



Circle 101 on Inquiry Card

# IF YOU'RE NOT AN EXPERT IN YOUR FIELD,

## YOU'RE NOT ON THIS FIELD AT ALL.

The Rose Bowl\* is not just a stadium. It's a place where championship traditions have been nurtured, and legends created, for more than a century. But for the turf professional, it's also considered a benchmark of quality. Needless to say, there's no room for amateurs here. Which is why the Rose Bowl stadium chose Toro. After working with the top pros in the turf business for more than 85 years, we've learned how to respond to your needs better than anyone else.

With irrigation and maintenance equipment, simple innovations, and advice that makes your job easier, trust the expertise of Toro for your athletic fields and grounds. You'll be in good company.

\*No connection with or sponsorship by The Tournament of Roses.



*Rose Bowl*

**TORO**

**IT'S ABOUT  
PRODUCTIVITY**

# sportsTURF®

## PROGRAM

VOLUME 16, NUMBER 6

JUNE 2000

### Cover Story

#### 8 Success Soars at Redbird Softball Complex

Learn the secrets of success that made Illinois State University's softball field the 1999 STMA/Beam Clay/sportsTurf College Softball field of the Year.

### Main Events

#### 14 Mowing: Height Manipulation

Mike Andresen, CSFM, and Leo Goertz discuss mowing strategies for fields with cool season and warm season grasses.

#### 24 Effective Irrigation Scheduling

Robert Bodi returns with advice on how to create an efficient irrigation schedule. Second in a three-part series.

#### 27 The Roots of the Matter

Take an in-depth look at turfgrass roots and what turf managers can do to enhance root growth on their fields.

### Web Site Content

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

STMA Newsletter

Editor's Review: Industry News

Show Calendar

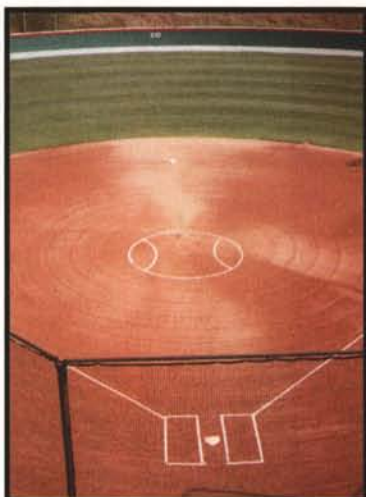
Reader Survey

Rookies

### Line-Up

-  Front Office .....6
-  Tip o' the Month.....6
-  Calendar.....6
-  STMA Message .....7
-  Product Spotlight ....32
-  Chapter News .....34
-  Classifieds .....41
-  Advertisers' Index ....41
-  FYI.....42

### On the Cover:



Redbird Softball Complex at Illinois State University, Normal, Ill.  
Photo courtesy of: Illinois State University

Adams  
BUSINESS MEDIA

Sports  
Turf  
Managers Association

2101 S. Arlington Heights Rd., #150 Arlington Heights, IL 60005  
Ph: (847) 427-9512 Fax: (847) 427-2006 Web: <http://www.greenindustry.com>

#### THE OFFICIAL PUBLICATION OF THE SPORTS TURF MANAGERS ASSOCIATION

PRESIDENT RICH MOFFITT  
PAST PRESIDENT STEPHEN GUISE  
PRESIDENT ELECT L. MURRAY COOK  
COMMERCIAL V.P. LYNDA WIGHTMAN  
SECRETARY TIM MOORE  
TREASURER BOB CAMPBELL  
STMA BOARD MEMBERS MIKE ANDRESEN, TOM BURNS, TONY KOSKI, MONTY MONTAGUE, DAVID RULLI, MIKE TRIGG  
EXECUTIVE DIRECTOR STEVE TRUSTY

#### STMA OFFICE

1375 ROLLING HILLS LOOP, COUNCIL BLUFFS, IA 51503  
PHONE: (800) 323-3875  
E-MAIL: [SportsTMgr@aol.com](mailto:SportsTMgr@aol.com)  
WEB SITE: [www.sportsturfonline.com](http://www.sportsturfonline.com)

