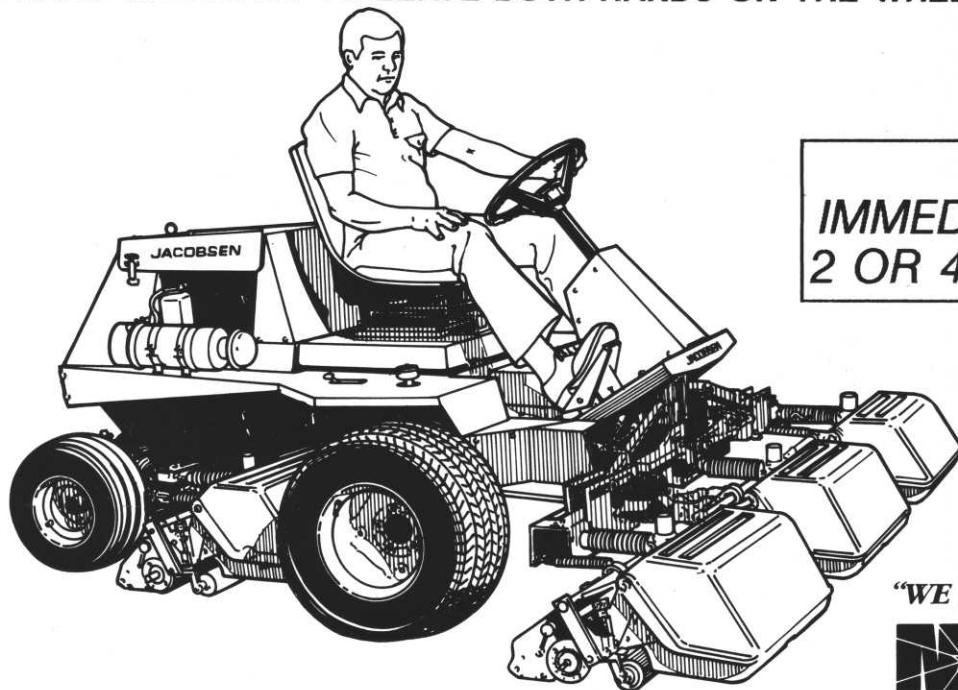


LF-100

"WE DO FAIRWAYS LIGHT"

✓ *THESE OUTSTANDING FEATURES!*

- 4 WHEEL DRIVE OPTION - FOR YOUR STEEPEST TERRAIN!
- ADJUSTABLE REEL DOWN PRESSURE!
- BALANCED REEL CIRCUITS PROVIDES CONSISTANT QUALITY FINISH UNDER TOUGH MOWING CONDITIONS!
- EXTRA WIDE LOW PROFILE TIRES - REDUCE COMPACTION!
- HIGH HEIGHTH OF CUT - ALLOWS CUTTING UP TO 1 3/16"!
- MOWS AT UP TO 6 M.P.H.! WITH ADJUSTABLE, VARIABLE MOWING SPEED!
- INDIVIDUAL HYDRAULIC WHEEL MOTORS - PROVIDE SUPERIOR TRACTION WITHOUT USE OF BRAKES!
- FOOT CONTROLS FOR FWD-REV AND RAISE LOWER FREES OPERATOR TO LEAVE BOTH HANDS ON THE WHEEL!



**IN STOCK FOR
IMMEDIATE DELIVERY
2 OR 4 WHEEL DRIVE!**

Thousands of LF-100's are in operation at over 1,800 golf courses in the United States! Other references are available upon request!

"Why buy a copy when
You can own the Original".

"WE INITIATE SATISFACTION"

NST

NORTH STAR TURF, INC.

