included the leaders in landscape irrigation.

Unlike the lawn care industry, which matured in less than 40 years after Duke started ChemLawn in Columbus, OH, in the 1960s, the irrigation industry has taken nearly a century to develop into a billion-dollar business. Irrigation innovators did not create a common path on which others could build. Instead, they developed the market regionally. Only recently has consolidation started to pave a highway for rapid growth for manufacturers, distributors and contractors.

Learn From the Past

To get a true perspective of how irrigation has grown, we've included some of the people who helped create today's irrigation industry. It is by no means comprehensive, but hopefully, it will inspire you to respect their progress and to make your own legacy in irrigation.

History records that John D. Ross of...
Pasadena, CA, in 1904 was the first person to design and sell sprinklers for lawn and garden use. He was followed in 1907 by W. Van Thompson, founder of Thompson Mfg. Co., now located in Ohio. A big name in early irrigation was Charles Skinner, who designed a simple, multi-nozzled, above-ground system in 1908. Lewn Nelson, George Moody, Max Snoddy, W.A. Buckner, Edwin Hunter and Karl Kah were among the inventors who pioneered the permanent subsurface irrigation systems of today.

John R. Brooks was the first recognized landscape irrigation contractor in the country. From an office in Detroit, he designed, constructed and installed irrigation systems for Henry Ford, the Chicago Parks Department and other wealthy industrial barons of the 1920s. Thirty years later, Burt Sperber's Valley Crest Landscape Company installed irrigation for the film industry and the California Transportation Agency.

Every region has its tales and early irrigation stories. Irrigation grew up largely on a regional basis. Some manufacturers remain regional to a large extent, choosing to serve the customers they know best.

From a national perspective, irrigation seemed to gel in the 1950s when Rain Bird, Toro, Hunter, L.R. Nelson, Weathermatic, Buckner and others gained momentum. On the West Coast, manufacturers had to install their own products at first. Irrigation distributors didn't exist until after World War II, but they are the ones who built the foundation that enabled the market to nationalize and take off — people such as Ewing, Hodas, Moffet and Tiglio.

Irrigation in a Nutshell

Today, four United States manufacturers represent more than $600 million in irrigation sales — Rain Bird, Toro/Irritrol, Hunter and Orbit. This is approximately half of turf and landscape irrigation sales by manufacturers in the United States. There are midsized manufacturers on the move as well, including Weathermatic, Storm and K-Rain. In addition, some manufacturers do considerable international business.

Three distributors have built substantial chains, doing in excess of $300 million per year in sales — Century Rain Aid, Ewing Irrigation and United Green Mark. Like manufacturing, acquisition and consolidation in the middle ranks of distribution are also taking place. Meanwhile, retail hardware outlets are selling irrigation components wholesale to contractors in some areas. Service to contractors by distributors and manufacturers selling direct to large contractors are concerns that threaten conventional distribution.

Finally, we have large, multiple-branch landscape firms installing irrigation across the country — Environmental Care/Valley Crest, Brickman Industries and ServiceMaster's TruGreen-ChemLawn group. So, in a sense, irrigation has caught up with the landscape industries in the past decade. Yet, most of us know little about irrigation.

Catching Contractors' Attention

Contractors have a sixth sense that alerts them to peculiar things normal people miss, such as lines on a mowing pattern that aren't straight, trees that were pruned improperly, fading color in an annual bed, a lawn suffering from a high grub population or mulch that needs to be refreshed. Contractors are now becoming sensitized to irrigation symptoms, such as dry spots caused by poor uniformity, overspray, wetness resulting from poor scheduling and sprinklers that operate during rainstorms. The fact that irrigation is becoming part of the consciousness of contractors is a significant matter.

Although water shortages should be worrisome enough to generate interest in efficient irrigation to defend our valuable landscapes, they are not the main reason people invest in irrigation. More often, the justification for irrigation is better control and reliability of performance by the land-
Expect the demand for certified irrigation designers to jump in the coming decade. Check with your local distributor about setting up training in your area.

It's not hard to get our attention when the value of irrigation in a landscape project exceeds 25 percent, according Jon Ewing, president of LandTrends in San Diego, CA. "You have to take it seriously." LandTrends has an irrigation division for minor design work, installation and maintenance.

**Segments of the industry**

**Contractors** — As large contracting firms acquire landscape companies with irrigation divisions, they assume a greater involvement in irrigation. To compete with large national chains, smaller contractors will need to increase their level of involvement in irrigation.

**Suppliers** — In turn, more contractors will seek services such as technician training and rudimentary design from distributors. Retail outlets mimicking wholesale suppliers won't be able to provide these services.

**Experts** — Meanwhile, irrigation consultants, the engineers who design complicated irrigation systems, are tempted to focus on the big jobs of large chain contractors. This could leave the midsized and small contractor without the design assistance he or she needs as irrigation grows in popularity. You can expect the demand for certified irrigation designers to jump in the coming decade.

Certification for irrigation contractors can moderate some of the demand for design at the lower levels. Learning how to use AutoCAD isn't enough. Contractors should understand hydraulics and the physical limitations of irrigation components. This will become increasingly important as more irrigation systems mix low-volume irrigation, sprinklers and weather-reactive sensors and controllers. You won't be able to figure it out in the aisle of a mega-hardware store.

Only a handful of states currently license irrigation contractors. Most of these states have used the help of the Irrigation Association when building their tests and requirements. But you don't have to depend upon state licensing to become certified. The classes are taught by the best in the business, and your local distributor can ask the IA to help set up training in your area.

Those who fail to study history are doomed to repeat it. It is a famous phrase that applies to any business. Many painful lessons can be avoided by talking with those in your area with irrigation experience. Do surveys of your existing customers about irrigation. Hire trained individuals and reward them for performance. Be inventive when necessary. One size fits all doesn't work in irrigation.

There is a rich history to the irrigation industry. It belongs as part of the history of the landscape industry. It's time to make irrigation a valued member of the landscape family.

Next month: Thinking of entering the irrigation business or expanding into larger, more comprehensive accounts? LM will look at two models for success.

—Bruce Shank owns Irricom, a publications consulting firm in Palmdale, CA, and Austin, TX. He can be reached at 800/455-4320 or irricom1@earthlink.net.
IT'S ABOUT TIME!

When you use a YAZOO / KEES mower, you get the dependability, performance and features to meet the rugged day-in, day-out demands that Professional Cutters and Landscapers face. That means less down time. Your job is done on time. And that means more time. More time for you. And couldn’t you use a little more time?

To find out more about our time saving equipment, see your local dealer, visit our website at www.yazookees.com or call 1-800-723-9496 extension 337.

YAZOO / KEES
POWER EQUIPMENT

"Your Kind Of Mower"
New Chipco Proxy. Slows growth drama

{Some of us are already

A thicker, denser stand. Fewer clippings and more time between cuts. There’s no denying what’s top of mind for every golf course superintendent. We’re talking about CHIPCO® PROXY™. The new turf growth regulator that works better than anything you’ve ever tried before. And at a fraction of the cost per acre for many applications.

PROXY lasts longer. Up to three weeks longer. Apply PROXY early in the season and you’ll see up to a 50% reduction in clippings through heavy spring growth. Its long residual will catch the eye of every golfer, too, with dense, tightly-knit turf for better playability.

PROXY also costs less than other PGR’s. Its seven weeks of residual on Kentucky bluegrass and perennial ryegrass can give you up to a 50% savings in costs.
typically and reduces the number of cuts. familiar with this concept.

PROXY is also a very turf-safe product that provides a more consistent level of growth regulation. With PROXY, you won’t see the initial yellow shock that discolors grass, or the post regulation surge growth that requires a change in your mowing schedule.

Fewer mowings. Fewer sprays. Longer residual. And up to 50% less cost per treatment for many applications.

We think CHIPCO PROXY is a new concept every professional turf manager should become familiar with.

Circle No. 122 on Reader Inquiry Card
A staff of about 22 at Illinois State University handles turf maintenance, tree and shrub care, snow and litter removal, brick and retaining wall installation, athletic field maintenance, annual and perennial gardens and others tasks on a college campus that is busy year-round.

Award-winning landscape management
Illinois State's Central Quadrangle

This complex campus was a 1998 Grand Award Winner for the Professional Grounds Management Society

Visitors and students know the Central Quadrangle of Illinois State University in Normal, IL, an eight-acre area of turf, harboring more than 400 trees of 80 different species. About 300 shrubs and more than 6,000 annuals (totaling 5,600 sq. ft. in the Quadrangle alone) also challenge the grounds crew. The Quadrangle itself includes several perennial beds and a native Illinois prairie garden.

Each tree receives annual fertilization, aeration, pruning and shaping, plus scouting for insects. Several varieties of annuals are grown in the Grounds Services' greenhouses. Plant varieties are labeled; watering and weeding is done by hand.

The staff keeps turf at a three-inch height throughout the season and IPM is used to control grubs and other pests. Turf is fertilized twice a year, with supplemental applications as needed.