#### INTEGRATED CONTENT TEAM

GROUP CONTENT/  
EDITORIAL DIRECTOR KURT LUCHS  
EDITOR MIKE SANFILIPPO  
CALENDAR EDITOR STEVE NOE

#### PRODUCTION TEAM

SENIOR ART DIRECTOR SUSAN ZIRBEL-BELLM  
GRAPHIC DESIGNER DEANA CHRISTENSEN  
PRODUCTION MANAGER ANNA DRONJAK

#### ADAMS BUSINESS MEDIA

PRESIDENT, CEO MARK ADAMS  
EXECUTIVE V.P., PUBLICATIONS THOMAS J. CORCORAN  
SR. V.P., CHIEF FINANCIAL OFFICER GEORGE KANE  
V.P., H.R., R.M. MARGIE DAVIS  
V.P., INTERNET DANIEL J. CORCORAN  
V.P., MARKETING SVCS. GROUP LIZ SANTELLI  
V.P., TRADE SHOW & CNFC. GROUP BAILEY BEEKEN  
V.P., DIRECTOR OF CIRCULATION JACQUELINE M. SERRA  
ASST. V.P., MIS PETER BALINT

#### DIRECT MAIL LIST SALES

LIZ DASCH  
(800) 548-5918

#### REPRINT SERVICE

LISA ADKINS  
(847) 427-2024

#### SUBSCRIPTION SERVICES

PHONE: (856) 786-6805 FAX: (856) 786-4415

#### ADVERTISING TEAM

SEE PAGE 40

**Publisher's Notice:** We assume no responsibility for the validity of claims in connection with items appearing in *sportsTURF*. Reader Service Numbers are given to facilitate further inquiry. Commercial product names are used for the convenience of the reader. Mention of a commercial product does not imply endorsement by *sportsTURF* or Adams Business Media, or preference over similar products not mentioned.

*sportsTURF* (Reg. U.S. Pat. & T.M. Off.) (ISSN 1061-687X) (USPS 000-292) is published monthly by Adams Business Media. Material in this publication may not be reproduced or photocopied in any form without the written permission of the publisher.

Copyright © 2000. Member of the  
Business Publications Audit of Circulation, Inc.



#### SUBSCRIPTION RATES

ONE YEAR \$40 TWO YEARS \$65  
FOREIGN (ONE YEAR) \$65 • \$130 Airmail or Single Copy \$5

#### CHANGE OF ADDRESS AND SUBSCRIPTION INFORMATION

Provide old mailing label and new address; include ZIP or postal code. Allow 6-8 weeks for change. Send payments and correspondence regarding subscription service to: *sportsTURF*, P.O. Box 10515, Riverton, NJ 08076-0515, (856) 786-6805.

#### PERIODICALS POSTAGE PAID

at Arlington Heights, IL and at  
additional mailing offices.

Postmaster: Please send change of  
address to *sportsTURF*, P.O. Box 10515,  
Riverton, NJ 08076-0515.

# For perfect diamonds as easy as 1,2,3!

## 1. EDGE IT

With its adjustable guide shoe, the Bannerman **Diamond Edger** is surprisingly easy-to-use. Its three-inch blade depth and reversible, 20-inch concave disc work together to quickly eliminate ridging. Debris is spiraled into the infield for fast and easy clean-up.



DIAMOND EDGER: MODEL NO. B-DE-20



DIAMOND MASTER: MODEL NO. B-DM-6

## 2. GROOM IT

The **Diamond-Master**® (pictured) and **Ballpark-6**® groomers will give your ball diamonds a surface just like the professional teams demand, and reduce the time, effort and labour required to do the job.

## 3. LINE IT

The Bannerman **WetLiner** is a simple, practical tool for line marking of turf surfaces. Other wet liners spray, while our WetLiner paints each blade of grass to the ground for solid, longer lasting lines. Paint saver roller is available as an option.



WET LINER: MODEL NO. B-WLM-234



41 Kelfield Street, Rexdale, Ontario, Canada M9W 5A3  
CANADA 1-800-325-4871  
USA 1-800-665-2696

# Bannerman

## THE HOME OF SPORTSTURF MAGIC



## Difference of Opinion

Let me step aside for a moment and give the bulk of this space to some feedback I received about Dave Minner's "Q & A" from March 2000. Let me also add that I would appreciate more feedback on the magazine—positive and negative—and, while I can't promise all letters to the editor will be published in the magazine, I will include them for review on our Web site.