3080 Centerville Road • St. Paul, MN 55117

1-612-484-8411 1-800-592-9513

HOLE NOTES

Official Publication
of the
Minnesota Golf Course
Superintendents' Association

1989-90 MGCSA BOARD OF DIRECTORS

Officers

President Kerry Glader, CGCS
St. Cloud Country Club
612/253-5250

Vice-President Tom Fischer, CGCS
Edinburgh USA
612/424-8756

Secretary Rick Fredericksen, CGCS
Woodhill Country Club
612/473-5811

Treasurer Jim Nicol, CGCS
Bunker Hills Golf Course
612/755-4150

Ex-Officio Keith Scott, CGCS
Oak Ridge Country Club
612/938-6900

Directors

Kevin Clunis Stillwater Country Club
612/439-7760

John Harris Lafayette Club
612/471-8493

Greg Hubbard, CGCS Manitou Ridge
Golf Course
612/777-2987

Bill Johnson Edina Country Club
612/922-9012

Joe Moris Tartan Park Golf Course
612/733-3472

Steve Schumacher Hastings Country Club
612/437-7112

EDITORIAL COMMITTEE

Bill Johnson
John Harris

EDITOR

Bill Johnson

ASSOCIATE EDITORS

Jeff Turtinen
Scott Turtinen

PUBLISHER

Ralph Turtinen

Hole Notes Office

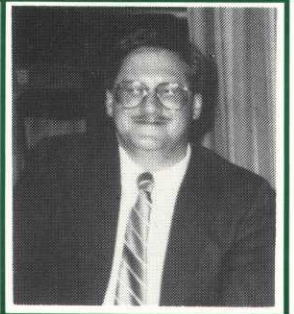
Turtinen Communications
240 Minnetonka Avenue South
Wayzata, Minnesota 55391
612/473-3722
FAX: 612/473-0576

Business Office

Minnesota Golf Association
6550 York Avenue South • Suite 402
612/927-4643
FAX: 612/927-9642

FROM THE PRESIDENT'S DESK

Here Are Videos About Employee Right-To-Know Law And Working With Pesticides



I have had several calls about what to do about the Employee Right to Know Law. In this regard, I have located a local company that has a good generic video with supportive materials. Furthermore, it covers *all* of a club's staff, not just the grounds department.

This company is On-Site Environmental Services, 7308 Aspen Lane North, Suite 144, Minneapolis, MN 55428 (612) 493-3424. Available is a 55-minute, live-action video covering three major areas of concern: (1) OSHA Employee Right to Know; (2) EPA Hazardous Waste Management and (3) OSHA Respirator Protection.

The cost is \$189, plus tax and shipping. Supportive materials include a safety data sheet binder and a training materials binder. Your MCGCS Executive Committee has reviewed this video and feels that it will cover our needs.

In addition, the Idea Bank, Santa Barbara, Calif., has a video set on working with pesticides. This four-volume set (15 minutes each) covers Storage Disposal, Clothing, Equipment and Environmental Safety, Calibration, Mixing, Sprayer Operation and Application and Maintenance Guidelines. It is priced at \$295. Write The Idea Bank, 2716 Exeter Place, Santa Barbara, CA 93105 or call 1-800-621-1136. This company also has several other videos on job and equipment safety. Please call me if you have any questions.

* * * *

With Board approval, I have appointed two associate members to act as liaisons to the Board of Directors from our Industrial Relations Committee. Glenn Rasmussen, MTI Distributing Co., Inc., and Dan Miller, North Star Turf, will keep our association in contact with our associate members. Thank you, gentlemen, for willfully donating your time and talents. It is appreciated.

* * * *

The March Mini-Seminar is coming up soon. Kevin Clunis and the Education Committee have put together a great program for us, so plan to be at the Lafayette Club on March 21. And don't forget the GCSAA Regional Seminar, also at Lafayette, on March 19-20....Our thanks to Woodhill Country Club and host superintendent Rick Fredericksen for the hospitality at the January monthly meeting.

— Kerry Glader CGSA
President



Woodhill photos in this issue by Dale Wysocki

MILOORGANIZING

is more
than
fertilizing

Landscape & Turf

15195 Martin Dr., Eden Prairie, MN 55344 • 612-934-2380



Milorganite is a natural organic fertilizer that provides a balanced diet of essential nutrients. Along with the major nutrients like nitrogen and phosphorus, Milorganite also contains boron, zinc, copper, sulfur and iron. This entire spectrum of nutrients is released slowly in amounts your grass plants can more completely absorb.

Milorganite supplies iron, an important element vital for growing healthy and beautiful green turf. Just as your blood needs iron for strength, grass needs iron to form the chlorophyll that gives it a dark, green color. What's more, iron-rich grass greens up faster in the spring, without excessive growth, and maintains its color better and longer during dry weather.

Milorganite gives full nutrient value. Milorganite's organic composition ensures almost total nutrient uptake by plants. You get what you pay for. That is not true with many synthetic fertilizers where much of the nutrients evaporate into the air and leach out of the rootzone.