A major element of this project was the redesign of campus walkways to replace existing asphalt ones with concrete, installed in a 5-ft. x 5-ft. pattern. Other renovations include landscaping to enhance pedestrian gateways, add attractive seating and encourage visitors to study and explore the trees and plantings.

Trees have been inventoried, cataloged and tagged by species and new species have been added. A tree map of the Quadrangle was developed for those taking a walking tour of the area.

Upcoming projects include “In Exchange,” an 80,000-sq. ft. area nearby, combining sculpture, colored concrete and plant material on a seasonal theme.

For more information about this project, contact the Professional Grounds Management Society, 120 Cockeysville Rd., Suite 104, Hunt Valley, MD 21030, 410/584-9754. Or contact ISU Dept. of Facilities Management, Box 9100, Normal, IL 61790, 309/438-2032.
Winter is good for hort oil
(Smite mites before they strike)

Dormant-season applications of horticultural oil only work for certain mites and scale species

By DOUG CALDWELL, Ph.D.

Applications of 2% horticultural oil (two gallons of oil in 98 gallons of water) are used from late fall through early spring to control certain pests. This is an “offensive strike” opportunity on overwintering stages of pests that takes them out before they become active next spring and damage plants during the growing season.

Oil applications work by suffocating, rather than poisoning, the pest. The oil plugs up the breathing pores and soft tissues of targeted mites and scale insects.

What you hit is what you get!
It is important to remember that horticultural oils are a contact treatment. But, while thorough coverage is important, soaking or saturating plant tissue can cause phytotoxicity. These applications may not be as effective on certain pest species as you may think and should not be used as a general dormant “cover spray.”

Know your mites
If you believe you can control two-spotted spider mites with winter oil applications, guess again. The two-spotted spider mite overwinters as a female in litter, mulch or other protected areas and is not normally found on the plant. Therefore, this pest is not controlled with the dormant oil strategy. However, the spruce spider mite overwinters on its evergreen hosts (arborvitaes, junipers, hemlocks, pines, etc.) in the egg stage, which makes it quite vulnerable to oil sprays. Be aware, and notify clients, that the oil will temporarily turn those prized Colorado blue and specimen blue Moerheim spruces green, but that new growth will not be affected.

The honeylocust spider mite overwinters on its host as a mature female in bark and bud crevices. Again, it is another prime target for dormant applications.

PLANT SPECIES PRONE TO DAMAGE BY FALL AND WINTER OIL APPLICATIONS

<table>
<thead>
<tr>
<th>Species</th>
<th>Type of Injury</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deciduous</td>
<td>Branch dieback (dead cambium)</td>
</tr>
<tr>
<td>Beech*</td>
<td>Branch dieback (dead cambium)</td>
</tr>
<tr>
<td>Butternut*</td>
<td>Occasional leaf and flower drop and “water spot” of rind</td>
</tr>
<tr>
<td>Hickories*</td>
<td>Branch dieback (dead cambium)</td>
</tr>
<tr>
<td>Maple*, sugar and silver</td>
<td>Stunted and reddened leaves to branch dieback (dead cambium)</td>
</tr>
<tr>
<td>Oak, red and black</td>
<td>Occasional branch dieback (dead cambium)</td>
</tr>
<tr>
<td>Redbud</td>
<td>Late leaf emergence and branch dieback (dead cambium)</td>
</tr>
<tr>
<td>Walnut*</td>
<td>Branch dieback (dead cambium)</td>
</tr>
<tr>
<td>Coniferous</td>
<td>Needle browning, defoliation and branch dieback</td>
</tr>
<tr>
<td>Arborvitae</td>
<td>Needle browning and defoliation</td>
</tr>
<tr>
<td>Chamaecyparis</td>
<td>Needle browning and defoliation</td>
</tr>
<tr>
<td>Cryptomeria</td>
<td>Needle browning and defoliation</td>
</tr>
<tr>
<td>Hemlock</td>
<td>Turns blue cultivars to green (alters wax layers that create the blue color); occasional needle drop and branch dieback</td>
</tr>
<tr>
<td>Junipers</td>
<td>Alters wax layers that create the blue color; needles turn purple brown then brown, defoliation and branch dieback</td>
</tr>
<tr>
<td>Spruces (blue, white, 'Dwarf Alberta')</td>
<td>Occasional marginal browning of leaves</td>
</tr>
<tr>
<td>Taxus</td>
<td></td>
</tr>
</tbody>
</table>

*High risk plants are noted. Fall-winter oil applications are NOT recommended for these species.

NOTE: Injury is not always going to happen. Occurrence of injury tends to vary depending on plant dormancy stage, degree of plant stress (vigor), moisture stress, sudden temperature drops and high humidity following application. But most often it is due to an application procedural-related error or an overdose mistake.
Other species that are vulnerable to dormant season sprays are the southern red mite and the boxwood mite. Both species overwinter on their respective hosts in the egg stage. The southern red mite can be targeted on its broadleaf evergreen hosts, Japanese holly, azalea, Pieris, certain Viburnum spp., etc., on the underside of leaves.

**Soft and armored scales**

Oil is an excellent product to reduce overwintering stages of scales; primarily, the first and second instar nymphs of soft scale species (magnolia, lecanium and cottony maple scales, etc.). A follow-up spray of 2% oil in late August or September is needed to reduce surviving populations.

Overwintering armored scales can be more difficult to control, especially those species that overwinter in the egg stage beneath the scale covering. This group includes oystershell, elm scurfy, elongate hemlock and pine needle scale. Achieving acceptable control of these species is difficult because the eggs are often stacked on top of one another and the oil may only contact the bottom layer of eggs. Target these species during the growing season to get acceptable results.

Other armored scale species overwinter as 2nd instar or mature females and are more readily controlled with November through March applications of oil. These scale species include euonymus, juniper, white peach and obscure scale.

**Beware of phytotoxicity**

Remember, winter identification of plants is critical because phytotoxicity can occur when oil is applied to a sensitive species. Species that should be avoided include arborvitae, beech, Cryptomeria, hickory, maple (especially sugar), spruce and taxus. For maple and spruce, sensitivity varies with location; more problems seem to occur in the Midwest than further north. Branch dieback or death of these species has been reported.

Usually phytotoxicity occurs with higher rates of oil (three gallons of oil per 97 gallons) and early fall (before dormancy) or late spring (at budbreak) applications. There are fewer problems when...
applications are made in late October through February, when the plants are "completely" dormant. A good guideline is to wait until 24 to 48 hours of below-freezing temperatures have passed during Octo-
ber before spraying, and start the applica-
tions, usually in mid- to late-November. **Use agitation and a clean tank**
Avoid phytotoxic effects with agitation. Recirculate the oil solution in the hose before spraying each property. These oils are quick-breaking emulsions, which means the oil separates, or "floats" to the surface in three to four minutes. Otherwise, you might spray concentrated blobs of oil solutions, which could injure the plants.

This overwintering Euonymous scale has been flipped out of her test or "shell." This stage is vulnerable to winter oil applications.

Tests have shown that fertilizer residue in the tank, when combined with the oil solution, can cause a synergism that increases the chances for plant injury. Make sure that the fertilizer residue is completely rinsed out of the tank before adding the oil solution.

When applied properly and for the appropriate pests, horticultural oil offers an opportunity to use a "soft" pesticide when we have time to make applications, as well as increase revenues during a slower time of the year.

Doug Caldwell is the Landscape Entomologist for the Davey Institute, a division of The Davey Tree Expert Company.
your good judgment
Will tell you to select

**turf type**
Tall Fescue seed from Oregon

**the beauty**
of the blades

**the strength**
and durability

**the tolerance**
to drought & disease

**the quality!**

Look for the grown in Oregon label. It puts all others in a lower class. A lush, healthy, deep green turf is your reward for selecting superior seed. The world's leading turf grass breeders have been perfecting it for more than 20 years. The tough, vibrant turf will not only tolerate drought, but survive cold winters.

When you select Turf Type Tall Fescue seed from Oregon you can be sure you will enjoy your "good judgment" decision year after year.

Oregon Tall Fescue Commission
1193 Royvonne, Suite 11
Salem, OR 97302
503-585-1157
Identify and treat problems in palms before they become serious because the cost of producing and installing large specimen palms can be high.

By TIMOTHY K. BROSCHAT, Ph.D.

Palms are an important component of the landscape in areas having mild climates. They impart a distinctly tropical look that few other plants can provide. Unfortunately, because most palms have only a single terminal bud or growing point, diseases or physiological disorders that might merely weaken broadleaf trees are often fatal in palms.

1) Fusarium Wilt

One of the most serious diseases of Canary Island date palms in California, and more recently Florida, is Fusarium wilt. It is characterized by death of the leaflets on one side of an older leaf or the leaves on just one side of the crown. Symptoms typically begin on leaflets near the base of the leaf, progressing along one side of the leaf to its tip and back down the other side to its base. Once the majority of leaves in the canopy have died, the remaining green leaves will wilt and the bud will die. Unfortunately, there are no effective chemical controls for this disease and reducing the rate of spread to healthy palms is the best strategy.