Dear Editor,

We have just concluded reading the article "Dealing with Hardpan," and offer the following additional comments for your consideration.

Dr. Minner's response was informative as far as it went, but the table which he used for his basis was obviously out-of-date. The chart may have been produced prior to the advent of the AerWay Shattertine technology as it discussed only the traditional turf cultivation equipment. As the question related to the AerWay, the use of the chart and subsequent conclusions may be misleading to your readership.

If the chart were updated to include the AerWay Shattertine, it would show that, for cultivation between playing seasons, it does create large and deep openings for the effective use of soil amendments. Its use does promote deep rooting (re: Robert Carrow studies) and it greatly improves not only water infiltration but also percolation to maximize the removal of standing water.

For cultivation during the playing season, depending on the organic matter and moisture content of the soil in a particular field, the use of the Shattertine will promote water movement. Also, as a result of the lateral fracturing of the soil between the tines, the soil profile is loosened to a depth of 7 inches, promoting lateral growth of sod forming grasses.

Dr. Minner related to the "...tufts of grass...in hollow core holes." Our question has always been, "What happens between the holes?" Root development has been shown to remain within the void, and clearly illustrates the need for the lateral breakdown of the soil profile to encourage root growth outside of the coring hole boundaries.

In response to Mr. Hanawalt's question, the "chunk" of soil pulled out of the ground is a clear indication that his field is severely lacking organic matter. Consistent use of the AerWay Shattertine and application of appropriate topdressing material will alleviate the problem, but it will take time. Under the existing circumstances, mid-season use may be limited to the AerWay Sportstine to reduce surface compaction and encourage a deeper root system. One frame with two-tined rollers is a relatively inexpensive investment to accomplish aeration throughout the year.

I might also point out that, considering the hardness of the soil alluded to in Mr. Hanawalt's letter, a hollow tine might be ineffective until soil conditions are improved.

Thank you for allowing us to add to the information provided by Dr. Minner.

Paul Gillen  
Manager of Marketing  
Holland Equipment Limited

Michael SanFilippo  
(847) 427-2083

## Calendar of Events 2000

### June 19-20

Floyd Perry's Spring Sports Short Course, Atlanta, GA. Future dates and locations: June 22-23, Louisville, KY; Aug. 21-22, Prince William, VA; Aug. 24-25, Cary, NC; Sept. 7-8, Pasadena, TX; Sept. 25-26, Moses Lake, WA; Sept. 28-29, Kent, WA; Oct. 2-3, Springfield, OR; Oct. 5-6, Reno, NV; Oct. 9-10, Lodi, CA; Oct. 12-13, Menio Park, CA; Oct. 23-24, Phoenix, AZ; and Oct. 26-27, Albuquerque, NM. For more information, call (800) 227-9381.

### June 26-29

Floyd Perry's Groundskeepers Management Academy, Wooster, OH. Future dates and locations: Aug. 1-4, Cooperstown, NY; Aug. 7-10, Framingham, MA; Aug. 14-17, Florham Park, NJ; Aug. 28-31, Orlando, FL; Sept. 11-14, Dallas, TX; Sept. 18-21, Denver, CO; and Oct. 16-19, Cerritos, CA. For more information, call (800) 227-9381.

### July 12

Sixth annual Ohio Lawn Care Association (OLCA) Diagnostic Seminar, Ohio Turfgrass Research and Education Facility, Ohio State University, Columbus, OH. Contact Kareena Gibson: (800) 510-5296, ext. 3180; fax (740) 452-2552; kgibson@offinger.com.

### July 19-21

Turfgrass Producers International's (TPI) 33rd annual Summer Convention and Field Day, Spokane, WA. Contact TPI: (800) 405-8873/(847) 705-9898; fax (847) 705-8347; Turf-Grass@msn.com. Web site: [www.TurfGrassSod.org](http://www.TurfGrassSod.org).

# Calendar of Events 2000

## July 22-24

Outdoor Power Equipment Institute's (OPEI) 17th annual International Lawn, Garden & Power Equipment Expo (EXPO 2000), Kentucky Exposition Center, Louisville, KY. Contact Sellers Expositions: (800) 558-8767/(502) 562-1962; fax (502) 562-1970. Web site: <http://EXPO.mow.org>.

