

# The Kawasaki 2520 Mule

**A** heavyweight investment deserves every ounce of protection you can muster. Enough power to move substantial loads comes courtesy of a big, 617 cc liquid-cooled V-Twin engine. You'll make fewer trips, too, because the Mule 2520's big, tilting cargo bed can carry up to 800 pounds per load. If that doesn't cut it, you can hook up a trailer and more than double your carrying power. And best of all, the Mule 2520 cruises over your turf on wide, turf-application tires, disturbing little more than the early-morning dew.



## Kawasaki



- Liquid-cooled, V-Twin engine
- Air intake system overhead
- 800 lb. capacity cargo bed, pick-up style
- Rack & pinion steering
- Sound-insulated and extra-quiet muffler
- Governed to 16 mph for safety
- Lock-out differential for minimum ground disturbance
- Full line of accessories available

Call Tim Commers today....

(612) 333-3487 or

Toll Free 1 (800) 759-5343



**CUSHMAN MOTOR CO., INC.** **CUSHMAN TURF-CARE EQUIPMENT**

2909 EAST FRANKLIN AVENUE • MINNEAPOLIS, MINNESOTA 55406 • (612) 333-3487 • FAX (612) 333-5903 • TOLL FREE 1-800-759-5343

# HOLE NOTES

Official Publication  
of the  
Minnesota Golf Course  
Superintendents' Association

## 2000 MGCSA Board of Directors

### Officers

President.....E. Paul Eckholm CGCS  
Heritage Links GC  
612/440-6494 Fax: 612/440-4655  
Vice President..Rick Fredericksen, CGCS  
Woodhill CC  
612/473-5811 Fax: 612/473-0113  
Secretary.....Mike Brower  
Hillcrest CC  
651/777-5186 Fax: 651/777-7463  
Treasurer.....Rob Panuska  
Waseca Lakeside Club  
507/837-5996 Fax: 507/835-3472  
Ex- Officio.....Tom Fischer, CGCS  
Edinburgh USA  
612/315-8582 Fax: 315-8585

### Directors

James Bade.....Somerset CC  
651/457-1161 Fax: 651/455-2282  
Michael Brual.....Faribault G & CC  
507/334-8101 Fax: 507/334-9653  
Kerry Glader.....Plaisted Companies, Inc.  
612/441-1100 Fax: 612/441-7782  
Jeff Johnson.....The Minikahda Club  
612/926-4167 Fax: 612/926-0602  
Tom Meier.....Worthington CC  
507/376-9250 Fax: 507/372-2597  
John Queensland.....Cedar River CC  
507/582-3595 Fax: 507/582-3133  
Steve Shumansky.....Perham Lakeside CC  
218/346-6071 Fax: 218/346-6079  
Bob Simondet.....Lesco, Inc.  
320/327-2929 Fax: 320/327-2929  
Richard Traver Jr., CGCS.....Monticello CC  
612/295-3323

### \*\*\*

Editor  
Steve Shumansky  
E-mail: [plcc@eot.com](mailto:plcc@eot.com)

### \*\*\*

### Editorial and Business Office:

Scott Turtinen, Executive Director  
Minnesota Golf Course  
Superintendents' Association  
240 Minnetonka Avenue South  
P.O. Box 617  
Wayzata, Minnesota 55391-1617  
Tel: 612/473-0557 Fax: 612/473-0576  
Toll Free: 1-800-642-7227  
E-mail: [scott@mgcsa.org](mailto:scott@mgcsa.org)  
Web Site: [mgcsa.org](http://mgcsa.org)



## *From Your President's Desk*

### 150 Members Attend March Mini-Seminar



The March mini seminar was a great success. We had about 150 of your fellow members there for the construction presentations. I would like to thank all of the speakers who took the time to prepare a presentation for us. Also included in the seminar was a presentation by Sandy Queen, CGCS from the GCSAA, about the proposed PDI issue. About 75 people listened to the speech and about 50 participated in the discussion afterwards. Mr. Queen felt that the final form of this controversial proposal will be different from how it looks today. I certainly hope so or I, for one, will not support it.