Milorganite doesn't burn. Milorganite does not contain chemical salts as synthetic fertilizers do. It is an organic product that breaks down slowly and naturally. It will not burn and is safe for your grass.

Milorganite adds valuable humus to the soil, improving the soil's ability to grow and nurture grass. The humus:

- improves the soil's ability to hold moisture.
- increases the soil's efficiency in holding nutrients, releasing them when needed.
- expands the soil's buffering capability, helping to withstand the effects of side swings in soil pH (acidity).
- makes the soil more resistant to damage caused by the addition of potentially harmful chemicals.

Milorganized turf is less susceptible to grass diseases and other damage. Milorganite promotes a healthier grass which:

- is more resistant to pest attacks and recovers quickly from dam-

age.

- reduces the effect of many grass diseases such as Fusarium blight, dollar spot, red thread snow mold and others.
- reduces the effects of winterkill.
- reduces damage caused by harmful nematodes that attack grass roots.

Milorganite reduces thatch by promoting the buildup of beneficial microorganisms which decompose the thatch.

Milorganite is easy to apply and does not have to be "water in." Because Milorganite is granular, it is easy to apply. It flows easily through any spreader. For high quality turf use a spinner spreader (open side) or a drop spreader (set at #10).

Because it does not have to be watered in, Milorganite can be applied under the driest conditions and during the hottest months without endangering the lawn. And, because it's virtually dust free, it can be applied even under windy conditions.

GOLF COURSE FERTILIZERS

PRODUCT	BAG WT.	RATES		BAG COVERS	#N/M	NITROGEN	FEATURES
		LBS/M	LBS/A				
Milorganite Pro "Spring" 20-2-5 + Team	50#	8	220	10,000	1.0	5% WIN 15% UREA	40% Milorganite 1.5% Iron 1.5% Sulfur Potassium Sulfate
Milorganite Pro "Summer" 20-3-6 + Iron	50#	8	220	10,000	1.0	5% WIN 15% UREA	40% Milorganite 1.5% Iron 1.8% Sulfur Potassium Sulfate
Milorganite Pro "Fall" 10-5-15 + Iron	50#	8	220	10,000	0.5	2.7% WIN 5.8% UREA 1.5% AMMONIACAL	50% Milorganite 2% Iron 2.5% Sulfur Sulfate & Muriate of Potash
Golf Pro 12-4-8 (Small Granular)	40#	8	370	5,000	1.0	7.2% WIN 4.2% UREA 0.6% AMMONIACAL	50% Milorganite 2% Iron Potassium Sulfate Tees & Fairways
Milorganite Professional	50#	18.8	720	3,000	1.0	5.5% WIN .5% WSN	100% Milorganite 4% Iron 2% Sulfur

COMPARING APPLES TO APPLES???

YOU SHOULD BE COMPARING

“THE CORES”

Faster is not always better. The speed of an aerifier is not a true indicator of aerifying performance! Other factors to be considered in aerifier selection are: **DEPTH OF PENETRATION** and **NUMBER OF HOLES PER SQUARE FOOT**.

The Ryan GA-30 penetrates turf to a depth of 3¾". A full ¾" to 1" deeper than other models. Aeration patterns can be adjusted from 1" hole spacing for intensive aerifying and renovation, on up to a full 5" spacing for general purpose uses.

You ride instead of walk, and transport between areas at a full 6 MPH.

If you are in the process of trying to compare one aerifier to another, *GIVE US A CALL*. We'll show you how to compare **THE CORES**, so you don't end up with a bad apple!!!



RYAN®

BUILT TO LAST

Distributed Exclusively By:

(800) 592-9513
(612) 484-8411



NORTH STAR TURF, INC.

3080 Centerville Road
St. Paul, MN 55117

WORK PLAN

* * * *

Baker Park Course Leachate Study

Medina, Minnesota

I. Introduction

Historically, a wide variety of pesticides and fertilizers have been applied to golf courses in order to maintain high-quality turf on greens and fairways. Because of the perceived heavy use of these chemicals, golf courses have been implicated as a significant source of contaminants entering surface and groundwater. The location of many golf courses adjacent to waterbodies has exacerbated this problem by making lakes and streams the direct receiving body of golf course runoff. Any deterioration in water quality is at least partially blamed on the golf course. Unfortunately, accurate data regarding the type and quantity of contaminants in golf course runoff water is generally not available.