## July 27

Green Industry Professional Field Day and Trade Show, American University, Washington, DC. Will include: sports turf maintenance. For more information, call (703) 250-1368.

## August 15

Cornell Field Day, Cornell University, Ithaca, NY. Contact Joann Gruttadauro: (607) 255-1792.

## August 23

Michigan Turfgrass Field Day, Hancock Turfgrass Research Center, Michigan State University, East Lansing, MI. Contact Kay Patrick: (517) 321-1660.

## August 30-September 2

WorldScape 2000, a special millennium edition of CalScape Expo, Fairmont Hotel, San Jose, CA. Contact California Interior Plantscape Association: (707) 462-2276; fax (707) 463-6699; [cipa@cipaweb.org](mailto:cipa@cipaweb.org). Web site: [www.cipaweb.org](http://www.cipaweb.org).

## STMA MESSAGE

Sports  
Turf  
Managers Association

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



## Change Happens

It's been said that change is a constant in the rapid pace of today's world. And, most of the time, that's a good thing. Changing technology in maintenance equipment provides us with the tools to do our jobs more

efficiently, more effectively and often produces better results. Changing technology in turfgrass development has provided varieties and cultivars better adapted to use on athletic fields. Changing technology in the computer industry has made record keeping easier and more efficient and has given us the ability to communicate quickly and inexpensively whether it's within our own department or facility or across the city, nation or globe.

Changes occur in our career paths as well. We start out in an entry-level position and, as we grow in knowledge and expertise, we move to positions of increased responsibility. Sometimes those career moves are within a single company or facility. Sometimes those moves mean a change in employment.

I guess change is on my mind because it's time for me to announce a change of my own. In 15 great years with Saint Louis University as director of grounds and materials management, I've invested a lot of time, effort, heart and soul into the campus, its projects and its people. I've also gained much in personal growth and professional growth. I'd like to take this opportunity to thank St. Louis University for all the opportunities I've had to develop our athletic field program and special landscape projects.

I want to say thank you to all those I've had the privilege of working with over the years and to express a special thanks to my boss and mentor, Chuck Smith, vice president of facilities services. I'm especially grateful to Chuck and the university for their support of my STMA activities.

I have accepted the position of vice president of operations for Munie Outdoor Services, Inc. of Caseyville, Ill. (just across the river from St. Louis). They're an established company and STMA member specializing in athletic field, golf course and commercial property construction, renovation, irrigation and maintenance. Over the years, I've had the chance to observe and interact with the Munie company. This contact led to the decision to join forces. The opportunities in this new position intrigue me and, as I'm already learning, they will certainly challenge me. That's one of the many things that are so special about this industry. The opportunities are many and varied. There's always a new area to explore where the challenges test you and help you to grow and develop professionally.

The ultimate goal, no matter what hat we wear in this industry, is the quality of the playing fields we provide for athletes in every sport, of every age and at every level of ability.

I pledge my continued support to STMA, to the STMA members, and to the programs and services that will continue to move us forward in the pursuit of our mission and our goals in this ever-changing world.

**Rich Moffitt**  
STMA President  
(314) 977-2956

# Success Soars at Redbird Softball Complex

THE 1999 COLLEGE SOFTBALL FIELD OF THE YEAR

by Bob Tracinski

As each member of the home team passes through the gate, a tremendous sense of pride is felt. Players chatter. Bats crack. Fans applaud a well-executed play. The smell of freshly mowed turf mixes with the aroma of popcorn. Crisp white chalk lines contrast with the dark brown infield while a dense carpet of green in the outfield invites players to tread upon it. Fly balls are caught; runs are scored. The game is won (or lost) and the opponents make their way to the waiting bus, but not without complimenting the coach on an outstanding playing surface and the excellent Redbird Softball Complex facility. This is a typical day of play for Illinois State University's Lady Redbird Softball team and their coach, Melinda Fischer."

This opening paragraph (penned by Darcy Loy, ISU grounds gardener) captures the excitement generated by STMA's 1999 College Softball Field of the Year. Illinois State University is in Normal, Ill., in the central part of the state. Serving a growing student body, now around 20,000, has brought nearly constant change to the 850-acre urban campus. Planned construction of a new parking structure and a new College of Business building at the center of campus forced the demolition of the existing soil-based softball field and facility. The new softball complex was added to the West campus area already home to football, baseball, soccer and track facilities.