Fusarium oxysporum f. sp. canariensis can survive for years in the soil and can readily infect new replacement palms. Similarly, transplanted field-grown palms from infested fields can spread this disease. However, the primary means of spread is via contaminated pruning tools.

Infected palms should only be trimmed once per year to minimize spread, and all tools used should be disinfected before moving on to the
next palm. Research at the University of Florida has shown that soaking tools for 10 minutes in 25% chlorine bleach, 50% isopropyl or denatured alcohol, or 25% Pine-Sol disinfectant are all effective in eliminating this fungus from pruning equipment. When pruning, avoid cutting into green leaf bases.

2) Lethal Yellowing

Lethal yellowing (LY) is one of the most serious diseases of palms in Florida, but it also occurs in the Brownsville, Texas area, and parts of Mexico, Central America and the Caribbean. This microbe is spread only by phloem-feeding insects such as the leafhopper, *Myndus crudus*. Approximately 30 species of palms are susceptible to LY.

Symptoms of LY in most coconut palms may begin with mid-canopy or older yellow leaves that drop down against the trunk, but in some species such as Christmas palm these collapsing older leaves may not show any yellowing. In Malayan Dwarf coconut palms, leaves appear wilted, with little or no yellowing evident. Blackening of the flowers and premature fruit drop are also characteristic symptoms of LY in coconut palms.

Lethal yellowing is best prevented by planting palms resistant to the disease, but it can be prevented in susceptible species by trunk injection with oxytetracycline. If the disease is diagnosed at a very early stage, antibiotic injection results in recovery for about half of the treated palms. Common palms known to be resistant to LY include paurotis palm (*Acoelorrhaphe wrightii*), pindo palm (*Butia capitata*), European fan palm (*Chamaerops humilis*), areca palm (*Dypsis lutescens*), thatch palms (*Coccolithrinax* and *Thrinax* spp.), royal palms (*Roystonea* spp.), sabal palms (*Sabal* spp.), queen palm (*Syagrus romanzoffiana*), and Washington palms (*Washingtonia* spp.).

3) Ganoderma Butt Rot

Ganoderma butt rot is probably the most devastating palm disease in the southeastern United States. Its range corresponds roughly with that of the sabal palm (*Sabal palmetto*) and extends from South Carolina to Florida. Although this disease has only been documented on about 40 or 50 species, it is believed that all palm species are probably susceptible.

Ganoderma butt rot is primarily a disease of mature palms in the landscape. Symptoms appear as wilting and death of the oldest leaves, but it gradually progresses up through the canopy until the bud is killed. Unfortunately, there is no chemical control for this fungus and fumigation of Ganoderma-infected stumps or root systems is not effective in eliminating this fungus.

One of the earliest and most diagnostic symptoms for this disease is the presence of the fungal fruiting structure (conk) on the lower portion of the trunk. These conks start out as small white lumps but quickly mature into brown woody brackets up to 1 foot across, releasing millions of spores capable of infecting dead palm wood or healthy palms some distance from the point of release. Although mechanical wounding of palm trunks increases the likelihood of infection, wounding is not necessary for infection to occur.

*Ganoderma zonatum*, the causal organism, can also spread through the soil, living on dead palm roots and wood. One of the most common means by which Ganoderma infects clumping palms is when mature canes of these palms are removed. The resulting dead stump is quickly invaded by Ganoderma spores. Once established on the stump, this disease invades and kills healthy living canes until the palm is killed.

Any palm tissue infected with *Ganoderma* should be hauled to a landfill or incinerated, but never chipped for mulch, as this has been shown to transmit the disease to healthy palms. Stumps remaining after palm removal should be dug out. Also, any new conks should be promptly and regularly removed to prevent the production of additional spores.

4) Potassium Deficiency

Potassium deficiency is probably the most widespread and serious nutrient deficiency of palms throughout the world. Palms have rather high requirements for potassium and since they often grow in highly leached, sandy or nutrient-poor soils, this element is deficient to some degree in virtually all palms in the landscape.

Deficiency symptoms vary among palm species, but usually begin with small
translucent yellow to orange or necrotic spotting on the oldest leaves, readily visible if the leaf is held up to the light. As symptoms progress, these older leaves may take on a yellow-orange to bronze color that is visible from some distance. One of the key symptoms on most species is the presence of necrosis along the margins of the leaflets of older leaves. As this becomes more severe, entire leaflet tips become withered or frizzled in appearance, yet upon close examination, the midrib of the leaf will remain alive, though perhaps discolored. The gray frizzled old leaves typically found on royal palms (Roystonea spp.) and the golden-orange foliage of areca palms (Dypsis lutescens) are common examples of potassium deficiency.

Potassium is considered a “mobile” element within plants. Under conditions of deficiency, potassium will be removed from older leaves and retranslocated up to newly expanding leaves where it will be incorporated. Thus, potassium deficiency symptoms are always most severe on the oldest leaves and decrease in severity in younger leaves. On a single older leaf, deficiency symptoms are most severe at the tip, but may be minimal near the base.

Since the palm removes potassium from older leaves in order to continue new growth, premature removal of discolored, symptomatic older leaves by landscapers results in potassium being removed from progressively younger leaves that were previously symptom-free. If this practice continues, the palm will quickly run out of old leaves from which to remove potassium for new growth and the palm then enters a state of rapid decline. At this point, the trunk diameter tapers to a point, all new leaves emerge stunted, chlorotic and frizzled and death of the bud soon follows. This late stage of deficiency is extremely similar in appearance to manganese deficiency and only close examination of the symptoms of an individual leaf will reveal which problem is present.

In addition to poor soils, one of the primary causes of potassium deficiency in palms is the use of fertilizers having high nitrogen content in controlled release form, but low to moderate levels of potassium in soluble form. This combination forces rapid palm growth, yet provides insufficient potassium to do so. Thus, the use of turf fertilizers in the vicinity of palm roots is a major cause of deficiency in palms.

Treat severe deficiency by broadcasting sulfur-coated potassium sulfate under the canopy at a rate of 1.5 lbs. per 100 sq. ft, every three months for a year or more. To prevent a K-Mg imbalance from occurring under these circumstances, it is also necessary to apply a 100% coated palm maintenance fertilizer at the same rate and frequency starting six weeks after the first potassium fertilizer application. (Mild to moderate potassium deficiency can usually be corrected by using only the maintenance fertilizer.) A good palm maintenance fertilizer should have an N-P-K-Mg ratio of about 2-1-3-1 and also contain essential micronutrients such as Mn, Fe, Cu, B and Zn. In order to prevent rapid leaching loss, all N, K and Mg should be in controlled release form.

**Injecting Palms Made Easy**

For many years, arborists have faced numerous palm tree problems: nutritional deficiencies, borers and lethal palm yellows, to name a few. Recently, many professionals have turned to chemotherapeutant treatments. Many in the industry are using one of the many microinjection technologies that are available.

One problem in treatment exists, however, and this stems from the difference between the anatomy of palms and all other trees. Palm trees are monocotyledons. This fact makes them more closely related to grasses than to other types of trees.

The configuration of the vascular tissue is unlike that of any other type of tree. Instead of a ring of conductive tissue under the bark, the vascular tissues of palms are made up of tight groups of conductive cells known as bundles. These bundles contain both xylem and phloem tissue and are connected radially to other bundles by live and woody, non-cambial structures. Because of this vascular tissue orientation, palm trees translocate fairly evenly throughout their entire cross-section at any given point up or down the trunk.

When you need to microinject a palm, you must take into account:

- height of the palm tree when calculating the dose of the chemotherapeutant;
- diameter of the microinjection holes to be as small as possible;
- microinjection feeder tube to be long enough to allow the material to penetrate the spongy outer husk of the palm tree;
- injection holes of palms to be made to a depth of up to 1/3 the diameter of the palm tree;
- injection sites to be made no lower on the trunk than 2 feet above the ground;
- spacing of injection holes to be made as far apart as possible;

*cont. on page 76*
Spring is one of the BEST TIMES to effectively treat many tree problems. MAUGET offers a “pharmacy” of plant health care products for its time proven closed micro-injection system. In minutes following application, MAUGET's active ingredients become part of the tree’s natural transport system.

That's one reason MAUGET products have been the choice micro-injection system for tree care professionals for over 40 years. MAUGET continues to be the standard for micro-injection tree care.

SPRING TREATMENTS THAT PROVIDE YEAR LONG BENEFITS INCLUDE:

Insecticides, such as IMICIDE, containing Imidacloprid, the active ingredient found in MERIT® and ABACIDE, containing abamectin, provide full season control for a broad spectrum of insects including Bronze Birch Borer and Mites.

Fungicides, include FUNGISOL & CARBOJECT, which control or suppress over 31 destructive diseases.

