



industrybooks.com BOOKSTORE

offers **SportsTurf** readers a one-stop shop for all books on Turf and related topics. We promise to provide the best reference materials to help build and maintain your business. If you would like additional information on our titles or would like to suggest a title or subject not shown please contact us toll free at (800) 203-2552 or on-line at www.industrybooks.com.



Turfgrass Management Information Directory:
Third Edition
by **Dr. Keith Karnok**
A mandatory reference for all turfgrass instructors and practitioners, the Turfgrass Management Information Directory: 2nd Edition is loaded with helpful information, is completely revised, and has six entirely new sections. Perfect for all turfgrass practitioners and golf course superintendents! 300 pgs.

4097 \$19.95



Sports Fields: A Manual for Design, Construction and Maintenance,
by **Jim Puhalla, Jeff Krans, and Mike Goatley**
This book covers every important aspect of planning, design, construction and turfgrass maintenance with hundreds of illustrations and step-by-step procedures to help you get the job done right. No other book provides such intricate detail, combined with easy-to-understand guidance. Sports Fields is unparalleled in quality, practicality, and scope. 600 pgs.

4084 \$79.95



4191 \$34.95

Picture Perfect: Mowing Techniques for Lawns, Landscapes, and Sports
By **David R. Mellor**

Picture Perfect gives you first-hand, step-by-step guidance on creating your own unique lawn patterns. You'll learn the basic patterns – checkerboard, stripes, diamonds, waves, arches and circles – in simple step-by-step instructions, along with practical advice on equipment selection and use. Patterns are demonstrated in simple instructions followed by dozens of detailed photographs. 160 pgs.



4192 \$95.00

Turfgrass Soil Fertility and Chemical Problems Assessment and Management,
By **R.N. Carrow, D.V. Waddington, P.E. Rieke**

Turfgrass Soil Fertility and Chemical Problems is the best single-source, practical management tool that will help you overcome every fertility management challenge you face! 500 pgs.



4189 \$95.00

Color Atlas of Turfgrass Weeds
By **L.B. Bert McCarty, John W. Everest, David W. Hall, Tim R. Murphy, Fred Yelverton**

Weeds can cause many problems in turf situations. One of most undesirable characteristics of weed infestation is the disruption of turf uniformity – so vital to the golf, sports field, and managed landscape industry. This book explains why, and helps you problem-solve for effective management.



4069 \$49.95

The ABC's of Grounds Maintenance: Volume III
Soccer/Football Field Refurbishment,
by **Grounds Maintenance Service**

Features setting/rebuilding; homeplate area; rebuilding pitchers mound; sodding dugout walkways; application of crushed; brick; rounding infield crescent; complete infield; repair of turf; fertilizing & overseeding, patterns; reducing infield lips; removal of dew from grass; water removal in clay areas; edging the running track. VIDEO. 55 Minutes.

Order Form

<input type="checkbox"/> 4097 \$19.95 Qty <input type="text"/>	<input type="checkbox"/> 4084 \$79.95 Qty <input type="text"/>	<input type="checkbox"/> 4191 \$34.95 Qty <input type="text"/>	<input type="checkbox"/> 4192 \$95.00 Qty <input type="text"/>
<input type="checkbox"/> 4189 \$95.00 Qty <input type="text"/>	<input type="checkbox"/> 4069 \$49.95 Qty <input type="text"/>		

All Orders must include Shipping \$3.00 per book

Charge my VISA MasterCard American Express
Acct# _____ Exp. Date _____

Signature _____

Company Name _____ Contact Name _____

Address (no PO Boxes) _____

City _____ State _____ Zip _____ Country _____

Phone _____ FAX _____

Illinois residents please add 8.25% Sales Tax
Check or money order enclosed for \$ _____

It's easy to order
Call 1-800-203-2552
Fax 847-885-3529

order online @
www.industrybooks.com
or
fill out the order form and mail it to:
Adams Book Guild
250 S. Wacker Drive, Suite 1150
Chicago, IL 60606

ALL SALES FINAL
PAYMENT MUST
ACCOMPANY ALL ORDERS
Please allow 4 weeks for delivery
Prices subject to change without notice

STMA revamps website

Bigger! Better! More interactive! Log on to www.sportsturfmanager.com to check out the Sports Turf Managers Association's newly revamped website.

Connect directly to STMA Officers and Board of Directors via email, or post a question on "Ask the Expert." Browse through the coming events of STMA's 23 chapters and make connections with your local contact.