In order to assess the impact of golf courses on water resources, Hennepin Parks, the Minnesota Golf Course Superintendents Association and the Hurdzan Design Group are funding a study project with the following objectives.

1. Determine the quantity and quality of subsurface runoff from a golf course green.
2. Determine a suitable treatment system to remove contaminants from golf course green leachate water.
3. Inform golf course operators and the public of the project results.

II. Study Site

The Baker Golf Course is located within Baker Park Reserve, approximately 20 miles west of Minneapolis. Baker Park Reserve is one of seven reserves managed by the Suburban Hennepin Regional Park District. The golf course contains numerous wetlands and is adjacent to Spurzem Lake. During the renovation of the golf course in 1989, an underdrain tile system was installed in the green on the 7th hole. Leachate from the green is collected by the underdrain system and discharged into an adjacent manhole. The manhole was constructed to allow for the installation of flow monitoring and sampling equipment on the inflow and outflow pipes (Figure 1).

Leachate flow from the green will be monitored continuously during rainfall events and while irrigation of the green is occurring. Water quality samples will be collected from the underdrain system during four rainfall events and three irrigation events in 1990.



Samples will be collected during rainstorms occurring after the application of pesticides and/or fertilizer to the green. A normal schedule of pesticide and fertilizer application will be maintained during the study period. In the event that the current drought extends into 1990, the irrigation system will be used to simulate natural rainfall events for sample collection purposes.

The water samples will be analyzed for all pesticides and fertilizers which are currently being used on the golf course greens. A partial list of these products is shown in Table 1 below:

Table 1

Trade Name	Generic Pesticide Name/ Active Ingredient
BAYLETON 25	Triazole
3336-F	Thioallophante Ethyl
FUNGO 50	Thiophanate-Methyl
TERSAN SP	Chloroneb
BANOL	Propamocarb hydrochloride
TERSAN 1991	Benomyl
OFTANOL 2	Isofenphos
SUBDUE 2E	Metalaxyl
DACTHAL W-75	Chlorothal
DACONIL 2787	Chlorothalonil

(Continued on Page 7)

BAKER PARK—

(Continued from Page 6)

CHIPCO 26019	Iprodione
TERRACLOR	Pentachloronitrobenzene
RUBIGAN	Fenarimol
SPOTTRETE	Thiram
DYRENE	Anilazine
Inert ingredient	Xylene
CALO-CLOR	Mercury
CADMIUM CHLORIDE	Cadmium
PAR Ex	Phosphorus
PAR Ex	Nitrogen

The product list may be expanded to include new chemicals which will replace those currently being used.

The monitoring of one season of runoff will provide data on the types and quantities of chemicals leaching from the green. A suitable treatment system can then be designed to remove the contaminants detected in the runoff water. However, the project funding and proposed work schedule will involve only the collection of runoff data during 1990.