TEBUJECT, the newest of MAUGET’s Fungicides control or suppresses 4 additional diseases including Crabapple Scab.

Fertilizers and Micro-Nutrients correct nutritional deficiencies & stimulate crown development. Combinations, such as IMISOL and ABASOL, two powerful newproducts. In one single application they control a variety of insects, including Bronze Birch Borer and Mites and over 31 tree diseases. IMICIDE and ABACIDE, have each been formulated with FUNGISOL. These two unique combination products are only available in the MAUGET micro-injection system.

Antibiotics include MYCOJECT, containing oxytetracycline, suppress many bacterial diseases such as PALM LETHAL YELLOWS, Ash Yellows, Leaf Scorchers of Oak & Elm and Fire Blight and Peach X.

See how your PALM TREES CAN BENEFIT USING MAUGET MICRO-INJECTION TREATMENTS

800• TREES-Rx  800•873•3779
800• TREES-Rx (New Toll Free Tech. Support) 800•873•3779
www.mauget.com

Circle No. 140 on Reader Inquiry Card
cont. from page 74

- spacing to also include offsetting of the vertical alignment, resulting in a spiral type placement of the injection sites.

Unlike other trees, palm injection holes remain active for up to one year, allowing for multiple injections using the same hole. Palm injection holes do compartmentalize, but the holes do not callus over and it is possible to use an existing inactive site by drilling the hole deeper. However, the total depth of the hole should not exceed more than \( \frac{1}{3} \) the diameter of the trunk.

Remember: Because of the anatomical differences between palms and other trees, understand that what is good for other trees may be quite bad for palms.

Marty Shaw is a Certified Arborist, a Certified Nursery Professional and President of TIPCO, Inc. in Knoxville, TN. His email address is treeguru@treedoc.com and the website is www.treedoc.com.

5) Manganese Deficiency

Unlike potassium, Manganese is "im-mobile" within a palm, so deficiency symptoms occur on the youngest leaves. New leaves emerge chlorotic, with longitudinal necrotic streaks on the leaflets. As the deficiency progresses, most of the leaflets appear withered or frizzled and the entire leaf is greatly reduced in size. Leaflet frizzling symptoms are more severe at the base of the leaf than at the tip, the reverse of potassium deficiency patterns. If not promptly treated, the next leaf may emerge as only a necrotic petiole stub with death of the bud quickly following. Old leaves of Manganese-deficient palms will usually remain full-sized and green.

Manganese deficiency is usually caused by high soil pH, since manganese solubility decreases sharply with increasing pH. It can be treated by soil applications of manganese sulfate (TechMangam) every three months or so. Foliar sprays with the same product will also give good short-term results, but will require frequent re-applications if soil applications have not been made.

Timothy K. Broschat is Professor of Tropical Ornamental Horticulture at the University of Florida at Ft. Lauderdale.
Events

FEBRUARY

20-24 Western Canada Turfgrass Association Annual Conference & Show Penticton Trade and Convention Centre, Penticton, BC, Canada; 604/467-2564; fax 604/467-0500

20-24 ALCA Executive Forum Weston Mission Hills, Rancho Mirage, CA; 800/395-2522; www.alca.org

22 NYSTA Southeast Regional Conference Holiday Inn, Suffern, NY; 800/873-8873; fax 518/783-1258

23-25 Athletic Field Construction & Maintenance Rutgers’ Cook College Office of Continuing Professional Education, NY; 732/932-9271; www.aesop.rutgers.edu ocpe

23-25 Western Pennsylvania Turf Conference & Trade Show Pittsburgh Expo Mart; Monroeville, PA; 814/863-3475; www.psu.edu

24-27 OPEDA Annual Meeting Caesar’s Palace, Las Vegas, NV; Julie Thane, 215/564-3484; 215/564-2175; www.opeda.org

25 OSU Extension University Turf School Tom’s Country Place, Avon, OH; Charles Behnke, 440/322-0127

26 Ecology & the Managed Landscape Boxborough, MA; Cheryl Lowe, 508/877-630 x3401

MARCH

2-4 New England Regional Turfgrass Conference Rhode Island Convention Center, Providence, RI; 401/848-0004; www.nertf.org

4-7 Association of Professional Landscape Designers Winter Conference Ramada Plaza Hotel, San Francisco, CA; Jack Lagershausen, 312/201-0101; www.apld.com

9-12 ASCA Arboricultural Consulting Academy Rhode Island Hotel Viking, RI; ASCA 301/947-0483

11-12 Cemetery Grounds Maintenance

nance for the Millennium Melvior, Long Island, NY; Maria Cinque at 516/842-1009

18-21 ALCA Student Career Days University of Kentucky, Lexington, KY; Elise Lindsey, 703/736-9666

20-25 American Society of Golf Course Architects Annual Meeting Charleston, SC; Chad Ritterbush, 312/372-7097; www.golfdesign.org

22 Plant Health Care Seminar University of California Extension-Riverside; Jan Crump 909/787-5804, ext.1621; 909/787-2456; www.unex.ucr/hs/hs.html

23 Basic Turf Management Seminar University of California Extension-Riverside; Jan Crump 909/787-5804, ext.1621; 909/787-2456; www.unex.ucr/shs.html

© 1999 BlueBird International, Inc.
Karl Kisner has joined Agrevo as product manager for the company's new DeltaGard® brand of insecticides (pyrethroids) as well as its full line of products for the Green Industry. Kisner will focus on promoting the company's new DeltaGard® brand of insecticides (pyrethroids) as well as its full line of products for the Green Industry.

Barenbrug USA has appointed Bryan Muntz as turf salesman, responsible for sales of Barenbrug's professional turf products in the US market.

Becker-Underwood has acquired full ownership and control of Sprint and Sequestrene product lines from Novartis. Both brands use iron chelate products to correct soil and foliar iron deficiencies. Sprint is sold in the turf and ornamental markets, Sequestrene in citrus, agricultural and other specialty markets.

Century Rain Aid has purchased the turf irrigation division of Koonz Sprinkler Supply, a major New England distributor. This new acquisition will allow Century Rain Aid to provide service and supplies to irrigation professionals throughout the southeast coastal areas of New Jersey and Monmouth County, PA.

Dow AgroSciences has named Keith Roach as communications manager of Turf, Ornamental and Technical Products and Bruce Miehle as general manager. Tony Brown is the marketing manager for turf, ornamental and retail products.

EPCO Products, producer of the Zero-Leak Gold Plugs and Fittings, has appointed Roger Metz as sales manager of the Zero-Leak line.

Growth Products, "The Liquid Solutions Company," has a new website that has helpful tips, detailed product information and university studies of their products. www.growthproducts.com

Horizon and Automatic Rain have announced the merger of the two companies, effective Jan. 1, 1999. The company will be headquartered in Phoenix, AZ, and will have locations in Arizona, Nevada, northern California, Oregon, Washington and Mexico.

HCC, Inc. has received ISO 9001 certification for design production and service from American Quality Assessors. HCC has spent the last two years establishing the ISO 9001 Quality System and plans to continue to improve quality.

MacKissic has appointed Newton Distributing Company to cover Kentucky and western Tennessee as a full-service distributor.

Milliken Chemical has entered into an agreement to acquire the existing products and brands of Emerald Isle, Ltd. of Ann Arbor, Michigan, and into a long-term agreement to co-develop new products for the turf and ornamental market.

PBI/Gordon has been issued marketing rights to Velocity® Insecticide by Valent. The fire ant product will be marketed through PBI/Gordon’s farm store brands.

Plant Health Care, Inc. has established the PHC™ Education Center in Beaufort, SC. The facility is dedicated to the practical understanding of the physical, chemical and biological requirements of plants in urban landscapes and other man-made environments. Four to six workshops will be held yearly.

Shindaiwa has named Carmelo Grenier as its new Western Regional Sales manager for the western states and Bertil Albing as the Technical Services Representative for the company. www.shindaiwa.com

The Textron Turf Care and Specialty Products facility at Johnson Creek, WI, has received registration to ISO 9001, the quality assurance standards developed by the International Organization of Standardization. The design, manufacture and distribution of products, such as Bob-Cat and Bunton mowers, fall under the umbrella of ISO 9001 registration. The registration is part of an ongoing plan by Textron to align its entire organization with international quality standards for all its products. LM
We'd like to show you the weeds PENDULUM® controls. But they never showed up.

The reason they never showed up? Because PENDULUM® herbicide is a highly effective preemergent turf herbicide.

Compared to the competition, PENDULUM demonstrates a higher level of control across a broader spectrum of weed species. With PENDULUM, weeds won't ever see the light of day.

For the PENDULUM herbicide distributor nearest you, call: 1-800-545-9525, Ext. 1676.