Scan the latest details of the upcoming 13th Annual Conference & Exhibition to be held January 16-20, in Las Vegas.

Learn about the Certified Sports Field Manager program and see what it would take for you to achieve the CSFM status.

Check out links to publications, research, and more!

For STMA Members to connect with even more sports turf specific interaction, log onto the members only section. If you're not currently a member, go to the STMA Top Five and click on "Join STMA Now" for a special membership offer.

STMA members work to combine the science of growing turfgrasses and the art of maintaining both natural and artificial athletic field materials to provide the best sports surfaces for all levels of play.

For more information, log on to the website or contact STMA Headquarters by phone at (800) 323-3875, or e-mail to: SportsTMgr@aol.com.



Murray Cook manages World Cup baseball diamonds

USA Baseball recently won the silver medal in the 16-team round robin World Cup tournament held in Taiwan. STMA board member Murray Cook provided preliminary and ongoing field operations and management of the four stadiums used in the flurry of rapidly played (so it is still possible!) international games. Team USA used professional players for the first time in the competition, which has been played in locations around the globe since 1938.



Cook, president of SPORTSTurf Services, a division of The Brickman Group, Ltd., said, "We started on the field improvements at each facility about a week before the tournament began. The fields were in poor condition but we were able to locate all the materials needed on Taiwan, so we had safe, professional playing conditions."

Cook's staff for the event included Budgie Clark, Joe Skrabak, and Chad Olsen, as well as fellow STMA board member Tim Moore from Montgomery County Parks in Maryland, and Steve Nunez from Southwest Texas State University.

Miguel Ortin, executive director of the International Baseball Federation, said, "It is important to understand that many of the teams had pro players competing for their home countries besides the US. We had no complaints [about field conditions] whatsoever. The pitchers considered the mounds to be as good if not better than the mounds they threw from in the States."

SPORTSTurf Services provides Major League Baseball with support toward improving field and stadium conditions around the world, including the 2000 Olympics in Sydney and the 2004 Games in Athens, Greece.

Kurtz named outstanding alum

Dr. Kent Kurtz, honorary STMA life member and former *Sportsturf* "Manager of the Year," recently was named Outstanding Alumnus at the 50th annual All Ag Banquet of the College of Agriculture at Southern Illinois University, Carbondale, IL.

Kurtz has been a faculty member since 1969 in the Horticulture/Plant and Soil Science Department at California State Polytechnic University, Pomona. His accomplishments in turfgrass management include consulting on Wrigley Field, Anaheim Stadium, Dodger Stadium, Sun Devil Stadium at Arizona State, as well as preparation for six Rose Bowls, two Freedom Bowls, two Fiesta Bowls, one Super Bowl, and two MLB All-Star contests.

His most impressive contribution to the industry however may be his implementing and guiding the nationally recognized turfgrass management curriculum at Cal Poly. "I enjoy teaching students the basics of horticulture and plant and soil science, then molding them with the upper division courses," says Dr. Kurtz. "When they're finished with their classes and senior projects, I like to help them take their places in the turfgrass industry."

ITODA elects new officers

The Independent Turf & Ornamental Distributors Association has elected Don Naumann of Sierra Pacific Turf Supply, Campbell, CA, president of the national, non-profit organization.

Naumann was elected at the Registry Resort here during the fall meeting of ITODA, which was formed in 1990 to foster the trade, commerce, and interest of those engaged in the business of servicing and marketing turf and ornamental products. Naumann founded Sierra Pacific Turf Supply 19 years ago and distributes products for the golf, landscape, and viticulture industries.

He heads a new slate of officers, including vice president Chris Petersen of Tom Irwin, Inc., Natick, MA, and treasurer Brian Feury of The Terre Co., Clifton, NJ.

ITODA members also elected six Directors at Large: Jim Harris, Chas C. Hart Seed Co., Wethersfield, CT; Mike Fisher, Fisher & Son, Inc., Malvern, PA; Steve Dickinson, Supreme Turf Products, Eureka, MO; John Wiley, Turf Supply Co., Eagan, MN; Rick Grant, Griffin LLC, Noblesville, IN; and Jim Turner, Simplot, Bradenton, FL.

For association information, call 810-229-9405 or email ITODAoffice@aol.com.



Winners of the John Deere International Team Golf Championship, from Whitepath Golf Club, Ellijay, GA (l to r): Tony Smith, club manager, Tim Land, club president, Mike Brumby, course superintendent, Lonnie Reece, golf professional, and Dane Harger, distributor rep. Thirty-five teams from around the world participated in 15th annual event, held at Grayhawk Golf Club, Scottsdale, AZ.