## Maintenance Matters

Mike O'Grady, superintendent of grounds, has been with the University for 23 years. His staff of 19 maintains 350 acres, including 70 acres of parking lots, 23 miles of sidewalks and everything on the exterior of the buildings, from signage to turf and flower beds. They also handle snow removal and garbage pickup.

O'Grady says, "We have 9 1/2 acres of athletic fields that we strive to maintain at a professional level: football, baseball, soccer, track, the soccer field of the university's

laboratory high school and the new softball field. Our football game field is artificial turf; the practice field is real grass. All other game fields double as practice fields.

"I develop all the grounds maintenance programs. Denny Deterding handles the day-to-day maintenance of the athletic fields and interacts with the coaches. He'll get assistance from other staff members for such projects as topdressing or spraying. Our athletic department has attendants that do the field layout and dragging and the chalking or painting of the fields. Our department will provide assistance with the application of calcined clay."

The softball field is used from March through the beginning of October, primarily for ISU NCAA Division I softball games and the practices of the Lady Redbird team. The ISU Athletic Department handles all scheduling. Non-softball activities are not allowed on the field.

## Under Construction

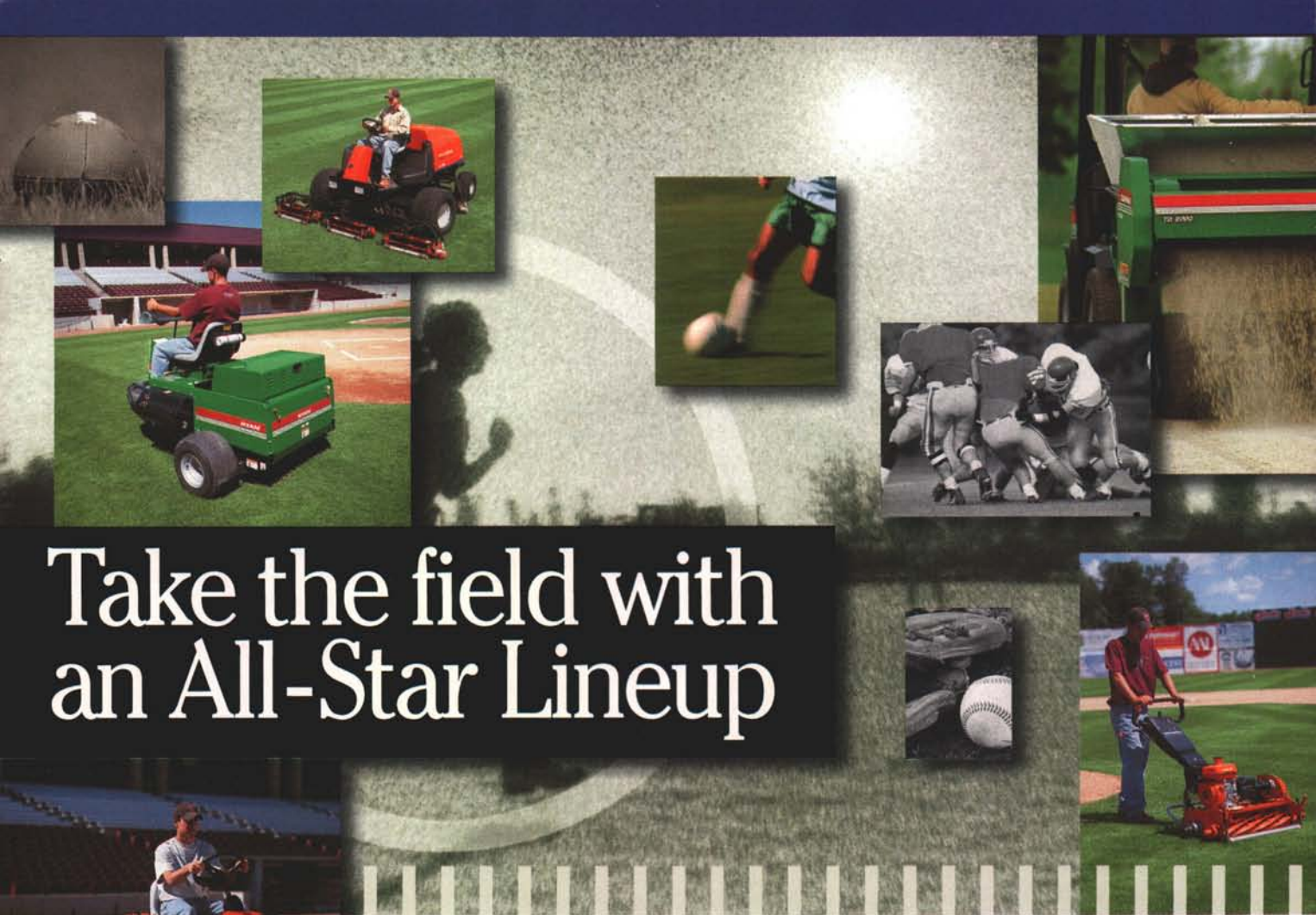
O'Grady was given full authority to work with the university architect to design the new softball field. He says, "I had a vision of what I wanted the field to be and what long-term maintenance issues I wanted to minimize through field construction. I also tapped a lot of resources, including Dr. Henry (Hank) Wilkerson of the University of Illinois and Dr. Dave Minner of Iowa State University.

