



Despite heavy use, aggressive renovation keeps the diamond at Southwestern College in outstanding condition. Photo courtesy: Chris Bunnell.

Warm-Season Turfgrass Renovation: Profiles In Excellence

By Chris Bunnell

When I returned to baseball after 20 years, not as a turf manager but as a player, I viewed athletic fields from a user's perspective. After a season in the San Diego Men's Senior Baseball League, I concluded that the most neglected and overlooked piece of athletic equipment is often the playing field. I played with men who had no problem paying more than \$100 for an aluminum bat, but balked at the thought of paying fees for field maintenance.

Field renovation information is offered through numerous sources, including STMA seminars and numerous articles, yet many sites still seem unable to implement a renovation program to heal the wear caused by high use. The basics of renovation are well-known in the industry. But how are these techniques applied, and how often? And when do renovation chores become a routine maintenance function, along with mowing and irrigation?

Every athletic field has a diverse maintenance program, personnel, and budget. Each site has different uses or requirements and each has various ways

to deal with demands. What follows are four rather different renovation success stories, yet each has something in common. Hopefully, the lessons contained within each example can help you with renovating your current field, or a field in the future.

San Diego Jack Murphy Stadium

Under the expert guidance of turf manager Steve Wightman and his experienced crew, San Diego Jack Murphy is one of the finest multi-use stadiums in the country. Renovation tasks on this field are actually aggressive management tools, rather than an annual, semi-annual, or quarterly event. Each year, a precise, yet flexible, schedule is planned to use every possible window of opportunity to improve the field. The turf is maintained at top levels to ensure safety for the athletes and beauty for the fans.

- **Renovation Schedule:** Since the field is reconstructed in March each year, there is no need for major annual renovation. During reconstruction, the root zone is amended to improve the soil structure and fertility. Then the field is resodded with hybrid bermudagrass. The turf is "renovated" at each window



Renovation scheduling depends on site conditions, field use and budget. Photo courtesy: Ransomes.

of opportunity, when the team is away, to maintain an extremely smooth surface for baseball. The hybrid bermuda turf is overseeded with perennial ryegrass for the cooler temperatures and heavy use during football season.

- **Dethatching:** Dethatching is done four times a year. It is accomplished by first lowering the mowing height by 1/16-inch, then verticutting. The first dethatching usually is done by mid-May, then repeated monthly through August. The level of the turf is raised in August to accommodate the football season. In the winter, the athletes do the dethatching with their cleats.

- **Aeration:** The field is core aerated four to five times a year. The cores are always removed. Core aeration usually is scheduled two to three times during the football season because of the intense compaction caused by the players and because the greatest amount of rainfall is received at that time. The additional aeration applications are worked in as needed to combat compaction stress.

- **Topdressing:** A specified sand is used to topdress two or three times a year. Following resodding in early March,

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the field is topdressed to ensure the seams in the sod do not affect the roll of a baseball. Additional topdressing during peak growth in May and June or July, in conjunction with aeration, usually uses approximately 1/8-inch of sand.

•**Fertilization:** Soil tests are conducted four times a year. The turf tissue is tested three times a year to make sure that nutrients actually are reaching the grass plant. The results of the two tests are compared to fine-tune the fertility program, making sure this sand-based soil mix has optimal levels of nutrients and that the proper pH level is maintained.

•**Pest Control:** Disease seems to be the main concern because of the environment in which the turf is growing. Covering the infield creates the perfect circumstances for disease development. Fungicides are used both as preventative and curative treatments as necessary. Weeds are not a problem on this highly maintained field. Insects are rare and usually do not cause enough damage to warrant using pesticides. Wightman takes a proactive, Integrated Pest Management approach to pest control, making sure the turf is healthy enough to combat any problems.

•**Planned Downtime:** There are several windows of opportunity during the away games of both the baseball and football seasons. There is also the added pressure of the professional level of expectations. This field *must* always be playable and aesthetically pleasing. These expectations limit the severity of the renovation procedures that can be used.

•**Total Labor Estimate:** An estimated 72 labor hours are required to complete the combined tasks of dethatching, aeration, and topdressing.

University of Southern California

Managed by John Puncel, the USC Trojan's Dedeaux Field is built on the basics of turf management. "Do these things on a consistent basis and you'll see results," says Puncel.