\* \* \* \*

**In my last letter to you I mentioned the proposed legislation** to ban the use of Phosphorous in the Metro Area. After two days of lobbying and then two days of testimony before the Senate and House agricultural committees, I was able to get the bill laid over to next session. What this means is that the issue is not dead but only postponed until next session. We have been directed by the committees to work with the Department of Ag to try to come up with a bill that we will be able to get behind. In my mind that means that we will be trying to get golf courses removed from the legislation. If you have any other thoughts, please feel free to contact me and we can discuss the issue. I need to take this opportunity to thank the MGA for all of their help with this issue. They were kind enough to have their lobbyist lead me around the legislature and put me in contact with the people we needed to see. This help was invaluable to our efforts. Thanks!!

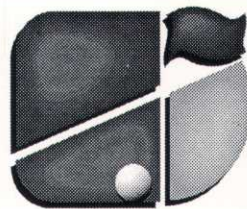
\* \* \* \*

**The arrangements committee is having trouble finding sites** for the monthly meetings as well as the golf events. If you are willing to have your course host an event, please call Tom Meier and let him know that you want to host an event. Days of the week are now flexible so please see if you can help out the association. We don't ask you to do it more than once every ten years or so.

\* \* \* \*

**Please plan on attending the April meeting in River Falls.** Dr. Powell will be giving us a presentation and I am sure that Dan Swenson will have the course in great shape. Hope to see you there.

- E. Paul Eckholm, CGCS  
MGCSA President



**GILL  
MILLER** INC.  
*Golf Course Architects*

**Design • Renovation • Master Planning • Practice Centers**

122 North 2nd Street • River Falls, WI 54022 • 715-425-9511 • e-mail: [info@gillmiller.com](mailto:info@gillmiller.com)

visit our website [www.gillmiller.com](http://www.gillmiller.com)

Member: American Society of Golf Course Architects

HOLE NOTES (ISSN 108-27994) is published monthly except bi-monthly December/January, February/March for \$2 an issue or \$20 per year by the Minnesota Golf Course Superintendents' Association, 240 Minnetonka Avenue South, Wayzata, MN 55391-1617. Scott Turtinen, publisher. Periodicals postage paid at Wayzata, MN. POSTMASTER: Send address changes to HOLE NOTES, 240 Minnetonka Avenue South, Wayzata, MN 55391-1617.

## Table of Contents

## Advertisers

- 5** What's With All the Biostimulants  
By Rick Gabler
- 7** USGA Green Section Funds  
\$1,000,000 in New Research Projects
- 9** Meet Our Agronomists  
For North Central Region
- 11** Monitoring Improved Golf Course  
Pest Management By James E. Skorulski
- 22** Turf Student & Legacy Scholarships  
For 2000-01 By John Queensland
- 25** When In Doubt - Spec It Out  
By Patrick J. Gross
- 31** Common Sense Cart Paths  
By David A. Oatis

- IFC Cushman Motor Co., Inc.  
3 Gill Miller, Inc.  
4 Deep Tine LLC Aeration Co.  
5 Kasco Marine, Inc.  
6 Hydrologic Water Management Systems  
7 E-Z-GO Division of Textron  
8 Century Rain Aid  
9 Paskvan Consulting  
10 Hydrologic  
12 Turf Partners  
13 Glenn Rehbein Companies  
14 North Star Turf  
15 Par Aide Products Co.  
16 J.D. Turf  
17 Lesco  
18 Twin City Seed  
19 Novartis Turf & Ornamental  
20 MTI Distributing Co.  
21 MTI Distributing Co.  
22 Rhone-Poulenc Ag Company  
23 Country Club Turf  
24 Precision Turf & Chemical  
27 Hasson Sand & Gravel, Inc.  
28 Minnesota Golf Cars and Utility Vehicles  
29 PBI Gordon Corporation  
30 Leitner Company  
32 North Star Turf  
33 Prinsco Inc.  
34 Hartman  
35 Herfort - Norby Golf Course Architecture  
36 Classified Ads  
37 Plaisted Companies Incorporated  
38 Double Eagle Golf Construction  
IBC Zeneca  
BC Duinink Bros, Inc.

## Departments

- 3** From the President  
By E. Paul Eckholm, CGCS
- 18** Industry  
News
- 38** Editor's Corner  
By Steve Shumansky

15016 Oakland Ave.  
Burnsville, MN

952-435-7750

# Deep Tine LLC

Aerification Co.

**Specializing in the deep aerification of green and tees.**

Our goal is to provide professional, high quality service at a fair price using the best deep aerifier on the market; the **Redexim Verti-Drain®**.

