

TURF SUPPLY COMPANY

TURFACE

Soil Amendment

GIVES SUPERB DRAINAGE
AND AERATION

Apply at time of aeration by removing plugs and topdressing with Turface. Lets roots breathe! Turface acts as a "Separator" in sticky, gummy soils.

NO OTHER HERBICIDE STOPS
AS MANY WEED VARIETIES
AS MALLINCKROODT'S

TREX-SAN™

TREX-SAN™ IS 1.6 TIMES

STRONGER THAN TRIMEC

CHIPCO® 26019

FUNGICIDE

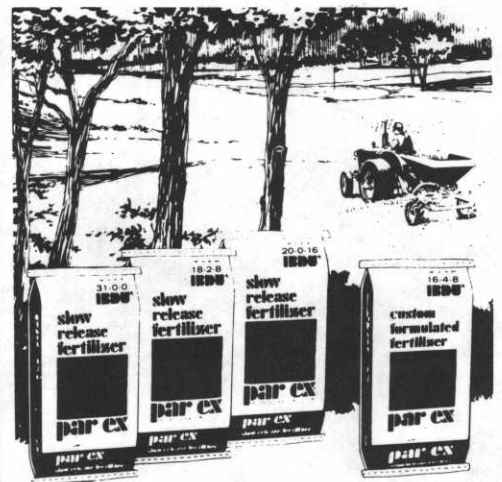
A FOLIAR APPLIED FUNGICIDE FOR THE
PREVENTION AND CONTROL OF DISEASES OF TURFGRASS



FERTILIZER

- EARLY ORDER DISCOUNTS
- EARLY DELIVERY DISCOUNTS
- QUANTITY DISCOUNTS

7% + 3% + 19%
TOTAL DISCOUNTS



TURF SUPPLY COMPANY

2970 Dodd Road
St. Paul, MN 55121
(612) 454-3106

HOLE NOTES

Official publication of the MINNESOTA
GOLF COURSE SUPERINTENDENTS' ASSOCIATION.

EDITOR: WARREN J. REBHOLZ
6550 YORK AVENUE SOUTH
SUITE 402
EDINA, MINNESOTA 55435-2383
PHONE: 612/927-4643

ASSOCIATE EDITOR: THOMAS P. MAGNE

EDITORIAL COMMITTEE CHAIRMAN:
NATHAN DUNN

M.G.C.S.A. BOARD OF DIRECTORS FOR 1982

OFFICERS

PRESIDENT: LARRY D. MUELLER
VICE-PRESIDENT: JOHN NYLUND
SECRETARY: STEVEN YOUNG
TREASURER: DON LINDBLAD
EX-OFFICIO: DENNIS HENDRICKSON

DIRECTORS

DALE CALDWELL	KERRY GLADER
NATHAN DUNN	MARK SMITH
IRWIN FULLER, JR.	JIM WODASH

THE FOLLOWING IS A LIST OF OFFICE TELEPHONE
NUMBERS FOR THE ENTIRE BOARD: AREA CODE 612.

MARK SMITH.....	544-4474
JIM WODASH.....	235-8233
DENNIS HENDRICKSON.....	435-7759
LARRY MUELLER.....	884-1074
STEVEN YOUNG.....	473-7418
JOHN NYLUND.....	941-5117
DALE CALDWELL.....	646-7125
NATHAN DUNN.....	448-3626
IRWIN FULLER.....	507/388-2546
KERRY GLADER.....	253-5250
DON LINDBLAD.....	755-2140

WANTED - USED EQUIPMENT

Jacobsen or Toro Hand Green Mowers
Toro Parkmaster Fairway Mower - Any age.
Toro, Worthington, Ford, Massey Ferguson
Tractor - Gang Mower for rough cutting
Other equipment useful in starting a new
golf course. TO RENT: One greens mix
shredder.
Now in construction - Woodmore Golf Course,
Woodbury, Minn. Contact Norb Anderson or
Secretary Nancy - 612/646-3500



FROM THE PRESIDENT'S DESK

LARRY MUELLER

This is the time of year when we can truly appreciate being Golf Course Superintendents in Minnesota. The fall season, consisting of cool nights and warm sunny days along with the splendor of color that the foliage displays, makes it one of the nicest seasons of the year even though it seems to be quite short lived.