When Puncel entered the athletic field maintenance profession, he contacted local STMA members including Neal Beeson, Steve Wightman, and Alan Sigwardt for technical advice. The results gave the Trojans an improved played surface. Though heavy scheduling demands restrict the renovation program, Puncel strives for consistent improvement with each year.

•**Renovation Schedule:** The USC baseball coaching staff is directly involved in the field-use planning and has a good working relationship with the turf manager. The baseball field is a source of school pride and all work together to keep it in top shape. The team plays from the first of the year through the end of May. To avoid any interruptions, little renovation goes on during the season. The team also plays fall baseball, which is finished around mid-November. Major renovation follows, with an aggressive overseeding program.

•**Dethatching:** Dethatching is done three to four times a year. Light dethatching is performed twice after the baseball season, once during the summer and once just prior to fall play. Major renovation takes place in December. The grass is vertically mowed down to the soil level and all debris is removed. During the initial major renovation of this field, more than 15 cubic yards of thatch were removed.

•**Aeration:** The field is aerated twice each year in conjunction with light dethatching, and the cores are always removed. Except for the area in front of the mound, the field hasn't needed aeration during the baseball season.

•**Topdressing:** The field was topdressed annually for years with a high-quality sand mix, but is now topdressed once every three years. With current maintenance practices, the field has retained a smooth surface and the thatch problem has decreased, reducing the need for topdressing.

•**Fertilization:** Conducted once a season, soils tests continue to show high levels of P and K, so the former complete fertilizer program has been adjusted to concentrate on managing nitrogen levels. Puncel is experimenting with different forms of nitrogen, applying a minimum of one pound per 1,000 square feet per month during the spring and fall baseball seasons.

•**Pest Control:** Preemergence control of annual weeds is now the main method of weed control, replacing the combination of pre- and post-emergent control used previously. Crabgrass had been the major weed problem. Fungus or insect problems are minor and treatment is usually not needed.

•**Planned Downtime:** Downtime usually is scheduled for late November and the month of December, allowing about six weeks to do the major renovation

and get the perennial ryegrass germinated before practice starts in January.

•**Total Labor Estimate:** The major renovation, including overseeding, requires approximately 120 labor hours.

Southwestern College

The field at Southwestern College, managed by Bob Womack, is beautiful, perhaps because of the crew's dedication to it. They put out the extra effort when it's needed at the Chula Vista, CA, field.

Womack entered the world of athletic turf with a background as a golf course superintendent. Though sports turf maintenance challenges are similar to those of a busy golf course, as Womack has found, staffs are considerably smaller.

•**Renovation Schedule:** Renovation of this heavily-used diamond is scheduled to begin in mid-November and be completed before the baseball season begins in mid-January. This is the only window for overseeding the bermuda turf with perennial ryegrass. The field is dethatched down as close to soil level as possible. All debris is vacuumed and the kikuyu-grass, a vigorous warm-season weed common in Southern California, is spot-sprayed. The first overseeding follows, with a second seed application just before the season starts in mid-January. The object of the aggressive overseeding is to produce a dense stand of grass to compete with the hybrid bermudagrass base.

•**Dethatching:** This procedure is performed once a year. In the final weeks of November, during the last portion of the baseball season, the turf is scalped down to the soil. This is followed by vertical mowing and leveling the field.

•**Aeration:** To avoid interruption of play on this high-use field, it is shatter-aerated monthly. Compaction is monitored with a probe. The field is not core aerated before overseeding in order to ensure a smooth, level surface for seed germination.

•**Topdressing:** Only the infield is topdressed — every two years. Topdressing is performed on the infield only to maintain a smooth level.

•**Fertilization:** Soil tests are performed once every three years. The field is well-established and the nutrient levels have been tracked over a long time span. Soil tests are taken every three years to check the accuracy of the fertility program.

•**Pest Control:** The major annual problem is the persistence of kikuyugrass in the right field area. Insects are treat-

ed as required, with white grubs the most common pest. The perennial ryegrass cultivars "Palmer" and "Prelude," originally chosen for their quick germination under the cooler temperatures of December, have been resistant to diseases.

- **Planned Downtime:** The once-a-year renovation is a good method for this field because it allows for concentration on repair efforts without the competition of the warm season grasses.

- **Total Labor Estimate:** Approximately 72 hours of labor are needed for the three crew members to tackle the major renovation. All of the infield detailing also takes place at this time.