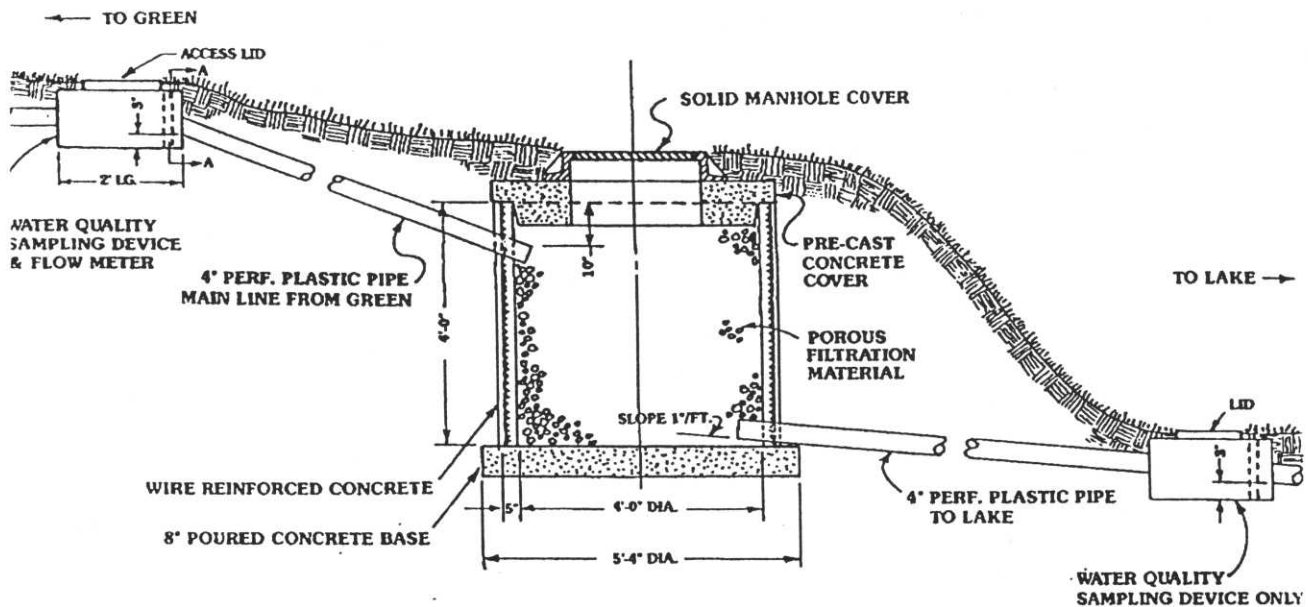
III Work Schedule

Task	Completion Date
1. Purchase sampling equipment	
- Select equipment type	November 1989
- Prepare bids	December 1989
- Select supplier	January 1990

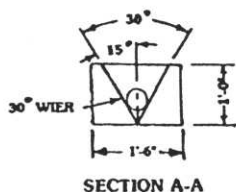
2. Select analytical laboratory	
- Prepare RFP	January 1990
- Prepare contract documents	March 1990
3. Install sampling equipment	
- Construct weirs in flow lines	April 1990
- Construct sampler housing units	April 1990
- Calibrate flow meter	April 1990
4. Collect flow data	
- Recalibrate meter as necessary	May-August 1990
- Monitor meter operation	May-August 1990
5. Collect water quality data	
- Activate sampler for rainfall and irrigation events	May-August 1990
- Transport samples to laboratory	May-August 1990
6. Analyze data	
- Calculate total runoff from green	September 1990
- Calculate quantity of contaminants lost from green	September 1990
7. Prepare report	
- Send draft report out for review and comment	October 1990
- Final report to Association of Golf Course Supervisors	November 1990

All project tasks, except laboratory analysis, will be completed by Hennepin Parks staff. Design of the underdrain system and the manhole was done by Hurdzan Design Group.

(Continued on Page 15)



(SECTIONAL VIEW)



PUTTING GREEN FILTRATION SYSTEM

SCALE: 1/2" = 1'-0"

CLASSIFIED ADVERTISEMENTS

WANTED

Range Picker, Range baskets and other Range equipment.

Cedar River CC
Adams, Minnesota

507-582-3595

WANT TO BUY OR SELL?

★
**Advertise
in
Hole Notes**

FOR SALE

1. Used range-ball picker—good condition
2. Two used Peerless booster pumps complete with 10 H.P. General Electric motors. Rated at 350 G.P.M.
3. Buckner No. 16 quick coupler valves and keys.
4. Buckner 10150, 865, 522 part circle, and 880 fairway guns.
5. Jacobsen walk behind greens-mower—reconditioned.
6. West Point fairway airifier—three point mount, six foot wide.
7. Cushman topdress spreader with rubber belt. Like new.

Best offer on any or all of these items.

Mankato Golf Club
(507) 388-2546
Boots or Fred

NEED AN ASSISTANT SUPERINTENDENT?

Seeing an Assistant Superintendent's position. Graduating with B.S. degree in Turf Management from Michigan State University. Available end of March 1990. Contact Michael Siefken (313) 349-6716.

FOR SALE

Seven 11-bladed Toro
Reelmaster mowers.

WOODHILL COUNTRY CLUB
612/473-5811

TOPDRESSING



Relax!

Let us take the worry out of
topdressing . . .

- We use only the highest quality raw materials. Our peat source is high in organic matter and our sand is processed through a 1 mm screen to assure a more desirable particle size.
- Each component is screened and processed separately. Every order is mixed at the time of pick up or delivery and rescreened to assure uniformity.
- We will formulate any mix according to customer specifications.

**RANDALL
TRANSIT MIX CO.**

Northwood, Iowa



Northwood, Iowa

P.O. Box 2
Highway 105 West

515-324-1063
(collect)

Managing Your Turf



by Larry Vetter
President, Turf
Management
Products, Inc.

The objective is to help you grow better turf.