"One interesting design challenge was posed by the creek that wraps around the back of the softball complex. We designed the field 10 feet shorter than planned, ending up with alleys of 190 feet and a centerfield of 210 feet, to accommodate the rules and regulations of the proximity of structures to the creek and still comply with NCAA standards. Our Athletic Director at that time had wanted a home run ballpark and it does add excitement for the fans.

"Because the parking lot across the creek produced windshield glare for late afternoon games, we moved mature mock orange shrubs from another campus construction site and replanted them across the creek from the outfield fence. This also provides a solid background for the batter's eye to pick up the ball and gauge speed and timing."

O'Grady, Wilkerson and Minner decided on a 10-inch

**Mike O'Grady**, superintendent of grounds, has been with the University for 23 years. His staff of 19 maintains 350 acres, including 70 acres of parking lots, 23 miles of sidewalks and **everything** on the exterior of the buildings, from signage to turf and flower beds. They also **handle** snow removal and garbage pickup.



# Take the field with an All-Star Lineup

The number-one brands in the business are now the top team in turf. Individually, Bob-Cat®, Bunton®, Cushman®, Jacobsen®, Ransomes® and Ryan® have been all-star performers for years. Together, Textron Turf Care And Specialty Products has the most experienced lineup around.



On the field, our comprehensive line of mowers, aerators, infield rakes, utility vehicles, seeders and sprayers put up winning numbers. Off the field, easy maintenance and robust design keep them running for years. If you're ready to put some real winners on your field, call 1-888-992-TURF today or visit us at [www.ttcsp.textron.com](http://www.ttcsp.textron.com)



**BOB-CAT BUNTON CUSHMAN JACOBSEN RANSOMES RYAN**

[www.ttcsp.textron.com](http://www.ttcsp.textron.com)  
AST-0100 © Textron Turf Care And Specialty Products.



Circle 104 on Inquiry Card



straight sand outfield profile, using USGA sand specifications. The skinned infield is composed of a mix of 80 percent clay and 20 percent sand with calcined clay incorporated into the surface layers. An additional 6 tons of calcined clay are incorporated into the skinned area each spring. The entire field was constructed with a 1/2 percent slope from behind the catcher's position all the way out to the end of center field for surface drainage. O'Grady says, "In previous fields and on our baseball field we tried to contain runoff in the tarped clay area but, when the tarp was pulled and dumped, it created a large amount of water on the turf. The 1/2-inch total field slope eliminated this."

After the field subgrade was exposed, the contractor trenched in 6-inch wide and 12-inch deep trenches on 10-foot centers in the outfield, arching in a half moon pattern from first to third base. A main trunk drainage line runs down the center of the field. Advantage Drainage by ADS, 12 inches high by 1 inch wide, was then placed in the trenches and bedded in pea gravel all the way to the surface. A shallow level of pea gravel was placed over the subsoil.