Carlsbad High School

Most field maintenance on this field is performed by volunteers. Ralph Cripe, a teacher in the Carlsbad School District, took interest in the baseball diamond at Carlsbad High in 1978. He has overcome equipment and budget problems with a "can-do" attitude. A personal donation from Cripe funded initial field reconstruction and sodding in November, 1982. He's become "hooked" on maintaining the field and handles the majority of the work himself. Community support grows stronger with each season.

- **Renovation Schedule:** Only the infield area is renovated. Procedures begin as soon as the regular school year ends in June. This field is located about a mile from the Pacific Ocean and the marine influence allows the hybrid bermudagrass to stay green year-round, eliminating the need for overseeding with perennial ryegrass. Renovation is performed during the active growing season of summer. The field is shut down for approximately four weeks during the renovation and recovery process.

- **Dethatching:** Once a year, the field is dethatched. The turf is scalped to the bare dirt with a flail mower and all debris is removed. Because of labor restrictions, no other dethatching is done during the year.

- **Aeration:** No equipment is available for aeration. However, this infield is cross-cut with a walk-behind vertical mower, which is the only aeration the field receives.

- **Topdressing:** Unfortunately, equipment and funds are not available for topdressing.

- **Fertilization:** The diamond's soil has not been tested. However, fertility has been maintained by frequent applications of fertilizer at one-half the

recommended rates. Gypsum has been added to lower the soil pH, but the need for this should be verified by soil testing.

- **Pest Control:** Broadleaf weeds in the common bermudagrass outfield have been controlled with postemergence applications made by professional grounds personnel with the school district.

- **Total Labor Estimate:** Renovation of the infield area takes approximately 70 labor hours. The need for renovation is lower because of the ability to shut down the field for periods of rest and to control the amount of play the site receives.

Dedication Works

The common thread running through all these field operations is the desire for more renovation. Labor, even at the

professional level, is always a limiting factor. With each field, flexibility is essential to coordinate the timing of procedures with field-use requirements.

To improve your own site, first start by planning the work you want to accomplish and communicating those goals to the field users. People usually are willing to accept and respect limitations if they lead to better playing conditions. □

Editor's Note: Chris Bunnell is grounds supervisor for the Escondido Union School District, current president of the Southern California Chapter of the Sports Turf Managers Association, and a member of the national STMA.

Motz Acquires PAT™

Motz Sports Turf, Inc., headquartered in Cincinnati, OH, has purchased Turfgrass Services, Inc., of Pueblo, CO. The purchase entitles Motz to all proprietary rights to the Prescription Athletic Turf™ sand-based athletic field design system, known in the industry as PAT.

"The acquisition of PAT has been a natural progression for our company, which started with sod farming, and now includes lawn care, commercial grounds care, and finally sports turf maintenance and construction," explained Joe Motz, owner and president of Motz Sports Turf. "I've known Laurel Meade [former owner of Turfgrass Services and PAT] and Dr. Bill Daniel [PAT developer] for a long time, and I've always considered PAT the pinnacle of athletic field systems."

PAT's engineering technology is protected by both U.S. and Canadian patents. Its design is based on the use of vacuum to forcibly extract water from the sand-based field. Motz sees the evolution of vacuum drainage as driving the trend in professional and collegiate athletics back to natural turf fields.

"Until we perfected the technology to keep fields playable in virtually any weather conditions, artificial turf was a facility's only answer to rain-outs," said Motz. "Although artificial turf does address surface playability, there are

many downsides, including increased injury rates and excessive summer heat."

PAT uses vacuum pumps connected to a network of buried tubes to such water from the field. The action can be "reversed" to irrigate the field from the base up, allowing the turf to be watered even while it is in play. Subsurface electronic moisture sensors tied into the vacuum and irrigation system allow PAT to function automatically. Heating systems are available to keep the root zone warm and surfaces from freezing well into the winter.

Since its invention at Purdue University in the early 1970s, PAT technology has advanced dramatically. Motz plans to speed that evolution by establishing a series of collaborative university research projects dealing with PAT's agronomics and engineering.

There are two PAT systems, which Motz Sports Turf manages, in Cincinnati: Spinney Field and Galbreath Field. Thirty-four of the systems have been installed nationally, including those at Soldier Field, Joe Robbie Stadium, Camden Yards, Ohio Stadium, and Seminole Stadium.