Repairing skinned areas

Standard Guide for Construction and Maintenance of Skinned Areas on Sports Fields, published by the American Society for Testing and Materials (ASTM), offers advice on repairing natural turfgrass, sand, clay, brick, gravel, or crushed stone. The standard covers repairing ruts, holes, and worn areas.

Sections specific to baseball and softball fields can be applied to any natural playing surface where ball movement and player contact are factors, says ASTM. Field maintenance managers, infield mix manufacturers, soil amendment manufacturers, field designers and builders, sports field managers, and university faculty developed the guide.

ASTM standards are available by calling 610-832-9585 or the website store, www.astm.org.



CYGNET TURF

salutes all the overworked, under-appreciated professional groundskeepers including park, city, and municipal workers that have made such a difference in the appearance and safety of all our ballfields throughout the country; from the little leagues to the major leagues, from the local soccer fields to the state-of-the-art Columbus Crew Stadium, from the Pop Warner football fields to the N.F.L. stadiums. **GREAT JOB, GUYS!!!**

We would particularly like to thank some of the groundskeepers and staffs that we have had the privilege of working with this past year:

Roger Bossard
Rick Izzo
Kirk Sausser
Gary Vandenberg
Heather Nabozny
Andre Bruce
Mark Clay
Jim Duggan
Michael "Spin" Martin
Vince Patterozzi
Chris Powell
Keith Van Der Leest
Al Johnson
Ken Mrock
Dale Wysocki
Tim Keene
Tracey Jones
Joe Zelinko
Rob Montgomery
Darian Dailey

Chicago White Sox
Akron Aeros
Toledo Mud Hens
Milwaukee Brewers
Detroit Tigers
Kansas City Chiefs
Alltel Stadium SMG
Soldier Field SMG
Indianapolis Colts
Baltimore Ravens
Cleveland Browns
Alltel Stadium SMG
Green Bay Packers
Chicago Bears
Minnesota Vikings
Pittsburgh Steelers
University of Michigan
Athletic Field Services
Sylvania Parks & Recreation
Columbus Crew Stadium

And to all the many groundscrew workers, we thank you for giving us the opportunity to work with and beside you, and we look forward to working with you in the future.



4711 Insley Road
North Baltimore, OH 45872
(419) 354-1112
(419) 655-2020
(419) 352-1244 FAX

Florida Chapter #1: The Florida Chapter will participate in the Florida Turfgrass Association Regional Seminar to be held January 22, 2002, in Lake Worth, Florida.

For information on the Florida Chapter, or pending activities, call John Mascaro at 954-341-3115.

Iowa Sports Turf Managers Association: The Iowa Chapter will participate in the 68th Iowa Turfgrass Conference & Trade Show to be held January 28 – 30, 2002, at the Polk County Convention Complex in Des Moines, Iowa. The Sports Turf Workshop is scheduled for 8:30 am to 4:00 pm on January 28. On the program are: Mike Andresen, CSFM, presenting "Budget & Record Keeping; Kevin Vos, CSFM, on Reducing Soccer Field Wear; Ted Thorn, Julie Smith, Ken Hanawalt, and Dr. Dave Minner presenting Construction Case Studies, and Dr. Tony Koski presenting Soil Testing & Interpretation and Tips for Healthy Roots. The Tuesday afternoon Sports Turf session includes: Dr. Joe Vargas on Disease Management and Thatch Control; Bob Campbell, CSFM, with a Show and Tell presentation and the ISTMA Annual Meeting. The Wednesday morning Sports Turf Session includes: Bob Campbell, CSFM, presenting Survival Tips for Groundskeepers; Nick Gow on Low Budget Renovation; and representatives from KCCI-TV8 on Living with Mother Nature.

For information on the Iowa Chapter, or upcoming activities, contact Lori Westrum of The Turf Office at tel. 515-232-8222, or fax 515-232-8228, or e-mail: Lori@iowaturfgrass.org.

Mid-Atlantic Athletic Field Managers Organization (MAFMO Chapter STMA): The MAFMO Chapter will participate in the Maryland Turfgrass 2002 Conference and Trade Show to be held January 29 – 30, 2002, at the Baltimore Convention Center in downtown Baltimore, Maryland.

For information on the MAFMO Chapter, or pending activities, call the Hotline at 410-290-5652.