In the northern climate our occupation challenges us to change with the seasons and this helps to keep us from becoming complacent for we have to make adjustments to accommodate nature. It also gives us a chance to catch our breath and do some of the things we enjoy.

I believe 1982 will go down as a good year for golf. We lost very few days to bad weather and play seemed to be up. Apparently, the economy didn't affect play adversely.

Our 1982 Annual Golf Tournament was a very successful event and we owe much thanks to Don Lindblad, Host Superintendent, and Jim Nicol for all their time and effort. It seems they didn't miss a trick and it made for a first class event. Thanks again, fellows.

We are sorry to report the passing of Joe Garske, founder of Par Aide Products Co. and a long time Associate Member. A memorial was donated to our Research Fund in his name. The industry will miss Joe.

It is not too early for you eligible members to be thinking about running for the Board of Directors of our Association. Chairman of the Nominating Committee Dennis Hendrickson would appreciate hearing from anyone interested. It is a great opportunity to get involved in your association as well as a rewarding experience. Please let Dennis know if you are interested.

Transitional Management For Northern Grasses

Autumn's shorter days and cooler temperatures bring fewer golfers out on the courses, but this is the beginning of another critical time for superintendents: the transitional period.

"The worst is over, but transitional management for northern grasses such as bluegrass, bentgrass, perennial ryegrass and creeping red fescue is important," states Todd Cutting, TUCO Agricultural Chemicals technical field extension representative. "Proper cultural management practices during the transitional period (early September to freeze-up) pay off next spring in terms of fewer disease problems, healthier turf and earlier green-up."

This period poses a dilemma for the superintendent. On one hand, he must maintain a good golfing surface through the late season. On the other hand, he shouldn't do anything to cause excessive growth which can increase turf's susceptibility to diseases and winter injury.

"Many superintendents start off with exceptionally good disease control programs, but tend to slack off during the transitional period," notes Cutting. "The available labor supply dwindles as students return to school, the budget is nearly depleted and winter is fast approaching. However, what you do in the fall determines what you get next year."

To maintain good surfaces for fall play while preparing the turf for winter and ensuring healthy turf for the spring, Cutting recommends the following steps:

1) Continue the fertility program to maintain adequate grass growth for good playing surface while not causing excessive growth.

"During the transitional period, turf begins replenishing depleted growth reserves by storing carbohydrates and sugars in its roots and begins making tillers instead of leaves. Tiller production is greatly increased by raising the supply of nitrogen, phosphorus and potassium," explains Cutting.

Cutting recommends using a balanced fertilizer containing 1/2 lb. nitrogen in early September. Nitrogen supplies nutrients for root growth and provides for dark green color in early spring. The more root growth that occurs in autumn, the greater tillering that can occur in early spring. Potassium helps prevent winter damage, regulate water retention and increase turf's hardiness to heat, cold and drought.

2) Maintain watering program to ensure good surface playability while encouraging root development. "Overwatering interferes with root development and can cause lush growth which increases the plant's susceptibility to disease and tissue freezing. Excess water also favors development of common fall diseases such as leaf spot and dollar spot," notes Cutting.

3) Continue disease control program to reduce the numbers of overwintering sclerotia for dollarspot and spores for leaf spot, and also early snow mold. Cutting recommends two applications of Acti-dione RZ - the first in late October and the second in mid-November. This fungicide contains the antibiotic Actidione and PCNB.

"Acti-dione knocks down any diseases that are actively working, and the PCNB component provides a fungistatic barrier which prevents diseases from spreading," says Cutting. "PCNB is broken down by bacteria in the soil. Because these organisms become inactive at temperatures below 50 degrees F., PCNB remains in the thatch layer and suppresses disease activity until spring. Acti-dione RZ used on a regular basis establishes a barrier that continually suppresses the germination of fungal inoculum."

4) Dormant fertilize when the grass is done growing. Depending on the course's location, Cutting recommends applying fertilizer which contains 1-2 lbs. nitrogen in late October to early December before snowfall. By incorporating these transitional management tips into your disease control program, you can achieve disease-free turf as well as early spring green up.