PENDULUM offers unsurpassed weed control

<table>
<thead>
<tr>
<th>Herbicide</th>
<th>Crabgrass</th>
<th>Goosegrass</th>
<th>Foxtail</th>
<th>Poa Annua</th>
<th>Oxalis</th>
<th>Spurge</th>
<th>Henbit</th>
<th>Chickweed</th>
</tr>
</thead>
<tbody>
<tr>
<td>PENDULUM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barricade*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimension*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Team*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ronstar**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surflan**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Level of control
- **Medium**
- **Medium-High**
- **High**
- **NR Not registered**

---

CYANAMID

© Registered Trademark, American Cyanamid Company © 1998 Always read and follow label directions.

The Power of Cyanamid Pendimethalin

Circle No. 106 on Reader Inquiry Card
ANNOUNCING: The Third Annual LANDSCAPE MANAGEMENT “Emerald Awards.” LANDSCAPE MANAGEMENT magazine is offering a $500 first prize to the winner of a random drawing to be held on July 1, 1999. Second prize is $300 and third prize is $200 in cash. To be eligible for the drawing, simply fill out the questionnaire at right and return it to our editorial offices.

Answers to the questions will determine our “1999 Emerald Awards” winners, to be revealed—along with the contest winner—in our August issue.

CONTEST REQUIREMENTS: Contestants must be owners or employees of landscape maintenance companies, lawn care companies or landscape contracting firms; or an athletic field manager or member of an athletic field maintenance crew; or manager or member of a facility landscape management crew. Product selections must be currently used by entrant. Employees of Advanstar Communications or their families not eligible.

All questions on this entry form must be completed, and all blanks filled. One entry per person. No more than five entries from any one employer will be allowed. Entry forms will appear in the February through June, 1999 issues of LANDSCAPE MANAGEMENT.

Completed questionnaires should be mailed to: Emerald Awards, LANDSCAPE MANAGEMENT, 7500 Old Oak Blvd., Cleveland, OH 44130. They must be received by noon, July 1, 1999. A random drawing of all eligible entry forms will be held July 1, 1999. Winners will be notified within 24 hours.
February 1999

This card is void after April 15, 1999

I would like to receive (continue receiving) LANDSCAPE MANAGEMENT free each month: O Yes O No

Signature: Date:

1. My primary business at this location is: (fill in ONE only)

2. Which of the following best describes your title? (fill in ONE only)

3. SERVICES PERFORMED (fill in ALL that apply)

4. Do you specify, purchase or influence the selection of landscape products?

5. Do you have Internet Access? O Yes O No

6a. If yes, how often do you use it?

6b. If yes, check which products you buy or specify: (fill in ALL that apply)

7. Which of the following best describes your title? (fill in ONE only)

8. If so, how often do you use it?

9. Which of the following best describes your title? (fill in ONE only)

10. Which of the following best describes your title? (fill in ONE only)

11. Which of the following best describes your title? (fill in ONE only)

12. Which of the following best describes your title? (fill in ONE only)

BUSINESS REPLY MAIL
FIRST-CLASS MAIL PERMIT NO 950 PITTSFIELD MA
POSTAGE WILL BE PAID BY ADDRESSEE

LANDSCAPE manage

ADVANSTAR COMMUNICATIONS INC
PO BOX 5054
PITTSFIELD MA 01203-9697

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES
## February 1999

This card is void after April 15, 1999

I would like to receive (continue receiving) LANDSCAPE MANAGEMENT free each month: O Yes O no

Signature: Date:

### Fill in ovals as shown: O

1. My primary business at this location is: (fill in ONE only)

2. Which of the following best describes your title? (fill in ONE only)

3. SERVICES PERFORMED (fill in ALL that apply)

4. Do you specify, purchase or influence the selection of landscape products? O Yes O no

5. Do you have Internet Access? O Yes O no

6. If yes, check which products you buy or specify: (fill in ALL that apply)

### SUPPLIERS AND CONSULTANTS

### INSTITUTIONAL FACILITIES

### CONTRACTORS/SERVICE COMPANIES

### SPECIALTY SERVICES

### SERVICES PERFORMED (fill in ALL that apply)

### Fill in ovals as shown: O

### Signature: Date:
The Spade, you can dig it

The Spade is a reasonably priced, versatile attachment for any brand skid loader. This unique, patented design is ideal for a variety of tasks. Digging trenches for drain pipe installation or irrigation, transplanting trees and shrubs and even retaining wall construction are all within the ability of this simple attachment. The boom-like design and chain attachment also allows easy unloading of planting stock from trailer to planting site.

For more information contact Triple D Enterprises at 800/478-7077 or Circle No. 265

EZ dispensing systems

CCI Products, Inc. introduces a family of products for the small equipment, power tool industry. The EZ Oilier and EZ Pumper containers measure and meter two cycle oil/gas ratios using a patented ratio/ounce dial and pumping system for no math and no mess. Crankcases and gas tanks are filled with exact amounts from 2/10ths to 6 oz. The one-gallon containers also have a dial lock and a 24-inch extendible spout add to the ease of use. The EZ Pumper is also able to drain fluids and is good for specialty additives.

For more information contact Sharon Suffolk, CCI Products, Inc., at 248/486-6901, fax 248/486-6945, email ccipro@aol.com or Circle No. 266

Animal repellent from Sweden

Plantskydd™ is a Swedish-made, 100% natural, non-toxic animal repellent that offers up to six months of protection against browse damage. Made from specially processed edible animal protein, vegetable fats, salt and water, animals avoid plants before they bite, not after. Plantskydd repels deer, elk, moose, rabbits and possum with an odor which is not offensive to humans.

Plantskydd is available in 2.2 lb. dry powder packages which is combined with 1.5 gallons of water. The solution is applied by dipping the plant in or spraying, and it will stick, even under severe snow/rainfall conditions, for six-plus months over winter or four-plus months with a spring or summer application. Also available in a premixed 1-L spray bottle.

Forest companies, nurseries and landscapers find Plantskydd to be effective for trees, flowers and shrubs. For more information contact Claude Boisvert, Tree World, at 800/252-6051, fax 604/885-3535, email tree-world@sunshine.net or Circle No. 268

Distance® Fire Ant Bait

Valent introduces this newly approved fire ant bait that stops the queen from reproducing. When Distance is applied around the fire ant mound, workers take the bait granules back to the colony where the queen and immature ant feed. Degeneration of the reproductive organs causes sterility in the queen and developing ants. Within three to four weeks there is substantial colony mortality and within eight weeks the majority of the colony has been eliminated.

Suitable for a variety of locations, application can begin in early spring or summer at the first sign of fire ant activity. Distance works best as a broadcast treatment but can also be used as a mound treatment.

For more information contact Valent at 800/89-VALENT, on the web at www.valent.com or

Circle No. 267
Biofertilizer products from PHC

Plant Health Care, Inc. (PHC, Inc.) introduces Healthy Start™ biofertilizer planting tablets. The 12-8-8 macro tablets contain spores of nitrogen-fixing and phosphorus-solubilizing bacteria together with a blend of slow-release nitroform fertilizer, natural organic nutrients and humic acid to enrich the soil and promote healthy, consistent plant growth. They will not burn or damage tender plant roots. Healthy Start tablets can be used in existing landscapes, on balled-and-burlapped, bareroot and containerized plants and on seedlings, and are available in 21-, 7- and 3-gram sizes that last up to two years.

BioPak and BioPak FE biostimulant products with beneficial bacteria are specifically designed to stimulate root growth and reduce stress on trees, shrubs and ornamental plants. They were developed to provide the beneficial bacteria, humic acids, amino acids, vitamins and sugars naturally found in healthy soil ecosystems. BioPak improves water and nutrient uptake and stimulates beneficial microbial activity in the soil. BioPak FE is specifically recommended for lawns, trees and shrubs which display iron deficiencies, with 10% chelated iron.

For more information, contact PHC at 800/421-9051, fax 412/826-5445 or Circle No. 269

Biostimulants from PBI/Gordon

Two new biostimulant products are now available: Focus®, formulated to enhance the vigor and stress tolerance of turf exposed to intensive use or maintained at a high quality level; and Launch®, for application where seeding, sodding or sprigging are used to establish or renovate turf.

Focus contains cytokinins and auxins from cold water kelp, humic and fulvic acids, triple-chelated iron and organo-modified siloxane surfactant. Launch is a manure-based product with the same biostimulants ingredients as Focus.

For more information call PBI/Gordon at 800/821-7925 or Circle No. 270

Update your older skid steer loader

The "Uni-Hitch" Hitching System from Kasco allows "universal hitch" attachments to be used on older Case, Gehl, John Deere, Mustang and New Holland skid steers. The original attaching plates stay in place so that the original attachments can still be used.