Keystone Athletic Field Managers Organization (KAFMO/STMA): The Sixth Annual KAFMO/PRPS Athletic Field Conference will be held from 8:00 am to 3:45 pm on February 15, 2002 in Grantville, PA. Educational sessions include: "Professionalism and Certification for the Sports Turf Manager," presented by STMA Executive Director Steve Trusty; "Brownfield to Greenfield Sports Complex," by Greg Petry, Executive Director of the Waukegan Illinois Park District; "The National Turfgrass Evaluation Program (NTEP)," by Kevin Morris, NTEP Executive Director; "Comprehensive Risk Management for Parks, Recreation and Sports Fields," by Greg Petry; and "Cultural Approaches to Disease Control," by Dr. Mike Fidanza Penn State University.

For information on the KAFMO/STMA Chapter or upcoming events, contact Dan Douglas, Reading Phillies Baseball Club, at tel. 610-375-8469, ext. 212; or e-mail to: kafmo@aol.com.

Ohio Sports Turf Managers Association (OSTMA): OSTMA has awarded its scholarships for 2001. The recipients are: John Torres, Owens Community College student – the \$500 Profile Products/OSTMA Education

Scholarship; Matt Grosjean, Owens Community College student – the \$500 OSTMA Educational Scholarship; Todd Rinehart, Ohio State University student – the \$500 OSTMA Educational Scholarship; and Aaron Weiskittle, Grounds Supervisor at Sylvania Recreation Corporation – the \$500 OSTMA National Conference Scholarship. The Chapter extends congratulations to all these scholarship recipients.

For information on the OSTMA Chapter, or upcoming events, call OSTMA Headquarters at 740-452-4541 or Boyd Montgomery at 419-885-1982; or visit the chapter's website at www.glstma.org.

Sports Turf Managers Association of Arizona: For information on the chapter, or other upcoming events, contact Bill Murphy, Recreation and Facilities Manager, City of Scottsdale Park, at e-mail: bmurphy@ci.scottsdale.az.us or tel. 480-312-7954.

Southern California Chapter: For information on the Southern California Chapter, or pending activities, call Ron Kirkpatrick at 858-453-1755.

Northern California Chapter of the Sports Turf Managers Association: For information on the Nor-Cal Chapter, or pending events, call Janet Gift at 530-758-4200.



Colorado Sports Turf Managers Association: For information on the Colorado Chapter, or upcoming activities, visit the Chapter's website—www.CSTMA.org—or call the CSTMA Chapter Hotline at 303-346-8954.

Gateway Chapter Sports Turf Managers Association: For information on the Gateway Chapter, or upcoming events, call Jim Anthony, Saint Louis University, St. Louis, MO, at 314-977-2956.

Indiana Chapter: For information on the Indiana Chapter, or pending activities, call Terry Updike, B & B Fertilizer, at 219-356-8424.

Michigan Sports Turf Managers Association (MiSTMA): For information on the Chapter or other pending events, call Rick Jurries, West Ottawa Public Schools, at 616-738-6974, or go to www.mistma.org to visit the chapter's new website.

Midwest Chapter STMA: For information on the Midwest Chapter, or pending activities, visit the Chapter's website-<http://mcstma.org/>, or call The

Chapter Hotline at 847-622-3517.

Minnesota Chapter STMA: For information on the Minnesota Chapter, or upcoming events, contact Ron Unger, Director of Parks & Recreation, City of Kasson, at tel. 507-634-4165 or e-mail: ParkNRec@CityofKasson.com.

MO-KAN Sports Turf Managers Association: For information on the MO-KAN STMA Chapter, or upcoming events, call Trevor Vance at 816-504-4271; Gary Custis at 816-460-6215; or Jody Gill at 913-239-4121.

Nebraska Sports Turf Managers Association: For information on the Nebraska Chapter, or upcoming events, call Gregg Bostelman, City of Grand Island, at 308-385-5426.

Sports Field Managers Association of New Jersey: For information on the New Jersey Chapter, or upcoming events, call Jim Gavigan, Lesco, at 732-248-8979; or call Eleanora Murfitt, at 908-236-9118; e-mail to SFMANJCHAPTER@netscape.net.

Tennessee Valley Sports Turf Managers Association (TVSTMA): For information on the TVSTMA Chapter, or upcoming events, call Bill Marbet, Southern Athletic Fields, Inc., at 931-380-0023 or 800-837-8062.

North Texas Sports Turf Managers Association: For information on the North Texas Chapter, or pending activities, call Kayla McAfee at 972-234-6584 or Rene Asprion at 972-647-3393, or visit the website at www.ntstma.org.