This is the first in a series of monthly communications designed to help you in your efforts to grow better turf. The series is an expression of our business philosophy—helping our customers do their job better. Quality turf management is a complex business. So, we may not cover everything you want to know about a given subject in any given communication. But, we will be giving you valuable, usable information that you can add to your arsenal of management tools and share with your staff.

An era of change. From the ground up.

In the past few years, our industry has seen an incredible amount of change in management tools, government regulations, employee considerations, quality demands and amount of play. I'm sure each of these objects creates a certain mental image for you. New chemicals and equipment. Irrigation systems. OSHA. FIFRA. Wage issues. Shotgun starts. Wear patterns. Stimp meters. Etc.

Change also continues to affect the most basic element of our jobs—the grass plant.

Twenty years ago you had a choice of only one or two named varieties in each of the species commonly used for turf. Today, it's nearly a full-time job just keeping up with the new varieties. And the future looks even more complex. Record amounts of money are being spent in developing new species that may conserve

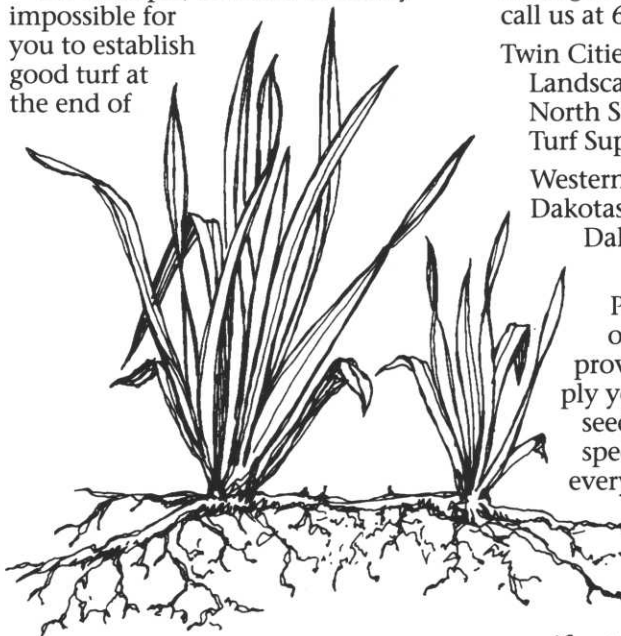
water, require less fertilizer and less mowing, offer better resistance to disease, and so forth.

The fabulous five.

But, before these new species come along to both brighten and complicate our lives, today's turf manager must rely on five distinct grasses to create and maintain the proper turf to play on and to add aesthetic touches. They are bentgrass, tall fescue, fine fescue, ryegrass and Kentucky bluegrass. Each grass has its own unique characteristics. Each has strong and weak points. And, each has its own variables that the savvy turf manager takes into account.

You will make your turf maintenance job easier or more difficult by the grass choices you make when initially planting an area or when renovating an area.

For example, it would be nearly impossible for you to establish good turf at the end of



a cart path if you chose a grass that couldn't cope with traffic. You could modify the soil, change the cutting height, use a different type or amount of fertilizer, adjust the timing of fertilization, and alter the watering frequency or amount of water used. You can try them all, but, if the plants in the area don't like traffic, all your efforts would probably be met with bare soil.

And as you well know, traffic is just one of the things you have to consider when dealing with a specific turf area. Soil type, desired

mowing height, fertility levels, watering practices, exposure, disease pressure, quality demands and other factors will affect a particular area of turf. That's why you need to know as much about your choices as possible.

A little expert advice can come in handy.

I think you'll agree that the day to day decisions you make when planting or renovating your problem turf areas, definitely affect the amount of difficulty you will experience in future maintenance. One of your best assurances for minimizing problems, is to talk to someone whose business it is to understand how different grasses perform under varying conditions.

At Turf Management Products, we think our distributors have just the expertise you need. Before you plant or renovate, give one of these Turf Management distributors a call. Or call us at 612-476-1650.

Twin Cities Area:

Landscape & Turf 612-934-2380
North Star Turf 612-484-8411
Turf Supply 612-454-3106

Western Minnesota & the Dakotas:

Dakota Turf 605-336-1873

Your Turf Management Products distributor is not only ready with sound, proven advice, he can also supply you with one of our quality seed products. There's one specifically formulated for every planting and renovating situation you face.

Coming in April

We'll talk about the specific strengths and weaknesses of various grasses and how you can combine them for best results in various situations.