**With 27 field-proven formulas
we may have more solutions
than you have problems.**



**Product integrity and quality
performance are vital to you**

....that's why we offer



And we know price is important

....you can save up to 28%

LET'S TALK "TEE TIME"



R.L. Gould Co., 3711 Lexington Ave. No., St. Paul, MN / (612) 484-8411

SELF-IMPROVEMENT MADE EASY

GCSAA is sponsoring three continuing education seminars this fall - one in the San Francisco Bay area and two in the Chicago area. With GCSAA's educational seminars, keeping up with the latest advancements in the turf and golf industry is no longer an insurmountable task. It's self-improvement made easy.

With the successful completion of each seminar, attendees will receive a Certificate of Achievement and will be granted Continuing Education Units (CEUs). The CEU is a universally recognized standard unit of achievement which may be used as evidence of increased education and for job advancement.

Maximize your performance and increase your value! Come learn with us.....

San Francisco Bay Area - October 20, 21 - Management IV "Documentation: Communication: Motivation" by Ronald C. Frame.

Chicago Area - November 22, 23 - Pest Control Management V "Ornamental Pest Management" by Dr. David G. Nielson and Dr. Donald E. Short.

Chicago Area - November 22, 23 - Management V "Human Resource Management" by Ronald C. Frame.

Visa and Mastercard are accepted.

Contact James G. Prusa or Barbara Gentry at GCSAA Headquarters, 1617 St. Andrews Drive, Lawrence, Kansas 66044.

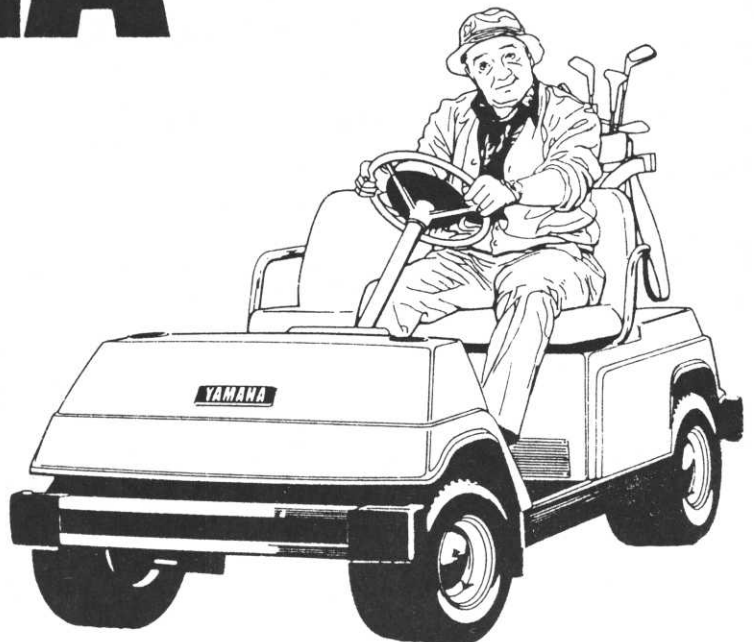
YAMAHA

Engineering Excellence

GOLF CAR MIDWEST

3350 WEST HIGHWAY 13
BURNSVILLE, MINN. 55337

612/890-5541 800/352-2779



YAMAHA
GOLF CARS

Reed's Sales and Service

1260 PAYNE AVENUE • ST. PAUL, MINNESOTA 55101

EXPERT SERVICE • ENGINES, TOOLS, SHARPENING • ELECTRIC AND AIR TOOLS

PHONE 774-9515

REPLACEMENT PARTS

FOR — TORO

JACOBSEN and WORTHINGTON

ROSEMAN RYAN

****SUBSTANTIAL SAVINGS ON ALL MOWER PARTS****

REEL MOWER SHARPENING (1.70 per inch)

PICK UP & DELIVERY AVAILABLE

SPECIAL PRICES ON THE FOLLOWING LINES OF EQUIPMENT.