South Texas Sports Turf Managers Association: For information on the South Texas Chapter, or upcoming events, call Tom McAfee, Nelson Wolff Municipal Stadium, San Antonio, at 210-207-3754, or Pat Searight at 254-718-4421.

Virginia Sports Turf Managers Association: For information on the Virginia Chapter, or upcoming events, contact: Chapter Vice President, Randy Buchanan, County of Henrico Recreation and Parks, via e-mail: buc06@co.henrico.va.us or at tel. 804-261-8213.

Wisconsin Sports Turf Managers Association: For more information on the Wisconsin Chapter, or other pending events, call Richard Miller at 608-756-1150.

Chapters On The Grow

Las Vegas: With the STMA Annual Conference & Exhibition headed for Las Vegas January 16-20, 2002, plans for the formation of a Las Vegas Chapter also are moving forward. For more information on the developing chapter, please contact Rod Smith, Grounds Manager/Cashman Center at e-mail: rms@lvvva.com or at tel. 702-386-7140.

New York: A chapter is forming in Central New York. The group will meet at 10:30 a.m. on the third Wednesday of each month at the National Soccer Hall of Fame. Contact Kevin Meredith, National Soccer Hall of Fame, at e-mail: Kevin@wpe.com or at tel. 607-432-2953.

KAFMO outing nets more than \$500 for scholarships

BY DAN DOUGLAS

The Keystone Athletic Field Managers Organization (KAFMO) chapter of the Sports Turf Managers Association held its 1st Annual Scholarship Fundraising Golf Outing at the Overlook Golf Course in Lancaster, October 22, 2001. Thirty-seven golfers participated in the event that raised money for the KAFMO scholarship fund. Hole sponsorships and raffle prizes were donated by more than 20 companies.

The sloping fairway of hole number one featured a large KAFMO logo painted by Chris Lessig of the Manheim Township Parks and Recreation Department. The highlight of the day was a hole-in-one by Steve LeGros of Hershey Sports and Entertainment. LeGros partnered with Webb Cook, Leroy Hurst, and Dan Douglas to win the scramble tournament. Food, drink, raffle prizes, and socializing followed the round of golf.

KAFMO would like to thank the vendors who supplied the hole sponsorships and raffle prizes and all of the golfers who played in the outing. The money raised from the day of fun will help support a sports turf student in Pennsylvania. **ST**



Our innovations in sport and recreational surfaces, are born of experience, research and testing.

Stabilizer Solutions, Inc. is the developer of **Stabilizer™** the all climate, natural cohesive for crushed stone and native soil infield mixes. Other product innovations in sport surfaces include **TurfGrids®** and **Hilltopper™**. **TurfGrids®** fibers stabilize turf for baseball, football or soccer fields, equestrian venues and golf courses. **Hilltopper™** is a polymer coated clay for baseball or softball mounds and home plate areas.



Stabilizer™ our natural soil amendment provides an outstanding infield or warning track when mixed with a screened blend of sand, silt, clay or crushed stone. This mix provides a firm, resilient playing surface that has less mud and dust. It has good water bearing capacity and load bearing strength, retains flexibility, cushion and reduces wind and water erosion. It can be used with other ballfield amendments. Stabilizer is available internationally as a bagged component to be mixed on-site.

Stabilizer Pre-Mixes are available from our regional dealers. We have developed Pre-Mixes for Infields, Warning Tracks, Soccer Fields, Pathways, Parking and Recreational Areas. Contact us for a dealer near you.



Optimize your turf's
shear strength & load bearing

TurfGrids® are safe, non-toxic, polypropylene fibers that help provide a consistent athletic surface that can be worked and maintained with conventional equipment. These small fibers act as a mass of indestructible roots. Turf roots intertwine and interlock with these "fiber roots" resulting in an extremely strong reinforced turf surface that resists divoting and rutting. TurfGrids® can be used for complete field stabilization or in selected high wear areas. TurfGrids® are a proven performer on all types of turf surfaces including, golf courses, turf race tracks, baseball, football and soccer fields. **Improve Stability, Drainage, Divot Resistance, Aesthetics and Durability**

205 South 28th Street
Phoenix, Arizona 85034 U.S.A.

www.StabilizerSolutions.com
email: lphubbs@stabilizersolutions.com

Circle 134 on Inquiry Card



Make a good field better
with Hilltopper™

Hilltopper™ is a simple solution to improve the flexibility of your mound and home plate areas. Hilltopper needs no water, just spread and tamp. It's ready for play! Installation or repair takes half the time of traditional clay products due to Hilltopper's unique mix of long lasting binders, coatings and natural clays.