"There is nothing like PAT anywhere in the world," said Motz, who founded the Motz Corporation in 1977. "The \$600,000-plus price tag puts the system within reach of only the sporting elite."

EXPLORING EQUIPMENT

Calibrating Spreaders

By Loren E. Bode and
Stephen L. Pearson

Proper selection, care, calibration and use of your spreader can minimize costs and maximize your results. Improper use can reduce product efficiency, cause injury to turf, increase costs and damage your spreader.

Drop (gravity) and rotary (centrifugal) spreaders are available for applying granules to turf. Drop spreaders are generally more precise and deliver a better pattern. Since the granules drop straight down, there is less chemical drift and better control, with less chance of applying pesticide to non-target areas.

However, some drop spreaders will not handle large granules and ground clearance in wet turf can be a problem. Since the edge of a drop spreader pattern is sharp, any steering error will cause strips to be missed or doubled. Drop spreaders usually require more effort to push. But wet foliage application is more effective with drop spreaders, because the particle velocity imparted by a rotary can make some of the particles bounce off the foliage.

Rotary spreaders cover a wide swath, covering a given area faster. However, they are less precise than drop spreaders in terms of uniformity and distribution. Because of the pattern feathering, steering errors are less critical. Since they do not have a full-width agitator to turn as a drop spreader does, they require less effort to push.

Rotary spreaders normally handle large particles well, but drift is a problem with fine particles when wind is present. Ground clearance in turf is usually no problem for a rotary. Since rotary patterns vary, more calibration time is needed.

A major advantage of rotary spreaders is that they are usually constructed with plastics and fiberglass. Therefore, they are more resistant to corrosion. Rotary spreaders are also more durable in commercial use, and less

likely to be knocked out of calibration than some drop spreaders.

Maximizing Your Efficiency

Experienced turf care professionals are familiar with proper spreader use, but new operators should review basic operating procedures. Begin by reading the operator's manual or instruction booklet provided by the manufacturer and follow the manufacturer's instructions. The second obvious recommendation is to follow the instructions on the product label. Modify rate and pattern settings if necessary for specific conditions.

"Header strips" at each end of the turf area provide a place to turn around and realign the spreader, and serve to make the border of the turf area more uniform. Get the spreader moving at a rated speed (normally 3 miles per hour) on the header strip or on a driveway, sidewalks, etc. and then open the spreader as you cross into the turf area to be treated. At the other end, the spreader should be closed when moving into the header strip and turning.

Your spreader should be closed when stopped to prevent excessive product from being applied to a small area. Likewise, the end turns should be made with the spreader closed, since the application pattern would be very irregular while turning.

Occasionally, it might be impossible to obtain a completely acceptable pattern with a rotary spreader and striping of turf can result. A common solution to this problem is to reduce the setting to a half rate and go over the lawn twice at right angles. This is not a valid solution to the problem. This approach will not average out the pattern as is usually believed but will merely change stripes into a diagonal checkerboard. If pattern problems cannot be corrected, the proper procedure is to reduce the setting to a half rate and reduce the swath width in half, but still go back and forth in parallel swaths.

Normally, a spreader should not be operated backwards. It is obvious with most rotary spreaders that pulling the spreader backwards delivers an unacceptable pattern. There also is a problem with reversing the direction of a drop spreader. Most drop spreaders will deliver granules at a considerably different rate at the same setting if reversed. In some cases, such as in loose soil with new seedings, the spreader might be easier to pull than push. If you want to operate a spreader backwards, a different setting must be determined.

Some rotary spreaders are provided with a means of cutting off one side of the pattern. This feature is desirable when edging along driveways, sidewalks, etc.

Finally, it is usually best to set and fill the spreader on a paved surface rather than on the lawn. If a spill occurs, a driveway is much easier to sweep clean than turf.

Getting Precise

Because of many variables, it is highly recommended that all spreaders, drop or rotary, be calibrated for proper delivery rate with the specific operator and product to be used. Many product suppliers furnish recommended settings and swath widths. These are as precise as the manufacturer can make them, but the factors just mentioned can add up to a significant rate variation in some cases. Label setting should be used only as the initial setting for verification runs by the operator prior to large scale use.