For more information contact Kasco Manufacturing Company at 800/458-9129, on the web at www.kascomfg.com or Circle No. 271

Growth Products for plant growth

A variety of choices for crystalline liquid fertilizers from Growth Products, Ltd., includes recent introductions:

• Starter Plus 8-32-5 (with 50% Slow Release Nitrogen), a high phosphorus solution, ideal for newly seeded areas and for hydroseeding.
• All Season K 8-4-24 (with 50% Slow Release Nitrogen and 0.25% Iron) is formulated for year-round fertilization and provides a high potassium to nitrogen ratio, immediately available for uptake, and is good for problem turf areas.
• Organic Iron 5% (Sugar Acid Chelate) is derived from a naturally fermented chelation process, is extremely stable and more effective than EDTA in higher pH soils.
• pH Reducer (citric acid solution with wetting agent) is for soil and water applications where the pH needs to be lowered to an acidic range, is natural and environmentally and has no adverse effects on microflora.

For more information call 800/648-7626, fax 914/428-2780, email PRInquiry@GrowthProducts.com or Circle No. 272
Everywhere You Look - There We Are!

Ranked Among the Best Franchise Opportunities in America!

- Proven Leaders in the Lawn Care Industry
- 17 year Track Record of Successes
- In-depth Training
- Exclusive Territory
- Extensive Support

Call Roger Albrecht at: 1-800-982-5296

Circle No. 127

Circle No. 128

I earn 78% more with a FINN HydroSeeder®

Brian Kerber, The Lawn Firm, Excelsior, MN

"I bought my first hydromulching machine for price. But it's a toy compared to my new FINN HydroSeeder. I've easily doubled my production."

No other machine compares to a FINN HydroSeeder for high production and long trouble-free service life. You'll get faster loading, better coverage, longer spray distance, and more reliable performance. You can get a real HydroSeeder for as little as $149 a month. You'll soon know why the most successful contractors agree, "Nothing makes money like a FINN HydroSeeder." Call today.

Circle No. 129

Circle No. 130

The PV-II is the #1 selling slide-in sweeper in America. More sweeping professionals prefer the PV-II than any other slide-in model on the market. But don’t take our word for it. Ask our competitors.

- Slide In Design
- Polyethylene Construction
- Rust Free Hopper

$13,900.00 + TAX/DELIVERY

1-888-922-8224

Circle No. 129

Circle No. 130

"I earned 78% more with a FINN HydroSeeder®"

Brian Kerber, The Lawn Firm, Excelsior, MN

"I bought my first hydromulching machine for price. But it's a toy compared to my new FINN HydroSeeder. I've easily doubled my production."

No other machine compares to a FINN HydroSeeder for high production and long trouble-free service life. You'll get faster loading, better coverage, longer spray distance, and more reliable performance. You can get a real HydroSeeder for as little as $149 a month. You'll soon know why the most successful contractors agree, "Nothing makes money like a FINN HydroSeeder." Call today.

Circle No. 128

Circle No. 130

The PV-II is the #1 selling slide-in sweeper in America. More sweeping professionals prefer the PV-II than any other slide-in model on the market. But don’t take our word for it. Ask our competitors.

- Slide In Design
- Polyethylene Construction
- Rust Free Hopper

$13,900.00 + TAX/DELIVERY

1-888-922-8224

Circle No. 129

Circle No. 130

"I earned 78% more with a FINN HydroSeeder®"

Brian Kerber, The Lawn Firm, Excelsior, MN

"I bought my first hydromulching machine for price. But it's a toy compared to my new FINN HydroSeeder. I've easily doubled my production."

No other machine compares to a FINN HydroSeeder for high production and long trouble-free service life. You'll get faster loading, better coverage, longer spray distance, and more reliable performance. You can get a real HydroSeeder for as little as $149 a month. You'll soon know why the most successful contractors agree, "Nothing makes money like a FINN HydroSeeder." Call today.

Circle No. 128

Circle No. 130

The PV-II is the #1 selling slide-in sweeper in America. More sweeping professionals prefer the PV-II than any other slide-in model on the market. But don’t take our word for it. Ask our competitors.

- Slide In Design
- Polyethylene Construction
- Rust Free Hopper

$13,900.00 + TAX/DELIVERY

1-888-922-8224

Circle No. 129

Circle No. 130

"I earned 78% more with a FINN HydroSeeder®"

Brian Kerber, The Lawn Firm, Excelsior, MN

"I bought my first hydromulching machine for price. But it's a toy compared to my new FINN HydroSeeder. I've easily doubled my production."

No other machine compares to a FINN HydroSeeder for high production and long trouble-free service life. You'll get faster loading, better coverage, longer spray distance, and more reliable performance. You can get a real HydroSeeder for as little as $149 a month. You'll soon know why the most successful contractors agree, "Nothing makes money like a FINN HydroSeeder." Call today.

Circle No. 128

Circle No. 130

The PV-II is the #1 selling slide-in sweeper in America. More sweeping professionals prefer the PV-II than any other slide-in model on the market. But don’t take our word for it. Ask our competitors.

- Slide In Design
- Polyethylene Construction
- Rust Free Hopper

$13,900.00 + TAX/DELIVERY

1-888-922-8224

Circle No. 129

Circle No. 130

"I earned 78% more with a FINN HydroSeeder®"

Brian Kerber, The Lawn Firm, Excelsior, MN

"I bought my first hydromulching machine for price. But it's a toy compared to my new FINN HydroSeeder. I've easily doubled my production."

No other machine compares to a FINN HydroSeeder for high production and long trouble-free service life. You'll get faster loading, better coverage, longer spray distance, and more reliable performance. You can get a real HydroSeeder for as little as $149 a month. You'll soon know why the most successful contractors agree, "Nothing makes money like a FINN HydroSeeder." Call today.

Circle No. 128
No other product beats the durability and design flexibility of VERSA-LOK solid retaining wall units. No exceptions. Only VERSA-LOK, with its unique pinning system, permits construction of an unlimited variety of curves, corners, and steps without specification of special units.

Call (800) 770-4525 for FREE Design & Installation Guidelines.

VERSA-LOK Retaining Wall Systems
Oakdale, MN • (800) 770-4525 • www.versa-lok.com

Poke holes, make money

When it comes to aeration, Millcreek gives you more choices, faster delivery, and more ways to help you promote your aeration business.

Models to Fit Your Equipment With so many models to choose from, you’ll find a Millcreek aerator to fit your existing equipment.

Rugged Construction Millcreek Aerators are no-nonsense workhorses that get the job done and keep on working and earning.

Affordable Prices You won’t find more competitive pricing anywhere in the market.

Guaranteed Fast Delivery Order by 1PM Eastern time, your aerator shipped next business day or we pay the freight.

Free Offer Call today. We’ll send you a FREE “Aeration for Profit” kit, with ad slick and reproducible handout flyer.

The Planet Air aerator, with its patented planetary motion and unique coring tine design, relieves the hard pan effect. The 12 tines penetrate the earth to depth of 4 inches with a span of 48 inches wide. The tractor’s forward speed determines hole spacing, making the Planet Air highly productive with low PTO horsepower requirement. Clean up is minimal due to its pulverizing capability.

Planet Air Specifications:
- Aerating Depth: Up to 4" Inches Deep
- Aerating Width: 48 Inches Wide
- Aerating Hole Pattern: Straight Rows With Holes Spaced at 4" Inches Apart
- Aerating Speed: 2.5 to 5 MPH
- Aerating Rate: Up to 105,000 Sq. Ft. Per Hour
- Transport Speed: Tractors road Speed
- Drive Type: 540 PTO Drive

Planet Air Aerator (by Bjorge Manufacturing, Inc.)
Austin, MN 55912
Office Phone/Fax: 507-437-7796
David: 507-433-7588 • Scott: 507-455-0073
Patent registered to Bjorge Manufacturing Inc.

AD INDEX

129 AA-Tech, Inc. 85
106 American Cyanamid 79
128 American Cyanamid 41(reg) 124
117 American Honda Power Equipment 53
118 Bayer 24-25
124 Bjorge Mfg, Inc. 86
125 Bluebird International 77
119 Dow Agrosciences 20-21
130 Earth and Turf 88
105 Echo, Inc. 4-5
138 Finn Corp 85
108 FMC Specialty Products 56-57
112 GMC, Truck 8-11
112 Grasshopper 17
113 Howard Price Turf Equipment 55
140 J J Maugel 75
109 John Buhler, Inc. 79
110 John Deere 43-48
130 Kubota Tractor Corp 34
102 LESCO (American Cyanamid) CV2-1
115 LESCO, Inc. 15
114 Melroe Bobcat 13
133 Millcreek 86
116 New England Turfgrass Assoc 77
128 Nissan Diesel 59
127 Nitro-Green Corp 88
110 Oregon Tall Fescue Commission 85
101 PBI Gordon 26-27
116 Plant Health Care 26-27
107 Rextus 7
122 Rhone Poulenc 64-65(reg)
199 Rohm & Haas 36-37
124 SNG 70
104 Turf-Seed, Inc. CV4
120 Trifoil 40
131 Versa-Lok Retaining Wall System 86
125 Walker Mfg 29
123 Yazoo Kees Mfg 63

This index is provided as an additional service. The publisher does not assume any liability for errors or omissions.
Every month the Market Showcase offers readers of Landscape Management a complete and up-to-date section of the products and services you're looking for. Check it out every month, or you might miss out. For all ads under $250, payment must be received by the classified closing date. VISA, MASTERCARD, & AMERICAN EXPRESS accepted. Send to: Advanstar Marketing Services, 7500 Old Oak Blvd., Cleveland, OH 44130

BUSINESS OPPORTUNITIES

WHY DO NATURALawn OF AMERICA FRANCHISES GENERATE REVENUES IN THE TOP 12% OF THE GREEN INDUSTRY?