With 5 years of deep aerification experience, we continue to strive for individual service.

Some special features we offer Superintendents include:

- Overnight or daytime aerification
- The speed of two Veri-drains
- Mid-summer needle-tining
- 9 and 18 hole price limits
- Aerification on short notice

What **Benefits** will Deep Aerification Give You?

- 1.) Root development up to 10" deep
- 2.) An increase in water infiltration and nutrient uptake
- 3.) The ability to modify your soil structure
- 4.) The prevention or elimination of black layer problems
- 5.) A reduction in water and chemical usage

Schedule now for spring and fall aerification by contacting

Tom Notch or Tom Stout

**952-435-7750**

# What's With All the Biostimulants?

By RICK GABLER  
Superior Tech Products

There seems to be a lot of new products in the turfgrass industry that are labeled "Biostimulant" and claim to have biostimulant properties. Why are so many companies jumping into this category with new products? Are manufacturers adding Biostimulant ingredients to their product lines because they see added benefits or because of the successful history of other Biostimulant products? Do the formulations even include any of the turfgrass hormones, which are the major properties of Biostimulant?

To answer these questions, let's review some of the University-proven facts of natural turfgrass hormones. I will also explain how the manipulation of plant hormones is used in other turfgrass products.

What is a plant hormone? It is an organic compound, synthesized in one part of the plant, and translocated to another part where, with interaction with other hormones, causes physiological responses. (2)

There are five known natural plant hormones. Three are considered to be associated with growth, Gibberellins, Auxins & Cytokinins. the other two of these are associated

with dormancy and death, Ethylene and Abscisic Acid. I will discuss only those hormones associated with growth.

Cytokinins can be considered the main hormone behind the first Biostimulant products. Researchers have found that seaweed that grew upwards of one foot per day were rich in Cytokinins. They concluded that if they could transfer this hormone to other plant life, growth would be that much healthier and consistent. that is why, to this day, some products list seaweed or seaweed extracts as a component of their product. It is very difficult to extract the hormones and the only hormone stable enough to be extracted from the seaweed is Cytokinins. Ground up seaweed is a good source of organic matter; however, sometimes salt comes with it. A popular product of this type, that was used for seed bed preparation in a sand based green, was tested for salt and came back with a salt content upwards of 8000 PPM.

Mother Nature insured that plants usually have adequate amounts of hormones under ideal conditions.

(Continued on Page 28)

## Attractive Water Quality Management At Affordable Cost!

### Kasco® Decorative Aeration

- Attractive and affordable
- Retards growth of algae
- Eliminates offensive odors
- Reduces thermal stratification
- Reduces build-up of sludge layer
- Energy efficient:  
Operating currents as low as 5 amps at 120V
- Lightweight and easy to install
- Successful shallow-water operation:  
1/2 HP unit operates in as little as 15" of water
- Available in 1/2 HP, 3/4 HP, and 2 HP sizes

TOP: The 2 HP, 8400/JF "Linden" display.  
Four additional display patterns are included.

CENTER: The "Linden" display with optional L-375 lighting. Inset shows 8400/JF float with light assembly attached.

BELOW: 3/4 HP, F3400/VF Decorative Aerator. 1/2 HP units are also available.

SHIPPED VIA



For more information contact:



**KASCO MARINE, INC.**

800 Deere Road, Prescott, WI 54021-1241 USA

Phone (715) 262-4488 • FAX (715) 262-4487

[www.kascomarine.com](http://www.kascomarine.com)

# **HYDRO**Logic™

Water Management Systems



**Plymouth, MN • Eagan, MN • Maplewood, MN • St. Cloud, MN  
• Sioux Falls, SD • Rapid City, SD • Des Moines, IA**

**1-800-422-1487**

# USGA Green Section Funds \$1,000,000 In New Research Projects

Funding for 15 new university research projects totaling \$1 million have been approved by the Green Section of the United States Golf Association.

Most of the funding is aimed at multi-year studies, with seven of the studies targeting turfgrass development and management, two projects looking at golf course construction practices, and six projects investigating pesticide and nutrient use.

The USGA already has 72 studies in progress and has committed more than \$18 million in research grants since 1983.

For a complete list of research studies funded by the USGA Green Section, visit the USGA webpage at [www.usga.org](http://www.usga.org).

