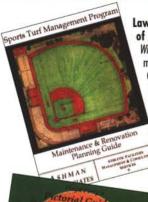
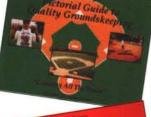
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Lawns: Basic Factors, Construction, and Maintenance of Fine Turf Areas Third Edition, by Dr. Jonas Vengris and William A. Torello. Designed as a textbook or a practical usage manual, this book has been completely brought up-to-date. Care of lawns and turfgrass, from selection of varieties to maintenance of established grass is completely covered. A needed tool for gardeners, nurserymen, county agents, landscape designers, and a text for college turfgrass courses. This is the most up-to-date book on turf management available today. 195 pages 4128 \$15.50

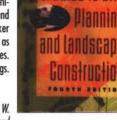
Sports Turf Management Program-Maintenance & Renovation Planning Guide, by Ashman & Associates. This manual was developed to provide a coherent plan for the management of the baseball field playing surface and provides operational guidelines for the grounds crew to use as part of the maintenance plan. Enhances the "playing conditions" of the field by elevating the maintenance standards to the highest level possible. Complete descriptions of the maintenance protocol and identification of key issues to be discussed before starting objective maintenance procedures. This book provides a plan of action outlining the tasks to be completed and benchmarks to measure the progress of the program. 160 pgs. 4024 \$105.00

Pictorial Guides to Quality Groundskeeping Book I and Book II, by Floyd Perry. The only textbooks on the market for the grounds supervisor, athletic coach, little league volunteer, or baseball purist. Over

500 photos in each text with many in color. Book One, "Covering

All The Bases" (100 pgs) covers Mound and Home Plate Repair; Edging, Dragging, Lip Reduction; Water Removal; Homemade Equipment and Tricks of the Trade. Book Two, "There Ain't No Rules",(108 pgs.) covers Football, Soccer, Softball, Little League, Minor League, College and High School Facilities. Also covers Curbside Appeal; Tricks of the Trade, New Ideas for Easy Maintenance; Professional Research from Higher Learning Centers and much more. 4008 -Book I 4009 - Book II \$36.60 ea. or \$69.90 - 2 bk set.

Maintain It Easy—Keep It Safe, by Floyd Perry. Learn from hundreds of instructional photos featuring all aspects of softball field groundskeeping. Explains: Lip reduction; setting of multiple bases and pitching plates; dragging equipment and patterns; base line options; unique complex ideas; dugout design; batting cage and hitting station; layout; water removal and much more. Unique field ideas from across the country. 4023 \$37.00 Golf Course Architecture Design, Construction & Restoration, by Dr. Michael J. Hurdzan. Described as "the modern bible of golf architecture," the book chronicles all facets of designing, building, renovating and restoring a golf course. Explains tee, green and bunker construction, turfgrass establishment and maturation, as well as drainage and irrigation trends and techniques. 326 color photographs and 80 course maps and drawings. 424 pgs. 4037 \$75.00

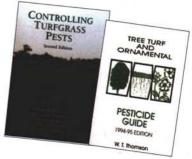


#### Controlling Turfgrass Pests, 2nd edition, by T. W. Fermanian, M. C. Shurtleff, R. Randall, H. T. Wilkinson, and

PL. Nixon. This book concentrates on the diagnosis, fundamental biology, and control of turfgrass weeds. Demonstrates how to identify turfgrass pests, when and why they occur, the damage that may take place, the life cycles of the pest, plus culture, chemical and other management strategies designed to keep pest damage to a minimum. 720 pp. **4031 \$85.00** 

Tree, Turf, and Ornamental Pesticide Guide, by W.T. Thomson. This is one of the few references today designed as a guideline to pesticide usage in the specialized ornamental field. It lists the major ornamentals grown either in the home or garden, in nurseries, in greenhouses, or in commercial production with a cross reference as to what pesticide may be used on them. Insecticides, herbicides, fungicides, and growth regulators are listed along with what each will control. This is a valuable tool for PCO's, nurserymen, greenhouse operators, grounds superintendents, turf specialists, etc. Everything is listed in alphabetical order from Abellas to Junipers to Zinnias. 200 pages **4127 \$18.50** 

The Pesticide Book, Fourth Edition, by Dr. George W. Ware, University of Arizona. This book examines all aspects of pesticides--from their chemistry, mechanisms, and biological actions to their handling, storage, and disposal. The Pesticide Book is both an up-to-date appraisal of current research and a perceptive look ahead at pesticides for the future. It is designed to cover all interests, from students in agriculture, EPA personnel and members from the Peace Corps., to PCA's, groundskeepers, and landscape maintenance. It is of special value for those preparing for applicator certification in the field of pesticide usage. 400 pages **4123 \$35.00** 



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# Winter Management of Cool Season Turf

By Mary Owen ool season turfgrasses begin preparing themselves for winter dormancy as day length shortens and temperatures cool each fall. Many athletic fields still are in play during the preparation period and through the early stages of dormancy. Many fields also must support spring sports activity before the turf has fully recovered from winter stress.