• Proven Marketing Provides Accelerated Growth
• Large Exclusive Territories Eliminates Competition
• Differentiate Yourself Using Organic-Based Fertilizers
• Customized Agronomy Programs Based On Your Market
• Industry Leading Training For You and Your Employees
• With up to 50% financing and discounted franchise fees for qualified candidates, we can make it easy for you to join the leader in organic-based lawn care.

To learn more about becoming a NaturalLawn of America franchise owner, call 1-800-326-9221 or contact us at www.nlamerica.com

"DESIGN TO SELL" 2nd Edition: A Complete Guide to Designing And Selling Landscape Projects

Design To Sell will show you the process of obtaining construction accounts, preparing a landscape plan, and submitting a winning estimate. Newly revised version now available. Send $24.95 Check or Money Order To: CLD DESIGN
PO BOX 128
North Andover, MA 01845
Money Back Guarantee
Shipping & Handling Included

EDUCATIONAL OPPORTUNITIES

TRAIN AT HOME for an exciting hobby or profitable career. Start your own spare or full time contracting business, work in the garden/nursery field or landscape your own property - we show you how. Diploma awarded. FREE BROCHURE describes opportunities. No salesman, ever.
Write or call today! 1-800-326-9221
Lifetime Career Schools, Dept. 10
101 Harrison St., Archbold, OH 43502
Accredited Member, Distance Education & Training Council

ENHANCE ...

...your good reputation by selling and installing CASTART™ rock waterfalls. Rock waterfalls appeal to customers who demand the best. CASTART building-block systems allow you to install Mother Nature's finest looking waterfeatures and landscaping rocks . . . often in less than a day. No crane, backhoe or heavy equipment is needed. With a CASTART franchise you benefit from top-of-the-line products, a protected territory, two weeks of training and much more. www.castartinc.com
800-871-8838

ENSCHEN A LCTEL

ELECTRONIC OPPORTUNITIES

SPANISH for the Green Industry
Workbook • Audiotape • Flash Cards
800-491-0391

FOR SALE

Tire Changers For Small Wheels
Grounds Maintenance Equipment
www.wikco.com
Or Call 800-872-8864
WIKCO INDUSTRIES, INC.
4930 N 57th St., Lincoln, NE 68507

Applicator's Friend's™ shields:

Our "Applicator's Friend Shield" are specifically designed to protect the applicator from the dust generated while applying granular pesticide control products.
Available for Lesco and Scotts commercial speakers.

Riverside Gardens
420 Old Mill Road, Vestal, NY 13850
1-800-595-2774 • E-Mail: apfriend@epix.net

FOR SALE

LANDSCAPE DESIGN KIT 3
48 rubber stamp symbols of trees, shrubs, plants & more. 1/8" scale. Stamp sizes from 1/4" to 1 3/4". $78.50 net. 66 ct. VISA, MasterCard, or MC's shipped next day. Cheques delayed shipment 3 weeks. CA add 7 75% Tax
AMERICAN STAMP CO.
12209 Ring Rd., Upland, CA 91786

CHRISTMAS DECORATING SEMINARS

Especially designed "EARLY-SEASON" for Exterior Landscape Contractors! FBI & SAT, MARCH 19, 20, 1999
Call Kathy Johnson at (412)281-6352 Fax(412)281-4775

FOR SALE

MISCELLANEOUS

Christmas Seminars '99
CHRISTMAS DECORATING SEMINARS
Especially designed "EARLY-SEASON" for Exterior Landscape Contractors!
TWO DAY CRAM COURSE:
FRI. & SAT., MARCH 19, 20, 1999
Call Kathy Johnson at (412)287-4775

SAVE!

1994 GMC Cabover • Several to Choose • 14,000 GVW, auto, turbo diesel, 25 gal. per min Warner pump, dry storage, 600 gal. tank, (2) 100 gal. drop tanks, dual reels, low mileage, well maintained! Replacement new $38,000 Asking $19,500

1999 Hann Riding Turf Sprayer Spreader Low hrs., 250 gal. tank, booms. New $15,000 - Asking $9,950
561-776-6216 • Fax 561-776-6218

FLEET SALE - LAWN TRUCKS

NEW! UHF 460 • VHF 150 • Low Band
Programmed To YOUR System! (Compatible w/Other Systems)
"Talk to anybody from anywhere on the course or job"
Hand Heted from $155.00
Mobiles from $278.00
Full Year Warranty-
CALL 800-231-1013

$7,523 from $278.00
40 X 60 X 12
Build It Yourself And Save 10
take 10,000 Sizes, All Bolt-Together All Steel Buildings. Call Today For A Price Quote And A Brochure.
HERITAGE BUILDING SYSTEMS
800-643-5555
www.metalbidg.com
HELP WANTED

LANDSCAPE MAINTENANCE SUPERVISORS
An established landscape maintenance company seeks experienced Supervisors in the Memphis, TN area to begin work in March or April 1999.
Qualifications include:
Three (3) or more years experience supervising landscape maintenance personnel, knowledge of all phases of commercial and residential landscape maintenance including chemicals, pesticide applicators license, great motivational and organizational skills. Excellent salary and benefits.
Fax resume to (901)754-4554 by 03/31/99
Your reply will be kept confidential.

LANDSCAPE MAINTENANCE MANAGER
Established residential design/build landscape company on Long Island's South Fork seeks an experienced manager to develop a new full service maintenance division. Candidates must possess strong communication -ion and organizational skills, ability to train and supervise others, be self motivated and committed to integrity and professionalism. Experience with organic management principles and mechanical ability a plus. Minimum of 3-5 years in similar position necessary. We offer an attractive salary/benefits package, a comfortable working atmosphere and an opportunity to develop a rewarding career. Mail or fax resume to:
LANDSCAPE ASSOCIATES LTD.
P.O. Box 2324 East Hampton, NY 11937
Fax: (516)329-5147

LANDSCAPE/IIRRIGATION FOREMAN/IIRRIGATION CONSTRUCTION FOREMAN
Fast paced Design-Build Firm needs Landscape/Irrigation Foreman to install high end residential projects. Year round employment, salary plus bonus & benefits. Minimum 3 years related experience. Must have references, be fast, motivated & well organized. Charlotte, N.C.
(704)598-2266. 3/99

FLORAPERSONNEL, INC. In our second decade of performing confidential key employee searches for the landscape/horticulture industry and allied trades worldwide. Retained basis only. Candidate contact -ion, confidentiality, and willingness to move preferred. Send resume to: Jacobsen Landscape Design and Construction, 1740 Lake Markham Road, Sanford, FL 32771. PHONE (407)320-8177. FAX (407)320-8083. Email: Hortsearch@aol.com. Website: http://www.florapersonnel.com. 12/99

GREENSEARCH—Attention Employers—can't find good managers and supervisors? Or maybe you're a job seeker looking for a new opportunity? We can help you! Serving Green Industry company categories throughout the United States. Candidates pay no fee. Complete an on line application @ www.greensearch.com or call toll-free 1-888-375-7778. Fax: (770)392-1772. GreenSearch, 6690 Roswell Road, #310-157, Atlanta, Georgia 30328-3161. 11/99

DEPARTMENT MANAGER - CONSTRUCTION AND MAINTENANCE: Full-service design-build firm located in Northeast New Jersey seeks dynamic self-starter to oversee landscape department and sell and manage construction projects. Require a growth-oriented, team player with three to five years landscape sales/management/produc tion experience. Excellent salary, benefits and advancement opportunities. For immediate consideration please fax resumes to: natural@nl-amer.com. www.nl-amer.com. 2/99

LANDSCAPE/IIRRIGATION CONSTRUCTION FOREMAN/IIRRIGATION CONSTRUCTION SUPERVISOR
Krueger's Associated Landscape, a full service landscape contracting company servicing the beautiful Portland Metro area, is seeking additional key personnel. Qualified applicants should possess good communication skills, be customer service oriented, have knowledge of scheduling and planning projects, understand a financial statement, and have proven leadership and interpersonal skills. Bilingual preferred. Experience/education required. We offer excellent pay, full benefits and advancement opportunities. For immediate consideration please fax resumes to (503) 647-9861, or call (503) 647-1000. 2/99

YOUR RESPONSE TO THIS CLASSIFIED AD IS CONFIDENTIAL. Please place your ad today!