The Green Section was founded in 1920 and remains involved in every phase of golf course maintenance and management. These activities include funding research to develop improved strains of turfgrass that require less water and are more tolerant of stress, and the promotion of environmentally sensitive construction and maintenance practices.

## New Research Projects for 2000

### *Integrated Turfgrass Management*

Biological Control of White Grubs on Golf Courses by Native Parasitic Wasps, University of Kentucky, Daniel Potter, 2 years, \$21,475.

Identification and Metabolic Diversity of Rhizobacteria from Bent & Bermuda Greens Clemson, University Horace Skipper, 2 years, \$17,400.

Establishment & Management of Seeded Bermudagrass in the Transition Zone, University of Arkansas, Michael Richardson, 3 years, \$14,333.

Relationship of Environment, Management, and Physiology to Bermudagrass Decline, Texas A&M Univ., Richard White, 3 years, \$24,995.

Integrating Biologically Based Strategies for Turfgrass Pest Management (Phase II), University of Georgia, S. Kristine Braman, 3 years, \$12,557.

### *Turfgrass Germplasm Enhancement*

Development of Gray Leaf Spot Resistant Perennial Ryegrass Through Breeding and Biotechnological Approaches, University of Kentucky, Mark Farman, 3 years, \$25,000.

Identification of Creeping Bentgrass (*Agrostis palustris* Huds.) Cultivars Using Simple Sequence Repeats (SSRs), Rutgers Univ., William Meyer, 2 years, \$24,940.

### *Course Construction Practices*

Effect of Rootzone Material and Depth on Moisture Retention in USGA Greens Michigan State Univ., Bernard Leinauer, 3 years, \$25,000.

Determining the Bulk Mechanical Behavior of Sand for Rootzone Mixtures, Penn State University, Charles Mancino, 2 years, \$7,691.

### *Pesticide and Nutrient Fate Modeling*

Best Management of Post-application Irrigation To Reduce Exposure to Volatile & Foliar Pesticide Residues, University of Massachusetts, John Clark, 3 years, \$24,955.

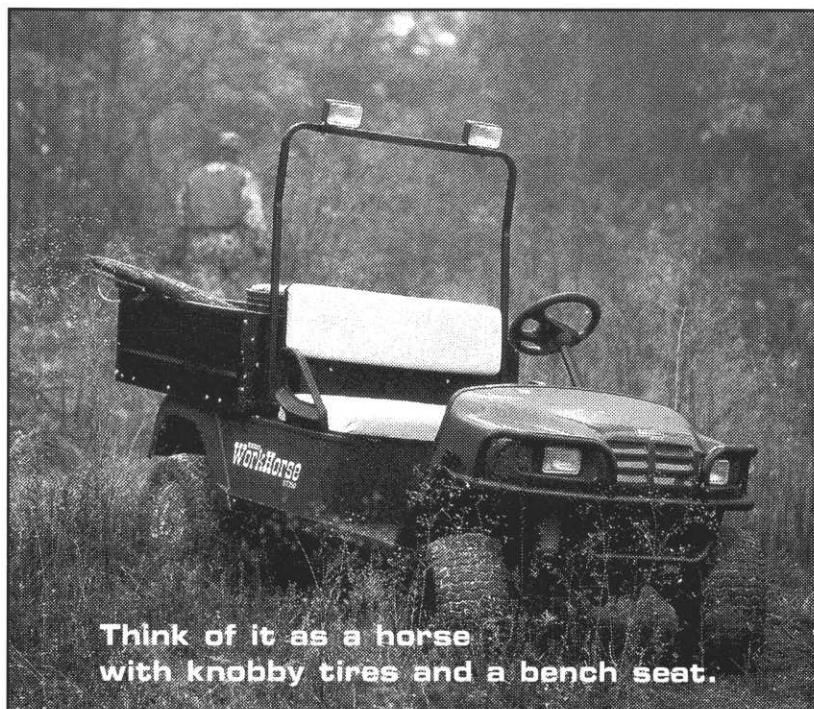
From Small Plots to Course Watersheds: Calibration of Computer Model Scenarios for Pesticide & Nutrient Runoff & Leaching in Turfgrass Environments, University of Georgia, Kevin L. Armbrust, 3 years, \$25,000.