Reprints of this article are available from:

TURF Management
PRODUCTS, INC.

Turf Management Products, Inc.
3617 Larchwood Drive
Minnetonka, MN 55345
612-476-1650

IDEAS, IDEAS, IDEAS!

BY JOHN HARRIS, CO-EDITOR

As co-editor of *Hole Notes*, I would like to introduce our three Regional Reporters: "Boots" Fuller, Southern Region; James Wodash, Western Region, and Scott Hoffmann, Northern Region. I will cover the Metro Region.

The purpose of a Regional Reporter is to place an extra set of eyes and ears around the state. If one of these gentlemen should approach you for an article, or a statement, please give them some of your time and ideas.

We also have an information check list form provided by Turtinen Communications. This form lists a number of pertinent issues that make up an event or a human interest story. If you should be contacted by phone or be asked to fill out this form, please take the time to do so. This makes it possible for us to add the rhetoric based on the description and/or answers given.

Each of us has our own unique situations. We, as course superintendents, come up with a menagerie of homemade tools, equipment and methods to meet the challenge. I have had the pleasure of walking into many a golf course maintenance facility and, on

each occasion, I see at least one "do-hickie" that made life a little easier.

Complicated or simple, these ideas may be of value to your associates. Write about them.

For example, Fred Taylor saw a white board. He felt that it would be of some help in organizing staff. Nothing unusual about a maintenance facility have a board to organize the ongoing tasks of the day.

However, he put his thoughts on paper and shared it with everyone. He

told us that, with a little ingenuity, you too, can have one of these. As we all know, Fred won the 1st Annual James Watson Journalism Award. It was about a white board.

Look around your facility and write down your ideas, or pick up the phone, call a regional reporter and say "guess what I saw today."

We all have ideas. Pat yourself on the back and say (on paper), "Lookie what I got. Try it, you'll like it."

—John Harris, Co-Editor

MEMBERSHIP REPORT

NEW MEMBERS—JANUARY 8, 1990

Harvey Klitzke	Class	C	Anoka Vo Tech
Lee Hornung		D	Minikahda Club
Andrew Williams		BII	Moorhead Country Club
David Longville		BII	White Bear Yacht Club
Mike Ramerth		C	U of M - Waseca

REINSTATEMENTS

Rick Rannells	Class	A	Root River Country Club
Steve Schumacher		A	Hastings Golf and Country Club

RECLASSIFICATIONS

Bob Adams	Class	B to A	New Prague Golf Club
Daryl Ahlgren		B to A	Columbia Golf Course
Mary Burg		B to A	Brightwood Hills
William Cox		B to A	Tianna Country Club
James Crawford		BII to B	Town & Country
Todd Daniels		F to E	Prolawn Inc.
Chuck Egeberg		B to A	Clifton Hollow
Dale Evens		BII to B	Meadowbrook Golf Course
Cary Femrite		B to A	Pebble Creek C.C.
Jack Greengo		A to AA	Boone, Iowa
John Haldeman III		B to A	Gem Lake Hills
James Johnson		BII to B	Rich-Spring Golf Club
Paul Johnson		BII to B	Normandale Golf
Todd Klein		BII to B	Buffalo Hts Golf Club
Jerry McCann		A to AA	Daytona Country Club
Tom McCann		A to F	Landscape & Turf
Pete Mogren		BII to B	Oak Glen Country Club
Warren Nehring		BII to B	Koronis Hills
George Ostler		BII to B	Hillcrest C.C.
Charles Schultz		BII to B	Indian Hills Golf Club
David Solga		D to BII	Golden Valley C.C.
Keith Stachowski		BII to B	Goodrich Golf Course
Donald Svor		BII to B	Oak Ridge Country Club
Rick Traver		C to BII	Oak Glen Country Club
Patrick Walton		BII to B	Deer Run Golf Club
Scott Weltzin		BII to B	Pheasant Run Golf Club
Milton Wiley		F to AA	Landscape & Turf
Richard Wise		A to AA	Oxbow Country Club
David Wood		D to C	St. Cloud Country Club

Recruit

A NEW MEMBER

Need a new membership application or reclassification form? Contact

Greg Hubbard

Membership Chair

Manitou Ridge Golf Club

3200 N. McKnight Rd.

White Bear Lake, MN 55110

612-777-2987

Greg Hubbard, Membership Chairman