It is suggested that calibration be checked and corrected according to the manufacturer's direction *at least once a week* when the spreader is in regular use, and more frequently if the spreader has suffered any abuse or mechanical damage.

The easiest way for an operator to check the delivery rate of a spreader is to spread a weighed amount of product on a measured area, preferably at least 1,000 square feet for a drop spreader and

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1995
SPORTS TURF MANAGERS ASSOCIATION
CONFERENCE & EXHIBITION
FEBRUARY 4-8, 1995
PIRATE CITY, BRADENTON, FLORIDA

Make plans now to learn and review the essentials of sports turf management in the heart of baseball spring training country. Pirate City and McKee Field, winner of the 1993 Baseball Diamond of the Year Award, are located just south of Tampa/St. Petersburg.

What better place to launch a tour of premier amateur, professional, and municipal sports turf facilities? Besides the Seminar on Wheels, the conference features seminars on the diamonds at Pirate City, an exhibition of equipment and supplies, including demonstrations, and plenty of opportunity to ask fellow sports turf managers for their solutions to your most challenging problems.

The annual meeting is also your opportunity to get involved in the Sports Turf Managers Association, the only organization of its kind in the U.S. Representatives from all STMA regional chapters will be there to help you start a chapter in your own area.

While you're in Florida, don't miss the beaches, golf and wealth of theme parks and movie studios.

Start 1995 off right with the STMA Conference & Exhibition in Bradenton!
Watch for more details in the coming months.

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Calibrating Spreaders

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5,000 for a rotary, and then weigh the product again to determine the rate actually delivered.

To avoid contamination of a turf area for initial calibration, the spreader can be supported above the floor and the drive wheel spun at the correct speed with the spreader remaining stationary. The granules can be collected and reused with this technique. Another method of rate verification that can be used with drop spreaders is to hang a catch pan under the spreader and push the spreader a measured distance at the proper speed. This method can be precise, but it is essential that the pan be hung on the spreader so that there is no interference with the shut-off bar or rate-control linkage.

With rotary spreaders, it is also necessary to check and correct the distribution pattern. Although the product label usually gives a recommended setting

and width, a custom applicator is foolish not to verify the setting and width before treating a large number of lawns. A quick pattern check can be made by operating the spreader over a paved area and observing the pattern. However, this method is not highly accurate since even major distribution errors might not be visible because of particle bounce and scatter.

A preferred method is to lay out a row of shallow cardboard boxes on a line perpendicular to the direction of travel. Boxes 1- to 2-inches high, with an area of about 1 square foot, spaced on 1-foot centers are good for commercial push-type rotaries. The row of boxes should cover one and one-half to two times the anticipated swath width.

To conduct the test, pour some product into the spreader and set it at the label setting for rate and pattern. Make three passes over the boxes, operating in the same direction each time. The material caught in each box can be

weighed and a distribution pattern plotted. A simpler procedure is to pour the material from each box into a test tube, vial or small bottle. With the bottles standing side by side in order, a plot of the pattern is visible.

This method can be used to detect and correct skewing and to determine swath width. The effective swath width is twice the distance out to the point where the rate is one-half the average rate at the center. For example, if the center three to four bottles have material 2-inches deep and the bottles from the 6-foot positions (6 feet left of the spreader centerline and 6 feet right of the spreader centerline) have material 1-inch deep, the effective swath width is 12 feet. □

Editor's note: The above article was adapted from "The Calibration of Commercial Pesticide Application Equipment for Ornamentals and Turfgrass," a manual produced by the Agricultural Engineering Department at the University of Illinois in Urbana.

PRESIDENT'S MESSAGE

By Greg Petry



The last time we communicated I wrote about commitment. I wrote about people who share a vision, people who contribute to the cause of promoting better and safer sports turf — and then some.



I am pleased to highlight that we will have a great opportunity to share our vision of the sports turf industry at the STMA Conference and Show scheduled for February 4-8 in Bradenton, FL. Mike Schiller of the Schaumburg Park District, Henry Indyk of Turfcon, and Eugene Mayer of O.M. Scott have assembled the program outline and are currently finalizing topics and speakers.

If you have an idea for a topic or speaker, please pass it along. We welcome your input. Bret Kelsey, our executive director, has visited the site. (Again, you have to mention commitment, because Bret went down to Florida on a golf outing with his friends and spent one of his days scoping out the conference site.)