Controlling Nutrient Runoff from Fairways Using Vegetative Filter Strips, Oklahoma State Univ., Greg Bell, 3 years, \$25,000.

Surface & Subsurface Water Quality Data Collection and Model Development for a Watershed Scale Turfgrass System, USDA - ARS, Kevin King, 3 years, \$24,933.

Further Evaluation and Modeling of Pesticide Partitioning Data from the UCR Putting Green Lysimeters, University of Calif./Riverside, Laosheng Wu, 2 years, \$12,467.

Phosphorus Fertilization of USGA-type Greens: Placement, Rates, and Leaching, Auburn University, Beth Guertal, 3 years, \$25,162.



Think of it as a horse  
with knobby tires and a bench seat.

Filling all your golf course  
and turf needs.



E-Z-GO Division of Textron THE FINEST UTILITY VEHICLES IN THE WORLD.™  
5105 W. 35th St.  
St. Louis Park, MN 55416  
(612) 922-1550  
800-210-9214

© 1999 E-Z-GO Division of Textron Inc. • 1-800-241-5855  
[www.ezgo.com](http://www.ezgo.com) • e-mail: [ezgo@ezgo.textron.com](mailto:ezgo@ezgo.textron.com)

SALES SERVICE LEASING PARTS

# A Successful Season... Starts with Century Golf Course Services



Century offers the complete line of Hunter Golf products to help you control water, labor and energy costs. Featuring Hunter rotors, valves, Genesis central satellite and Viking decoder control systems.

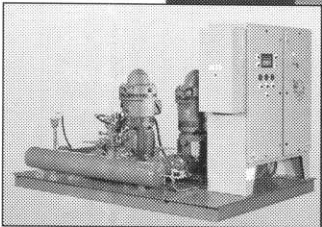


## Hunter Golf System



## SyncroFlo, Inc.

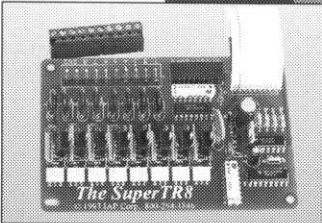
Efficient and economical, SyncroFlo pumping stations are the solution to many golf course irrigation problems.



## SyncroFlo Eagle Pumps

## BoardTronics™

Repair or upgrade your Rain Bird or Toro golf controllers. Replacement boards can be shipped from the Century National Service Center within 24 hours. Call 888-855-9132.



## Controller Board Repairs



Improve water quality with an aerating fountain, or create water features from existing golf course streams and ponds.



## Aqua Master Fountains

# CENTURY RAIN AID

## Sprinklers • Valves • Controllers • Pump Stations Controller Board Repairs • Fountains

An inviting, well-maintained course means challenging play...and a profitable season. As a golf superintendent, you can achieve this success with Century Golf Course Services. Century's team of professionals can help you solve irrigation or drainage problems and show you what's new in clubhouse lighting, water features and more. Call today for a free catalog and on-site consultation.

**800-347-4272**

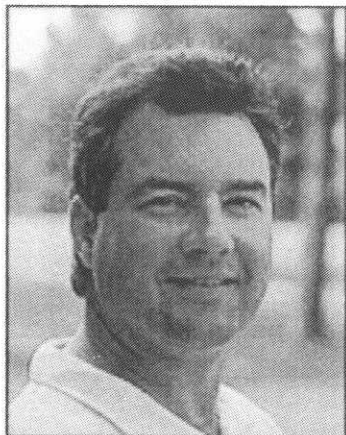
[www.rainaid.com](http://www.rainaid.com)

# Meet Our USGA Agronomists for the North-Central Region

## Robert C. Vavrek, Jr.

Agronomist  
rvavrek@usga.org  
P.O. Box 5069, Elm Grove, WI 53122  
Phone (414) 797-8743, Fax (414) 797-8838.

Bob is responsible for Turf Advisory Service visits in six states of the North Central Region of the USGA Green Section (Michigan, Wisconsin, Minnesota, North Dakota, South Dakota, and Montana). Other duties include writing articles for various publications and making numerous educational presentations at university turf conferences, USGA regional meetings, state /local golf association seminars, and golf course superintendent meetings. His goal since joining the Green Section six years ago is to help



Robert C. Vavrek, Jr.

provide golfers the best playing conditions possible within the budgetary limitations of a particular golf facility.