This product is available in 50 pound bags (40 per pallet).

U.S.A. toll free 800•336-2468
In ARIZONA tel 602•225-5900
all areas fax 602•225-5902

Water-Reels® for Sports Turf Irrigation



Kifco has introduced a line of Turbine Drive Water-Reels® to complement the popular line of Bellows Drive machines. These self-traveling sprinklers are ideal portable irrigation systems for all types of turf grass. Machines are available for both large and small areas. Water-Reels® are compact, easy to use, operate unattended and shut down automatically. Kifco has specialized in traveling irrigators for more than 35 years.



P.O. Box 290, Havana, IL 62644
Ph: 309-543-4425. Fax: 309-543-4945.
Web Site: www.kifco.com

Circle 135 on Inquiry Card

**Mar Mound
CLAY**



- *Reduces high stress areas*
- *Red in color*
- *Sand-Silt-Clay mix for greater compaction and bonding*
- *Used throughout the United States by professional groundskeepers*
- *Available in 50 lb. bags or bulk*
- *Call for other quality products*

Southern Athletic Fields
1.800.837.8026
www.mulemix.com

Circle 136 on Inquiry Card

HARCO Fittings to Last a Lifetime!



HARCO Fittings are proven to last for the life of your system. Through years of experience in the irrigation industry HARCO has developed Ductile Iron and PVC fittings that work. Through Surge Resistant Ductile Iron and Corrosion resistant PVC you can bury our fittings with confidence you will never have to see them again.



Call HARCO or your Local Irrigation distributor today or visit our website www.harcofittings.com
sales@harcofittings.com
(800) 825-7094

Circle 137 on Inquiry Card

Earth&Turf



A topdresser designed for sports turf managers!

**MultiSpread™
300**

- **Larger capacity!** 22 cubic ft hopper
- **More Versatility!** Choose a brush or a beater spreading system (spread pattern 36"-72")
- **Simple Design!** For low maintenance
- **Affordable!** One-person operation with easy, No-Tools spread adjustment



Circle 138 on Inquiry Card

THATCH - MASTER

**48" & 60"
FINE TURF VERTI-CUT**



1. Commercial quality fine turf verti-cut
2. PTO powered - 20 to 30 H.P.
3. Thin (.060) blades do NOT leave grooves
4. Extremely low maintenance
5. Fast

Turf Specialties, Inc.

320 Third Street, S.W.
Winter Haven, FL 33880
Telephone: (863) 289-3330

Circle 139 on Inquiry Card

TRU MARK

FIELD MARKING EQUIPMENT & ACCESSORIES

"Paint Mule"



RS-500

E-100

**PROVIDING QUALITY EQUIPMENT
FOR THE NATION'S
LEADING GROUNDSKEEPERS**

www.trumarkafm.com
1-800-553-MARK

Circle 140 on Inquiry Card

For classified advertising rate information, contact Chris Dziubla at 630-295-9617.

FOR SALE

GOT PAINT?

GET IT!

A F M

(Athletic Field Markings)

by

F P C

www.franklinpaint.com

1-800-486-0304

FOR SALE 50% OFF

Used Verti-Drain Parts

All parts in good serviceable condition.
Commercial Turf and Tractor 800-748-7497

HELP WANTED

SALES TURF CARE PROFESSIONAL

East Coast, distributor of nursery stock, seed, fertilizer & other turf products for golf course, athletic fields, & park prof market, seeks industry sales professional for VT, NH, ME. Candidate must have an excellent record of recent exp. in selling to the prof turf market, or recent exp. as a Turf Mgr. with excellent product knowledge. Please submit resume with reference in strict confidence to: NORTHERN NURSERIES, 1695 King St. Enfield, CT 06082

GROUNDSKEEPER PRO PLAYER STADIUM

Work for one of America's premier stadiums, Pro Player Stadium, home of the Miami Dolphins, Florida Marlins and host to international events.

WHAT YOU DO: Ability to work nights, weekends, & holidays. Field maintenance for M.I.B, NFL, Special Events & various off-field duties.

WHAT YOU NEED: HS diploma/GED equivalent & groundskeeper experience highly preferred.

HOW YOU BENEFIT: Medical/dental/life ins.; disability insurance; 401(k); NFL pension plan; vacation, sick, personal days, & discounted tickets for select events; & More!

For consideration call our Job Hotline: 305-623-6211; Fax 305-623-6276; or Email: dkolman@proplayerstadium.com. EOE/MFDV Pro Player Stadium is a Drug Free Environment.