Bret has worked out most of the on-site logistics with the committee.

I think we are ready to have a great conference. Are you ready? Here's some thoughts to keep in mind:

1. Budget to attend the conference and show.

2. Save up to bring your family or friends — we have some great activities planned.

3. Schedule ahead so you have the time to attend.

Justify attending:

1. Exposure to latest techniques, products, technology and trends.

2. Ability to gain information and advice from experts in a short period of time.

3. Ability to exchange information with fellow professionals sharing similar concerns.

4. Commercial members will be able to return with potential customers, while gaining a realistic perspective on interests and issues.

5. Continuing education increases knowledge, skills, and productivity.

Also at the conference, we will be presenting our 1994 awards. I know

that each and every one of you is extremely busy now that we are in the height of the season. So take some time to document your success. Carry a camera with you to photograph the great job you're doing, and plan on submitting an award application. Awards will be given for the best baseball, soccer, and football fields.

Bob Milano, from the University of California at Davis, is our awards committee chairman. He will publicizing the awards program soon. It's rare that you have an opportunity to boast your success. Please plan to do so — you may find out how good you really are!

How well you perform is truly related to how well you have been trained. I once heard it said that 90 percent of all jobs in the 1990s will require at least a high school education. Job requirements keep changing and therefore, job training and continuing your education are important. Some organizations recognize that training and development are keys to growth and success. The primary purpose of training is to make sure abilities, interest, and personal needs are matched between the organization and the individual employee.

I hope you take advantage of the 1994 STMA Conference and its training opportunities. You will benefit, and so will your organization.

STMA Chapter News

Midwest Chapter: STMA — *Special Reminder.* The Midwest Chapter will hold an afternoon Sports Turf Workshop at the Philip B. Elfstrom baseball stadium at Kane County Event Center, Geneva, IL, on May 24. Attendees will close the session with fun and fellowship as they watch the Kane County Cougars, a Florida Marlins farm club, taking on the Appleton Foxes in an evening game. For more information contact workshop coordinator Scott Phippen, (708) 883-8600.

The Midwest Chapter elected its 1994 officers and board at the annual meeting held March 24. The results of that election are as follows: President, Marc Van Landuyt, Van's Enterprises, Ltd., Mundelein, IL; Past President, Mike Trigg, Waukegan Park District, Waukegan, IL; Vice President, Jesse Felix, West Chicago Park District, West Chicago, IL; Secretary, John Anderson, Arthur Clesen, Inc., Wheeling, IL; Treasurer, Lonnie Berg, Lyons Township High School, La Grange, IL; High School Director, Jim Lewandowski, Hinsdale Central High School, Hinsdale, IL; College/University Director, Dale Getz, University of Notre Dame, Notre Dame, IN; Parks Director, Mike Bohne, McHenry Township Parks Dept., McHenry, IL; Commercial Director, Don Michaels, Conserv FS, Wauconda, IL; Professional Team Director, Dave Mellor, Milwaukee Brewers, Milwaukee, WI; Workshop Chairman, Scott Phippen, Village of Lincolnshire, Lincolnshire, IL; Mailing Labels, Karin Van Landuyt, Van's Enterprises, Ltd., Mundelein, IL.

A meeting is in the planning stages for July 19 at Kishwaukee College in Malta, IL. This meeting will center on the Turf and Floral Test Plots and Turfgrass Management.

For more information contact the Chapter Hotline, (708) 439-4727.

Iowa Sports Turf Managers Association — *Special Reminder.* The Iowa Sports Turf Managers Association will hold a two-part workshop on Baseball/Softball Field Maintenance in Boone, IA, on Saturday, May 14.

The morning session, held at Memorial Park, 2000 Boone Street, begins at 9:30 a.m. Featured presenter Mike Anderson from the Iowa Cubs will be assisted by Dale Roe of Iowa State University, and other ISTMA members.

The afternoon softball session, held at the Little League Complex, 300 West 2nd

Street, begins at 1:30 p.m. Featured presenter will be Bill Antons of the Boone Community School District. Antons also will be assisted by Dale Roe and other ISTMA members.

For further information on this meeting contact Bill Antons, Boone Community School District, 500 7th Street, Boone, IA, 50036, (515) 433-0750.

A Soccer Meeting is in the planning stages for August 4 in Muscatine, IA. More details are forthcoming.