A Masters degree in turfgrass entomology from The Ohio State University explains his interest in helping golf course superintendents make an accurate diagnosis of turf related problems and , whenever possible, to reduce pesticide use through Integrated Pest Management. His Master's thesis research investigated the impact of insecticides on beneficial arthropods in a Kentucky bluegrass home lawn ecosystem.

Bob lives in Elm Grove, Wisconsin. His hobbies are fishing, particularly fly fishing, and magic.

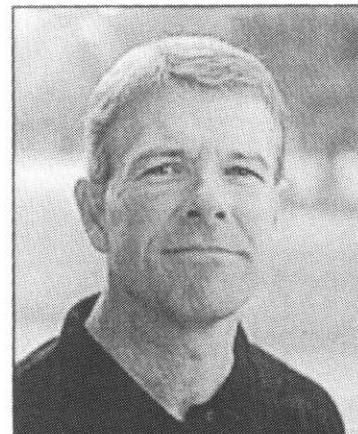
## Robert A. Brame

Director  
bobbrame@usga.org  
P.O. Box 15249, Covington, KY, 41015-0249  
Phone (606) 356-3272, Fax (606) 356-1847

Bob is Director of the USGA Green Section's North Central Region. He serves courses in OH, IN, KY, MT, MN, SD, ND WI and MI, conducting Turf Advisory Service visits in the states of KY, IN and OH. In addition to hundreds of TAS visits made since joining the staff, Bob has written many articles and spoken throughout the region and country to various golf related groups. Prior to his present position, Bob was an Agronomist in the Mid-Atlantic Region serving PA, MD, VA, WV, OH, KY and DE.

Before joining the USGA Green Section Staff in early

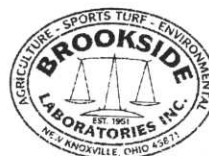
1990, Bob was a golf course superintendent for eighteen years. Bob has worked as a course superintendent in Mexico, Chicago, Lafayette and Indianapolis. The decade before joining the Green Section Staff, Bob was the course superintendent at Broadmoor CC in Indianapolis. In the late 80's, Broadmoor hosted a Senior Tour event which initiated Bob's appreciation for championship conditioning. Bob has been a member of the Golf Course Superintendents Association of America (GCSAA) since 1973 and the American Society of Agronomy (ASA) since 1990.



Robert A. Brame

Bob is a 1972 graduate of Purdue University with a Bachelor of Science degree in Agronomy. Before Purdue, Bob attended Vincennes University where he met his wife Rhonda. Bob and Rhonda (who also works in the North Central Region Office), live in Covington, Kentucky. The Brame's have two grown children. Scott lives in Indianapolis, Indiana, and J. Nicole lives in Lexington, Kentucky.

Analytical Services By:



**Paskvan Consulting**  
Route 1, Box 77A  
Akeley, MN 56433  
218-652-3542 Office  
218-652-2949 Fax  
paskvanconsulting@unitel.com