We apologize for the typographical error in Northwestern University's ad for the Agronomist. It should have read, "Department of Athletics and Recreation"

Advertising Sales Staff

CT, DC, DE, IN, MA, ME, MI, NH,
NJ, NY, OH, PA, RI, VT

Paul Garris

35 Greenbriar, Aurora, OH 44202

(330) 562-2512, (330) 562-3512 (fax)

pgarris@mail.aip.com

AK, AZ, CA, CO, HI, ID, MT, NM,
NV, OR, UT, WA, WY

John Bolduc

P.O. Box 12357

Orange, CA 92859

(714) 538-4730, (714) 538-4785 (fax)

jbalduc@mail.aip.com

AL, AR, FL, GA, KS, KY, LA, MD, MS,
NC, OK, SC, TN, TX, VA, WV

Deanna Morgan

2565 N. Arbor Trail,

Marietta, GA 30066

(678) 445-5211, (678) 445-5611 (fax)

dmorgan@mail.aip.com

IA, IL, MN, MO, NE, ND, SD, WI
Colleen Murphy

Millennium Marketing Group, Ltd.

2028 N. Stanton Ct., Arlington Heights, IL 60004

(847) 590-1162, (847) 590-1163 (fax)

cmmurphy@earthlink.net

Advertisers' Index

Company	Page #	R.S.#	Company	Page #	R.S.#
Aerway	48	129	Pro's Choice	33	117
Bannerman	25	113	Profile Products	36	119
Becker-Underwood	39	121	Seed Research of Oregon	47	127
Broyhill	48	128	Southern Athletic Field	56	136
Carolina Green	45	126	Southern Green	58	141
Colbond Geosynthetics	50	131	Stabilizer Solutions	55	134
Covermaster	37	120	Textron Golf & Turf	5	102
Cygnat Turf	53	133	TifSport	17	108
Delta Bluegrass Co.	41	123	Toro	13	105
Diamond Pro	27	114	Toro	14	106
Earth & Turf	56	138	Turf Seed, Inc.	49	130
First Products	40	122	Turf Specialties	56	139
Florasport	18	109	Turfgrass America	7	103
Geoturf	9	104	Turfgrass America	BC	143
Harco Fittings	56	137	Typar Turf Blankets	19	110
John Deere	30-31	116	United Horticulture Supply	29	115
Kifco, Inc.	56	135	Varicore Technologies	IBC	142
Lebanon Turf Products	2-3	101	W.A. Cleary Chemical	43	125
Lebanon Turf Products	21	111	Wagner Industries	56	140
Lebanon Turf Products	23	112	West Coast Turf	15	107
Pacific Sod/Pacific Resources	42	124	World Class Athletic Services	35	118
Partac/Beam Clay	50	132			

Scheduling irrigation

What is the best way to schedule our irrigation cycles? I am at a new municipal park and athletic facility with bermudagrass (Tifway) that was grown-in the last few months. We currently water each field each night to replace daily ET losses. Our fields tend to be a little on the wet side. For the most part, we can only run the in-ground system at night. Since our run times are pretty short, we can get all the fields watered before our crew arrives in the morning.

Oahu, Hawaii

With a grow-in, turf is often watered much more than once the turf is established and has a more mature root system. Irrigating with frequent light watering on mature turf is generally not recommended. This method never allows the soil profile to be wetted to any depth, encouraging shallow root growth. With proper irrigation scheduling, turf health will not be limited by water stress from droughts and the waste of water and energy used in pumping will be minimized.

While ET is an oft-used method for irrigation scheduling, it does have its flaws. Most ET information is based on a model that predicts water use since actual on-site measurement is often impossible. These methods generally make an assumption that climatic data used is directly correlated to how the turf responds under those conditions. I understand that these methods (models) are better for long-term prediction but

have some limitations for the short-term. Soil moisture status has also been used to determine soil moisture depletion.