For more information contact Gary Peterson, (515) 791-0765.

The New England Chapter: STMA — The New England Chapter is planning a Field Day for August 10 at the Holy Cross College, Worcester, MA. Further details will be announced soon.

For more information contact Mary Owen, University of Massachusetts Cooperative Extension System, (508) 892-0382.

STMA Florida Chapter #1 — The South Florida Chapter has several meetings in the planning stages. A meeting will be held from 9 a.m. to 1 p.m. on July 13 at the City of Pompano Stadium. The prime topic will be aerification. From 9 a.m. to 10 a.m., Tom Mascaro, Turf-Tec International, will cover aerification principles. From 10 a.m. to noon, aerification equipment will be demonstrated. The lunch from noon to 1 p.m. gives attendees additional opportunities for networking. Tom Curran will host the event. Those wishing to make arrangements to demonstrate equipment should contact John Mascaro.

An August 3 meeting at Floyd Hall Stadium will focus on fertilization and irrigation. The event will be hosted by Kathy Conner.

The chapter will also take part in the Florida Turfgrass Association Conference and Trade Show slated for September 18-21 at the Ft. Lauderdale Convention Center.

Further details on these events will be announced soon.

For more information contact John Mascaro, (305) 938-7477 or Ed Birch, (305) 938-0217.

The Southern California Chapter: STMA — The Southern California Chapter is planning exciting and informative events. An August 12 networking-learning-fun session will be held at Dodger Stadium and will include a game between the Dodgers and the Cubs. The Southern California Institute, an event coordinated

with the national STMA, will be held October 12 at UCLA in Los Angeles. Further details will be announced soon.

For more information contact Chris Bunnell, (619) 432-2421.

The Heartland Chapter: STMA — Plans continue to develop for the Heartland Chapter's first Sports Turf Field Day, scheduled to begin at 8:30 a.m. on July 13, at the Heritage Park Softball Complex, Olathe, KS. This event will be co-sponsored by the Missouri Valley Turfgrass Association. MVTGA members can contact President Ty Heidbreder. Further details on the field day will be announced soon.

The Heartland Chapter Board meets the first Wednesday of each month from 4 p.m. to 5 p.m. at Heritage Park Sports Complex. All members are invited to attend.

For more information contact Mark Diller, sports turf manager, Johnson County Parks and Recreation, (913) 782-7625 or Jack Schwarz, J.S. Sports Turf, Liberty, MO, (816) 792-2808 or (800) 344-8873.

Chesapeake Chapter: STMA — *Special Reminder.* The Chesapeake Chapter is working on a September Regional Workshop that will be held in conjunction with the national STMA.

Board meetings are held the first Tuesday of each month from 4 p.m. to 6 p.m. Members are invited to attend. The June 7 and July 5 board meetings will be held at Camden Yards.

For more information contact the Chapter Hotline, (301) 865-0667.

Colorado Chapter: STMA — For information on the chapter or its future activities, contact Joe Adams, Greeley Parks and Recreation, (303) 350-9340.

The Minnesota Sports Turf Managers Association — Progress continues for the Minnesota Sports Turf Managers Association. Those interested in finding out more about the chapter are urged to contact one of the following board members: Acting President, Tom Rudburg, University of St. Thomas, St. Paul, MN, (612) 962-6545; Acting Vice President, Mike McDonald, Bierman Athletic Complex, University of Minnesota, Minneapolis, MN, (612) 625-6097; or Acting Secretary/Treasurer, Brian Deyak, St. Cloud Sports Center, St. Cloud, MN, (612) 255-7223. □

ROOKIES

Pest Management



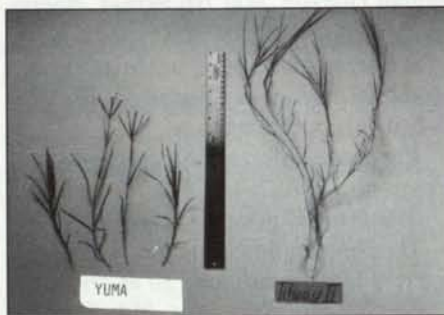
Integrated Pest Management Systems, Inc., introduces Turfject, a low-pressure, low-volume pesticide injection system for control of mole crickets, nematodes and grubs. Turfject injects all liquid-applied insecticides and nematicides below the thatch layer where soil-borne insects and nematodes live.