<u>REELS</u>	<u>REELS</u>	<u>REELS</u>
TORO SPARTAN- 7 blade		\$169.95
TORO GREENSMASER- 4-8 Blade		\$149.00
JACOBSEN FAIRWAY REEL- 6 Blade		\$109.95
JACOBSEN GREENSKING REEL LH & RH		\$97.50
ROSEMAN- 5 Blade		\$119.95

TO ORDER CALL: 774-9515

CONTACT: BILL KAISER

Prices subject to change

****BED KNIVES--COMPARE THESE PRICES****

FAIRWAY MOWERS

TORO SPARTAN 150451 DL	List	\$29.98
Double Lip	NOW	\$24.95

TORO ROUGHMASTER	List	\$63.91
Single Lip	NOW	\$35.95

JACOBSEN 101251 DL	List	\$34.65
Double Lip	NOW	\$26.95

JACOBSEN 101250 SL	List	\$27.25
Single Lip	NOW	\$21.95

GREENSMOWERS

TORO 150460 (thin)	List	\$25.49
150461 (thick)	NOW	\$19.95

JACOBSEN 101260 (thin)	List	\$29.50
101261 (thick)	NOW	\$19.95

ROSEMAN 190650 SL	List	\$28.90
Single Lip	NOW	\$21.95

TORO GROUNDSMASTER

72" unit Blades	List	\$20.49
	NOW	\$13.50

<u>JACOBSEN COMMERCIAL</u>	List	\$11.75
20" 330719 blades	NOW	\$8.50

<u>LAWN-BOY</u>	List	\$8.95
21" 603703	NOW	\$6.50

SALES

FALL SPECIALS

***FALL SPECIALS**

LINE TRIMMERS

GREEN MACHINE 3000 SS	List	\$329.95
	NOW	\$295.00

WEEDEATER XR-90	List	\$249.95
	NOW	\$219.97

CALL REED'S TODAY!

612/774-9515

THATCH REDUCTION

Thatch - a tightly intermingled layer of dead and living stems and roots that develops between the zone of green vegetables and the soil surface. The recommended thickness of the thatch layer on a putting green should range from .125 to .25 inches, this providing the appropriate resiliency desired for proper ball bounce. In addition the thatch layer increases wear tolerance and helps to stabilize the greens micro-climate during temperature extremes.

At this time I would like to shift from the text book facts to the realities some superintendents are facing, thatch layers ranging from .5 to 1.5 inches. Four years ago the putting greens at my golf course were at the upper extremes of this range. At that time I wished to develop a program to reduce this thatch layer which was effective; yet, workable within my budget limitations. My goal was to reduce the thatch to the recommended thickness in three years time. The plan went as follows:

Year One - May

1. Deep groove verticut (knives set .25 inches below the putting surface)
2. Double cut greens to remove runners
3. Topdress with a 7-2-1 mix (this mix is comparable to the greens original construction mix.)

September

1. Aerify greens, remove all cores
2. Topdress heavily and drag in until the aerifier holes are completely filled.

The following spring I found I had excellent results in thatch reduction, but, one must realize the initial reduction in my case of over fifty percent of the original layer which becomes more difficult.

In year two I changed the plan slightly. I did not verticut as deep because I felt the insuing puffiness and scalping were undesirable. The actual plan went as follows:

1. Verticut (knives set .125 inches below putting surface)
2. Topdress lightly
3. Verticut once per month thereafter including July and August
4. Mow greens with combs down at all times
5. Aerify in September remove cores and topdress heavily.

The following spring of 81 I found this program had limited success in diminishing the remaining thatch layer; which was on the average of .5 inches. So, after doing some more research on the subject I set up the third year's program.

1. May - verticut (knives .125 inches below putting surface)
2. Topdress lightly
3. Verticut once per month thereafter
4. Fertilize greens with a soluble nitrogen source on a weekly basis, rates as needed. Mine varied from .25 lbs. of N per 1000 sq. ft. to .10 lbs. per 1000 sq. ft.
5. September - aerify, verticut cores and drag back in.
6. Topdress lightly two weeks later.

**Keep
this card
handy.
It could
save you
time
and
money.**



Mike Redmond

**Senior Technical
Representative**
8364 Kentucky Avenue North
Brooklyn Park, Minnesota 55445
Telephone: 612/425-1028

As of the spring of 82, I am pleased with my results. Since, I did achieve my goal in the third year I have a tendency to attribute my success to the addition of the weekly applications of soluble fertilizer which provide a carbon/nitrogen ratio in the thatch layer more conducive to the decomposition of stem and crown matter. I do not think it can be stressed enough how important this factor is in the decomposition of thatch due to the constant leaching of nitrogen from this layer of the greens profile.