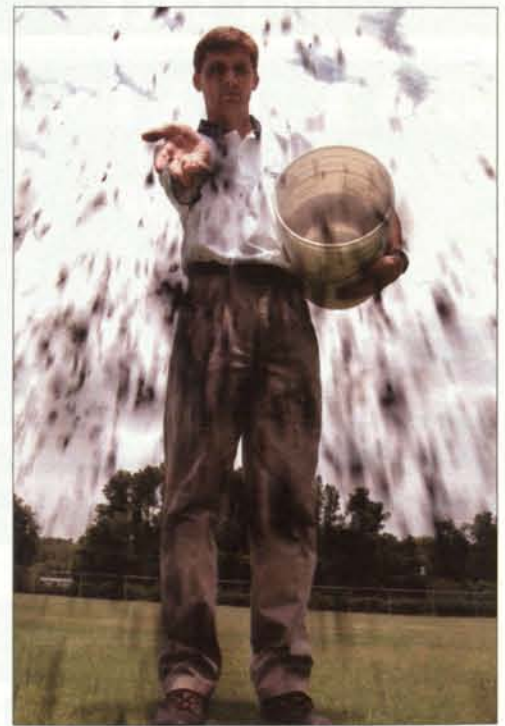
Wilting point

During irrigation, water is distributed in the soil by gravity and capillary forces until it begins to drain downward. At this time, soil moisture in the root zone may be considered to be in storage, depleted primarily by ET. This upper limit of water storage is called "field capacity." If water in the soil is not replenished as it is removed, the plant will eventually show water stress and begin to wilt. This low limit of soil water has been defined as the permanent wilting point. The difference between field capacity and permanent wilting point is available soil water. This available soil water is what allows you to stretch your irrigation interval, depending upon ET rate. Soil type has a significant influence on available water capacity. There are actually water budget methods to calculate available soil water with ET losses and irrigation/rain additions. Allowable depletions of 1/2 to 2/3 of the available soil water are commonly used to schedule irrigations.

Because irrigation's objective is to maintain a favorable water status for turf health, the plants themselves are the best indicators of the need for it. Moisture-stressed grass appears blue-green or grayish-green in cooler, recuperates slowly (>1 minute) after walking or driving across it, or wilts continuously. This is because a plant rolls its leaves and wilts to conserve moisture. Often certain areas or patches of turfgrass tend to wilt before others due to poor irrigation distribution, to poorly developed root structure, or to a localized dry spot from a soil influence. It is good that you are irrigating at night when efficiencies can be maximized.

Since you are already using an ET-based method, I would suggest that you also include some plant-based observations into your scheduling so that you can increase your irrigation interval. By lengthening the interval between irrigations, you are maximizing the root systems. Plants tend to have continued root growth relative to shoot growth during periods of water stress. This results in an increase in the root-to-shoot ratio and is an important mechanism for avoiding drought stress. You can increase this interval by understanding a little more about your soil-water storage.

But I don't think elaborate calculations are necessary to determine when to water. Just a basic understanding of the available water and some careful observations can be used very effectively. After a thorough watering, monitor your fields for "hot spots" or general drought stress. Using your ET information and experience, you should be able to determine how much water is available in your soil. Therefore you can predict with ET when your plants will begin to show signs of stress and require an irrigation cycle. Depending upon sunlight, relative humidity, temperature, wind, rainfall, and available soil moisture, you may need irrigation after one day, or you may be able to go months. You will generally not need to water every day. I also suggest that you replace a less than the total ET loss when you irrigate, especially if rain is in the forecast.



Soil Reliever Model 75 Heavy Duty



For deep tine aerification in the toughest conditions, you can't beat the performance of our new SR75 HD.

This machine is built specifically for deep aeration in heavily compacted soils.

If your sports fields are suffering from problems associated with compaction and poor drainage, call Southern Green about our complete line of deep tine aerators.



Breathin' a Whole Lot Easier!®

Proven performance, high productivity, superior design and construction, is what you can expect from the Soil Reliever by Southern Green.

Circle 141 on Inquiry Card

Have Questions?

Send them to Grady Miller at the University of Florida, PO Box 110670, Gainesville, FL 32611, or email glmi@ufl.edu. Or, send them to Dave Minner at Iowa State University, 106 Horticulture Hall, Ames, IA 50011, or email dminner@iastate.edu.

ST



Maybe it's time to consider a better drainage system.

A Multi-Flow drain system will bring you the best drainage that technology has to offer, without the use of heavy construction equipment. You can have unparalleled performance, longer life, and have the site ready for use in no time. Just drop the Multi-Flow in a 4" wide trench,



backfill the trench with coarse sand, and jet the trench with water. That's it! Should be expensive right? Wrong. Typically a Multi-Flow system will be half the cost of a French drain, and will last many years longer. Do it right the first time, use Multi-Flow drainage systems.

MULTI-FLOW
drainage systems by Varicore

Contact Varicore Technologies, Inc. at 800.978.8007 or Fax 320.978.6607

www.varicore.com • e-mail: service@varicore.com

Circle 142 on Inquiry Card