Unlike high pressure systems, Turfject uses pressure from 20- to 50-psi and volumes from 10- to 20-gpm. Pesticide is placed below the thatch layer, reducing photodegradation and tie-up within the thatch layer, making applications more effective. The system also limits operator and environmental exposure to chemicals.

**INTEGRATED PEST
MANAGEMENT SYSTEMS, INC.**

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New Bermudagrass



Pennington Seed announces the release of Yuma Dwarf Seeded Bermudagrass. Yuma is a dwarf, cold-tolerant bermudagrass that is lower-growing and finer textured in appearance than currently marketed seeded bermudagrasses. Its enhanced cold tolerance allows it to be used further north of current bermudagrass areas of the United States.

Yuma produces a fine textured, dark green turf that is excellent for golf fairways, sport turf and lawns. It also appears to be an excellent seed yielder.

PENNINGTON SEED

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Aerator

A unique feature allows Millcreek Manufacturing Company's core aerator to mount on the front of popular landscaping mowers. The front-mount feature maximizes the use of front-end mowers, freeing tractors to be used for other purposes requiring PTO operation. The hollow-tine Millcreek aerators can be mounted on the front end of Ford, John Deere, Kubota and Excel Hustler mowers.

MILLCREEK MFG.

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Topdresser

The new Bannerman Sport-Topper is fast precise and maneuverable. Its 40.5-cubic foot capacity and all-aluminum hopper reduce weight while its treadless turf tires, mounted on compensating swing axles, maintain a surface pressure of 8 to 10 psi. The variable-speed conveyor floor and rotating rear brush are both hydraulically driven to ensure accurate spreading depth and width. The Sport-Topper has PTO capability or can be fitted with its own reservoir and pump.

GORDON BANNERMAN LIMITED

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SCOREBOARD

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When it Comes to Performance...



Our Competitors are Behind Us 100%.

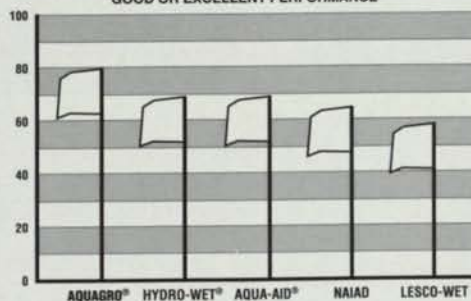
Since 1954 when AquaGro® was introduced to the nation's golf courses, hardly a year has passed that some company didn't come along with a *new* wetting agent. Most products have vanished like the morning dew they claimed to control. A few brands have managed to demonstrate their residual effectiveness, but year after year AquaGro remains the hands down favorite among golf course superintendents...because on the golf course performance counts.

The Top Performer

Don't just take our word for it. According to a survey of golf course superintendents conducted last winter by the Center For Golf Course Management's Market Research Division, AquaGro remains the most popular brand by a large margin. CGCM found that more AquaGro users are satisfied with the product than users of any other brand of soil wetting agent.

To our delight not only did AquaGro receive the highest satisfaction rating, it also received the lowest "poor" rating. Only 1.5% of the superintendents responded that they were dissatisfied with its performance. Among the leading competitors 8.1% of the Naiad users, 7.6% of the Lesco-Wet users, 6.1% of the Aqua-Aid® users and 3.7% of the Hydro-Wet® users rated the performance of their wetting agent as "poor".

% OF SUPERINTENDENTS REPORTING GOOD OR EXCELLENT PERFORMANCE



We sincerely thank the nearly 1000 superintendents who participated in this survey, and the thousands of loyal AquaGro users who vote each year with their budgets.

Satisfaction Guaranteed

In addition to being the most popular soil wetting agent on the market, AquaGro is the only one carrying a money-back performance guarantee.

AquaGro is available in Liquid, Spreadable and Pellet formulations. Aquatrols also offers the Little Squirt and P.P.M Unit precision irrigation injectors, the Advantage™ pellet applicator, the Dilute 'n Shoot™ hose-end proportioner and the Dose-It™ portable injector.

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If you're not already using AquaGro, it's time you discovered why the first wetting agent is still the best. AquaGro is available from your local Aquatrols turf products distributor.



AQUATROLS

Making Water Work Efficiently

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