To summarize I would say I found that the problem of thatch reduction was much more difficult than I had imagined. One might find it very easy to be satisfied with the initial results and then curse the ensuing struggle to reduce this layer any further without the manpower or the money to topdress on a more routine basis. However, one will find that persistence in this case has many benefits for the golf course. The obvious being the improved playability of the greens. Other factors include reduced use of wetting agents, dramatic increases in fertilizer efficiency, marked reduction in disease activity, and less sleepless nights.

David Behrman
Deer Creek Golf Course

Credit: "The Bull Sheet" August, 1982 Vol. 32 No.3

LIFE

... is like a TV series. A predictable plot, familiar characters, a few laughs, a few thrills, a few tears, a few golden moments to sell yourself and then just as you're beginning to feel at home with it — it's cancelled.

Little Known (But Pretty Interesting) Facts About Golf Courses

Ecologically, the golf course provides some pretty fantastic help to mankind, in addition to just giving him a place to exercise and enjoy life. For example:

An average 18-hole golf course, approximately 150 acres, can produce enough pure oxygen through photosynthesis for at least 100,000 people for the entire year. On a smaller scale, that means a well-maintained lawn 50 by 50 feet liberates enough oxygen to meet the needs of a family of four, day after day.

That same average golf course of 150 acres can effortlessly absorb 12 million gallons of water during a three-inch rainfall.

Grass also provides a cooling effect. A 2000 square foot plot releases as much as 120 gallons of water through a method called evapotranspiration. This release of water reduces the heat factor. Grass absorbs only 50-60 percent of the incoming solar radiation while buildings and pavement absorb 90 percent.

Grass and tree leaves also help cleanse the atmosphere because of their ability to trap dust particles through static electricity of dense foliage. Rain then washes the particles into the soil.

BIG VALUE – INVENTORY REDUCTION SALE

(USED) RECONDITIONED

- 1-Jake 72"Commercial(LikeNew)Ford 4 cyl.Engine
- 2-Jake Trap King II Trap Rake
- 3-Toro Super Pro
- 4-Toro 70 Tee Mower
- 5-Toro 76 Reel Mower
- 6-Hahn Deluxe Triplex Grnsmower/Verticut Reels
- 7-Gandy 12 Granular Drop Fertilizer Spreader
- 8-Roseman Hollow Roller, 5 gang, 6 blade Mower
- 9-Yazoo 60" Cut Mower
- 10-Howard 60" Cut Mower
- 11-Howard 82" Cut Mower
- 12-National 36" Cut Reel Mower
- 13-Bolens HT-20 Tractor w/60" Mower
- 14-3 Gang Reel Mower, Like New
- 15-Smithco 48" Self Propelled LittleBeaver Spiker
- 16-Turf Vac 48" Vacuum, 2.5 yard Hopper
- 17-Bean 400 gal. Speed Sprayer
- 18-Myers 100 gal. Down Draft Sprayer

NEW

- Yanmar 16to33hp Tractors & Attachments
- Howard Hydro-Power Diesel 15' Cut
- Howard 727 Turf Blazers-Diesel 72"
- Howard Turf Blazers 48" to 60"
- Heckendorn 88" Riding Mower (Manual)
- Smithco 23 hp Performer
- Smithco Easy Rider Trap Rake
- Smithco Athletic Field Conditioner
- Smithco Champion (Manual)
- Turf Vac Vacuums
- Diadem Fertilizer & Sand Spreaders
- Terra 4' and 5' Aerators
- Sovema Tillers
- Myers Sprayers
- Roseman Reel Mowers

KROMER CO.