**"Where Success is Never an Accident"**

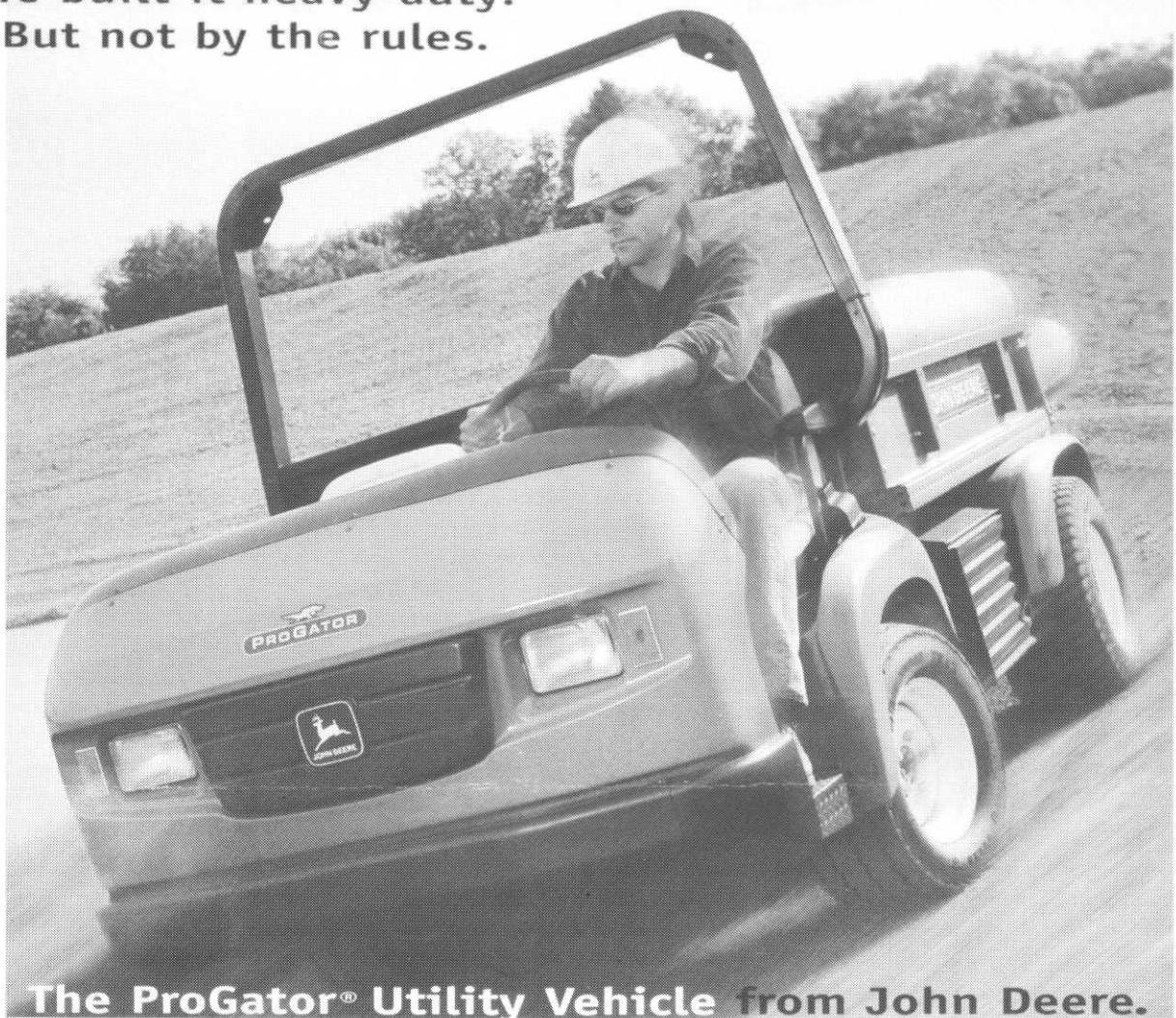
Specialists in Soil & Plant Nutrition  
Tailored to Golf Courses and Sports Turf

### We provide the following services:

- Complete inventory of the soils on the course or job site
- Sampling, Analysis, Delivery and Interpretation of the results to save you money
- Recommend corrective fertilizer materials to save you money
- Physical analysis on sand-soil-peat to determine proper mixing for greens and topdressing
- Irrigation quality analysis
- First lab in the country A2LA accredited under the new USGA guidelines for new greens construction
- Fast turn around time, yet quality is never compromised



**We built it heavy-duty.  
But not by the rules.**



**The ProGator® Utility Vehicle from John Deere.**

With the John Deere ProGator, the idea of a heavy-duty utility vehicle just got redefined and redesigned. No other vehicle combines the strength, reliability, and flexibility of the ProGator UV.

You can see the difference just by walking through the operator station. It's wide open, making it easy to get on and off.

Driving is a different feel as well. A five-speed, synchro-mesh transmission allows for seamless shifting — no more overlapping gears. And the

hydrostatic steering provides for precision control and tight turning.

If you have a ton to haul, then this is your vehicle. The ProGator UV weighs in with a hefty 2,650-pound load capacity. Strength also comes in the form of a one-piece axle supporting the rear wheels.

Heavy-duty for any duty. The ProGator UV has the strength and versatility you need, and the performance no other vehicle can top. Call for a demonstration today.

[www.deere.com](http://www.deere.com)

**J.D. Turf**

12040 Point Douglas Drive S.  
Hastings, MN 55033  
Phone: (651) 437-7747  
Fax: (651) 437-3483

Official  
Golf Course  
Equipment  
Supplier



**Nothing Runs Like a Deere®**