Place your ad today!
HELP WANTED

ESTIMATOR/PROJECT MANAGER  Large, fast growing Colorado landscape installation contractor seeking full-time estimator/project manager. Must have experience estimating irrigation and landscape installation projects. Knowledge of golf course development and landscape maintenance industry a plus. Computer skills necessary. Average contract size $600,000.00. Health insurance and profit sharing benefits included. Send salary requirements and resumes to Urban Farmer, Inc., 3232 S. Platte River Dr., Englewood, CO 80110 or call 888-643-3276.

LANDSCAPE FOREMAN  EASTERN LONG ISLAND LAWN & TREE CARE COMPANY SEEKING INDIVIDUALS WITH KNOWLEDGE OF TURF AND/OR TREES FOR HIGH-END CLIENTEL. EXPERIENCE WITH FRUIT TREES, ATHLETIC FIELDS, PUTTING, GROUNDS AND MEADOWS HELPING. SEND RESUME AND OPPORTUNITIES IN SON TO: PO BOX 10, AMAGANSETT, NY 11930 OR FAX TO 516-329-9798

BUSINESS FOR SALE

Commercial Landscape & Snowplowing firm in NYS suburban area. 20+ years established. Unlimited growth potential. Excellent reputation. Extensive list of quality equipment. Owner will assist with transition. Serious inquiries reply to "Accountant" PO Box 9396, Bardonia, NY 10954

LANDSCAPE CONSTRUCTION & MAINTENANCE CO.  WELL ESTABLISHED 15 YEAR COMPANY IN THE BOSTON, MA AREA. $2.5M TO $2.9M VOLUME ANNUAL, PAST 3 YEARS PROFITS HAVE BEEN IN THE SIX FIGURES. COMPANY BREAKDOWN, 70% CONSTRUCTION, 20% MAINTENANCE & 10% SNOW OPERATIONS. WELL RUN ORGANIZATION, AND WELL MAINTAINED FLEET. THE 1999 BACK LOG EXCEEDS $1M TO DATE. MAIL RESPONSES OF INTEREST WITH NAME AND FINANCIAL BACKGROUND TO: CORPORATE VENTURES 271 CANTON ST., STOUGHTON, MASS. 02072

EDUCATIONAL OPPORTUNITIES

NOW...Learn professional Landscaping and Gardening at home. Accredited program provides thorough training in all phases of commercial and residential landscaping. Diploma awarded. Free brochure describes program and opportunities in detail. Call 1-800-326-9221 or write Lifetime Career Schools, Dept: LF01Y2, 101 Harrison Street, Archbald, PA 18403.

FOR SALE

(2) 1996 WALKER MOWERS MODEL No. MT48HS7.0 (2) 48" MOWING DECKS, (2) 62" MOWING DECKS - 865 Hours on one and 1,079 Hours on the other. UPGRADE: 25 H.P. KOHLER ENGINE. OPTIONS: ARM RESTS, EXHAUST DEFLECTOR & LIGHTS. NOTE: BOTH MOWERS COMPLETELY OVERHAULED 1998. CONTACT: Edward A. Bayer or Heather L. Broadley at Telephone No. 412-635-9445 $6,500.00 Each Mower or Buy Both $12,000.00.

1987 FORD F-350 Spray Truck, 600 gallon stainless steel tank and plumbing (400/200 split), jet agitation, hose reel, Meyers 12C PTO driven two stage centrifugal pump. All output lines have hydraulic fittings. Extensions on hard to reach valves. Spreader mount. Ready for operation. $9,500. 215-721-2810 ask for Bob Williamson.

WANT TO BUY OR SELL A BUSINESS?

Professional Business Consultants can obtain purchase offers from numerous qualified potential buyers without disclosing your identity. There is no cost for this as Consultant's fee is paid by the buyer. This is a FREE APPRAISAL of your business.

If you are looking to grow or diversify through acquisition, I have companies available in Lawn Care, Grounds Maintenance, Pest Control, Landscape Installation and Interior Plant Care all over the U.S. and Canada.

P.B.C. 682 Phelps Ave., Lockport, IL 60446 708-744-6715 • Fax: 630-910-8100

FOR SALE

1987 FORD F-350 Spray Truck, 600 gallon stainless steel tank and plumbing (400/200 split), jet agitation, hose reel, Meyers 12C PTO driven two stage centrifugal pump. All output lines have hydraulic fittings. Extensions on hard to reach valves. Spreader mount. Ready for operation. $9,500. 215-721-2810 ask for Bob Williamson.
Dr. Pat Cobb takes new path
Dr. Pat Cobb retired in mid-January as Professor of Extension Entomology at Auburn University, Auburn, AL, but she probably won't be slowing down. Pat had been in the position for 21 years.

“I’ve had the best of all worlds,” Pat told LM a week before her retirement from Auburn, where she had also earned her masters and doctorate degrees. “I’ve gotten to teach some and get back into the classroom a little bit. I’ve gotten to research and I’ve gotten to do extension and the reason I’ve gotten to do that is because I didn’t have a research counterpart and I was afraid that I wouldn’t have something to tell folks.”

Dr. Cobb insisted she’s going to remain in the industry. In fact, most of her first month of retirement promised to be busy, including a stint helping out at Penn State University and a speaking engagement for the Florida Turfgrass Association.

“I’m a bug person and I want to get back to being an entomologist,” said Pat, who insisted she’s going to remain very active in the green industry—at least for a few more years.

GIE Emerald Awards Draw
Your votes really do count. The two days of the GIE Show in Nashville brought in a lot of entries for our Emerald Award choices for 1999. As promised, we drew one name for each day of the show, for a $150 prize. The winners are:
• Thomas Tarbox of Tarbox Landscaping, Yorktown, NY
• Kenny Sprague of Sprague’s Lawn Service, Inc. of Ligonier, IN.

Thanks to everyone for their votes. For those of you who weren’t at the show or didn’t fill out a ballot with your Emerald Award choices, check out the ballot on page 80 of LM and mail or fax it in.

We’re offering even more money — $500. You could be a winner too!

Grab Bag features brief observations and prognostications throughout the green industry. If you have an unusual photo or comment you’d like to share with us, please send it in...
New Trimec® Turf Ester Low Odor Broadleaf Herbicide combines the penetrating power of a low volatile ester with Gordon's exclusive low odor technology.

Trimec Turf Ester gives fast visual response on dandelions and other common target weeds, including over-wintering early-treatment targets such as chickweed and henbit. Trimec Turf Ester maximizes your spectrum of control to include the toughest weed control challenges like ground ivy, oxalis and spurge.

And there's no offensive odor to cause unnecessary concerns or phone calls!

1-800-821-7925
www.trimec.com

NEW TRIMEC® TURF ESTER
LOW ODOR
BROADLEAF HERBICIDE

Circle No.101 on Reader Inquiry Card

Always read and follow label directions.

© PBI/Gordon Corporation, 1999
TRIMEC® is a registered trademark of PBI/Gordon Corporation.
<table>
<thead>
<tr>
<th>Variety/Blend</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alliance Brand</td>
<td>Traffic, heat and drought tolerant / A blend of top quality Turf-Seed perennial ryegrasses</td>
</tr>
<tr>
<td>BrightStar II (2M3)</td>
<td>A top variety in the 1995 NTEP trials. A unique leafy, decumbent, late maturing cultivar</td>
</tr>
<tr>
<td>BrightStar</td>
<td>Tops 1994 NTEP ryegrass trials / Extremely dark color / Dwarf growth habit</td>
</tr>
<tr>
<td>Catalina</td>
<td>Low growth profile and reduced clippings / 78% endophyte / Tested as GH-94</td>
</tr>
<tr>
<td>Chaparral</td>
<td>Very dense, low-growing, dark green turf. Lowest vertical growth in turf. Tested as 2DLM</td>
</tr>
<tr>
<td>Charger</td>
<td>Good low fertility and cool weather performance / Improved disease resistance</td>
</tr>
<tr>
<td>Charger II</td>
<td>Dark, dense, dwarf turf ranks high in winter overseeding trials. Experimental code 2QM.</td>
</tr>
<tr>
<td>Citation III</td>
<td>Excellent heat and wear tolerance / Improved disease resistance / Rich, dark green color</td>
</tr>
<tr>
<td>Manhattan 3</td>
<td>Very dense growth habit / Rich color / Good mowing qualities / Contains endophyte</td>
</tr>
<tr>
<td>Navajo</td>
<td>Dark green, disease resistant turf / Excellent for overseeding / Good shade tolerance</td>
</tr>
<tr>
<td>Quickstart</td>
<td>Heat tolerant / Establishes quickly / Disease resistant / Excellent for overseeding</td>
</tr>
<tr>
<td>Roadrunner (2ET)</td>
<td>Dark blue-green color ideal for winter overseeding and permanent turf / Contains endophyte</td>
</tr>
<tr>
<td>Sunrye (246)</td>
<td>Dark green color / Dwarf growth habit / Contains endophyte / Disease resistant</td>
</tr>
</tbody>
</table>

Turf-Seed, Inc. uses the full recommended rate of Apron® XL™ LS seed treatment. Help your grass seed get a good, healthy start.