O'Grady says, "The straight sand profile was selected from a local contractor. They made adjustments in the mix to meet our specs and checked it for a percolation rate of 32 inches of rain per hour. The sand was pre-mixed at the gravel pit and trucked to our site. But when we pulled samples to check the specs on the first delivered load, it didn't pass. The contractor's crew had pulled material from the wrong pile. The contractor took it back and brought the correct mix, but it definitely reinforced our conviction to test and retest throughout the construction project."

### Irrigation Issues

The Rainbird EXP-LXT irrigation system uses Hunter I-40 part- and full-circle heads in seven separate zones within the turf areas. Turf irrigation takes place on a daily basis at a rate of 1-1/2-inches of water per week. That rate is increased during the playing season in accordance with evapotranspiration rates.

A rain sensor control automatically shuts down the irrigation system if rainfall over 1/4 inch takes place.

O'Grady says, "We installed a high-speed rotation irrigation system utilizing Hunter I-42 nozzles for the clay infield. It took a little tweaking for locations, spacing and timing. These irrigation heads run all along the perimeter of the clay right at the edge of the turf. One head was placed in the center of the clay in a small valve box that sits right behind the pitchers rubber. When the system is turned on, the water pressure forces the cover off and the head pops up to irrigate. The crew replaces the cover and tamps down the infield clay around it when the cycle is completed. This system speeds the irrigation segment of skinned area preparation and allows us to implement dust

control for games. We can flip on the infield irrigation for 2 or 3 minutes between double headers. It also eliminated the need for an on-field quick connect and those occasional emergencies when a coach or player spun off the entire coupler and created a gusher."

### Sod Story

O'Grady consulted with Dr. Wilkerson to identify a source of suitable sand-based Kentucky bluegrass sod produced within the same climate zone. They worked with Huber Ranch Sod Nursery of Schneider, Ind., to select a 9-month old sod composed of four bluegrass varieties. Wilkerson advised use of the younger sod over similar older plots to speed on-site adaptation after installation.

"The landscape contractor we hired had never installed large roll sod on a sand-based field before and was concerned about the ruts he might make in the sand," reports O'Grady. "He wanted to use a crane placed on the infield clay to install the big roll sod. I agreed as long as he would absorb the extra costs and successfully complete the project within our time frame. We were concerned about heat buildup in the sod rolls so we wanted to insure all of the cut sod would be installed within 24 hours of being cut. The sod was unloaded and strategically placed on the infield clay. The same machine used behind a tractor

### Redbird Softball Complex - Maintenance Program

- March 15:** Apply pre-emergent to warning track and fence lines.
- April 5:** Apply 8-4-24 fertilizer at rate of 1.5 pounds per 1,000 square foot. Apply Primo Growth Regulator. Core aerate with 3/4 inch tines; drag cores into field.
- May 3:** Apply Fungicide (Heritage). Apply Primo Growth Regulator. Apply 8-4-24 fertilizer at rate of 1.5 pounds per 1,000 square foot.
- June 7:** Apply 8-4-24 fertilizer at rate of 1.5 pounds per 1,000 square foot.
- June 8:** Apply Fungicide Mix (Banner/Daconil Ultrex) Apply Primo Growth Regulator
- June 14:** Core aerate with 3/4-inch tines; drag cores into field
- July 5:** Apply 8-4-24 fertilizer at rate of 1.5 pounds per 1,000 square foot. Apply Fungicide (SPTeremec) Apply Primo Growth Regulator Spray warning track for broadleaf weeds if necessary.
- July 19:** Apply grub control (Merit)
- August 2:** Apply Fungicide (Heritage). Apply Primo Growth Regulator Apply 8-4-24 fertilizer at rate of 1.5 pounds per 1,000 square foot.
- August 6:** Slice aerate.
- Sept. 6:** Apply Fungicide Mix (Banner/Daconil Ultrex) Apply Primo Growth Regulator. Apply 8-4-24 fertilizer at rate of 1.5 pounds per 1,000 square foot.
- Oct. 4:** Apply Primo Growth Regulator. Apply 8-4-24 fertilizer at rate of 1.5 pounds per 1,000 square foot. Slice aerate.
- Nov. 15:** Apply 18-5-18 fertilizer at rate of 1.5 pounds per 1,000 square feet. Shut down and drain irrigation system.
- Nov. 16:** Core aerate with 3/4-inch tines; leave cores on field over winter.