3455 CO. ROAD 44
MOUND, MINN. 55364

BUS. (612) 472-4167
RES. (612) 473-6920

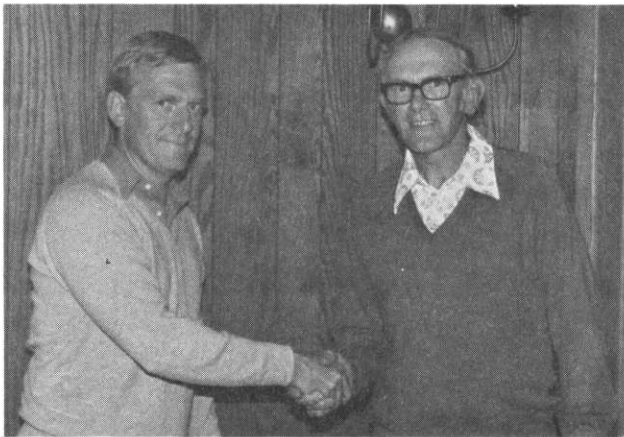
MORE ANNUAL TOURNAMENT WINNERS



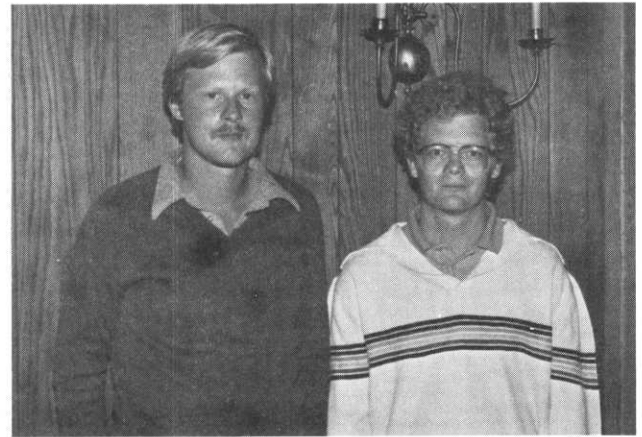
SENIORS FIRST. Low new senior Russ Adams, left, and low net senior Fred Anderson don't look so old to us.



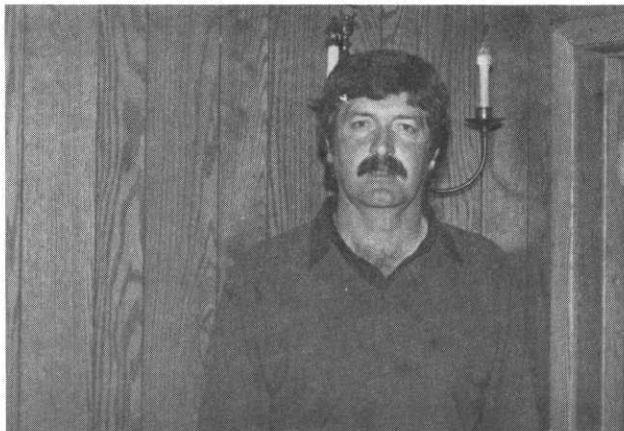
HIGH NUMBER. Dennis Schoenfeldt, high gross winner, says he was well under 300 but not far under 150.



CONGRATS! Steve Wright, low net guest, congratulates Mark Crimmins, low gross guest, on his nice 76.



NAMESAKE. Low net supe winner, Tom Watson, rt., models extra large sweater while 2nd low net winner Paul Feldhake shows correct fit.



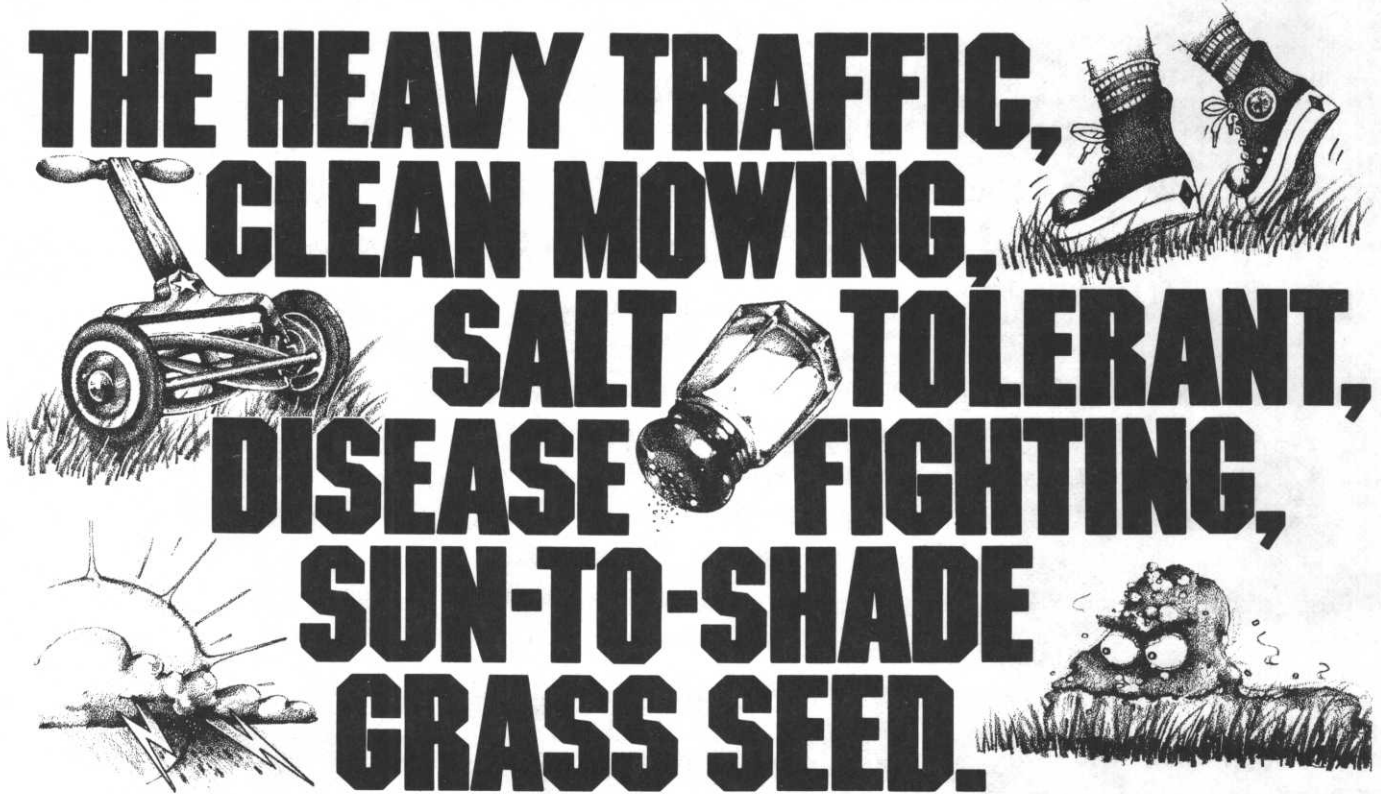
REAL PLAYER. Low pro honors went to Ken Ellsworth of Edina CC who shot a neat two under Par 70.



SHAKE. Happy with their scores are left, Larry Vetter, low gross associate and Carl Tychsen, low net associate.

NORTHROP KING PRESENTS

THE HEAVY TRAFFIC, CLEAN MOWING, SALT TOLERANT, DISEASE FIGHTING, SUN-TO-SHADE GRASS SEED.



No one grass seed combines every characteristic for every type of turf. That's why Northrup King research has developed a complete line of Medalist Turf Products to meet specialized professional needs.

MEDALIST TURF PRODUCT	MAJOR AREAS OF USE	SPECIAL FEATURES
Athletic Pro Mix	High maintenance athletic turf	Both are well suited for new seeding or overseeding. Fast establishing, excellent traffic tolerance, and rapid recovery. Provides good footing.
Athletic Pro II Mix	Low to moderate maintenance athletic turf.	
Boulevard Mix	Any area with high pH (roadsides, sidewalks, boulevards, beachfronts, etc.)	Contains both "Fults" <i>Puccinellia distans</i> and Dawson red fescue which thrive on high saline or alkaline soils. Performs at low to high fertility levels.
Landscape Pro Mix	School grounds, cemeteries, golf course roughs, lawns	Fast establishing. Adapts to broad range of conditions and management levels. Low to moderate fertility requirements.
Overseeder II Mix	Fairways, tees, athletic fields	Fast establishing, traffic tolerant, disease resistant, penetrates compacted soil.
Overseeder III Mix (Formerly Medalist North Mix)	Fairways, tees, cart paths, wear areas	Long term quality in high traffic areas. Clean mowing and disease tolerant.
Premium Sod Blend	Commercial sod producers	Fast establishing, exceptional dark green color, shade tolerant, superior disease resistance.
Special Park Mix	Parks, commercial developments, lawns	Low fertility tolerance, shade tolerant, adapts to wide range of soil types.

Ask your Northrup King distributor about the Medalist Turf Products for your needs. Or write Northrup King Medalist Turf Products, P.O. Box 959, Minneapolis, MN 55440.