The steps you take now will impact turf survival in winter conditions, how well it tolerates those conditions if it does survive, and how effectively it regains vigor in the spring.

#### **Assess Problems**

Turf that already is weakened in the fall is less likely to survive winter stress. Assess your current conditions and anticipate problems.

Identify areas of thin or weak turf, bare spots and areas of poor drainage, heavy wear or excessive compaction. Note which can be scheduled for improvement during the active play period or at the end of the season and which must wait until spring.

Plot out the sections of each stadium field where structure design restricts air movement, creates shady conditions or promotes the buildup of snow and ice. On open fields, note which areas are most likely to experience cold damage, moisture loss (desiccation), injury from soil movement during alternating freeze and thaw cycles, or damage due to excessive rainfall or snow buildup.

Formulate a maintenance plan to address these problems.



Be aware that snow molds (both pink and gray) thrive during cool, moist conditions when air movement is restricted by snow cover.

#### **Alleviate Compaction**

Avoid compaction when possible. Work with coaches and field-user groups to set up alternative practice fields. If no other fields are available, move practice drills to a different area each day. If you have enough space, line out two "short fields" overlaying the game field but perpendicular to it.

Or, line out practice fields in the same direction as the existing field, but moved 10 to 20 feet to the left or right.

Minimize sideline compaction by shifting players' benches off center. Try a move from the 50-yard line to the 30-yard line one week, to the "70-yard line" the next.

If possible, relieve compaction during the fall. If funds and labor resources are limited, schedule aeration where problems are the worst. If you can't core aerate the entire field, just aerate between the hash marks and along the goal line. If ride-on equipment isn't available, use a smaller walk-behind core aerator. If fielduse schedules don't allow the surface disruption of core aeration, use solid tines or, preferably, slicing equipment instead.

Time your last core aeration to coincide with anticipated use schedules and weather conditions. Core aeration during the late fall or early winter may expose the turf around the core holes to excessive desiccation. If late core aeration is the only option, be sure to fill in the holes by dragging the cores or topdressing with an appropriate material.

#### **Improve Drainage**

Standing water and overly wet soils increase turf susceptibility to winter injury. You can reduce poor surface drainage by crowning the field to promote run off and by increasing infiltration rates. Both infiltration (water movement into the soil) and percolation (water movement through the soil) can be improved through aeration and modification of the soil profile with coarse-textured materials (such as sand). Subsoil drainage lines will channel excess water away from the field.

#### **Anticipate Moisture Needs**

Cool-season grasses do need to dry to a certain degree as part of their preparation for dormancy. But overly dry soils can lead to extreme dehydration and the increased likelihood of winter turf injury. It's important to find the correct balance of moisture levels for your specific field conditions.

#### **Test Turfgrass Varieties**

Select turfgrass varieties to match your needs. Check out seed company and sod producer advertisements and literature and stop by their booths at trade shows to pick up information from staff personnel. Talk to other sports turf managers to find out what varieties they use, how they use them, why they selected them, and how they stand up to the stress. Compare performance at turfgrass test sites and ask for recommendations from your extension turfgrass specialist.



Standing water and overly wet soils increase turf susceptibility to winter injury.

Test promising new varieties or combinations of varieties on specific areas of your practice field or fields for at least a year, following your standard maintenance program, before you try them on your game field. If your moisture conditions fluctuate greatly during a year, or from year to year, test turfgrass varieties on fully irrigated fields and on non-irrigated fields. Also factor in the effects of varying sun and shade patterns and of limited air movement in an enclosed stadium.

Increase turf survival rates by picking varieties with differing strengths and weaknesses. A combination of varieties can give you heat and cold tolerance, insect and disease tolerance, deep green color, fast germination, aggressive tillering, deep rooting, drought resistance, and more. With a combination of varieties, when one cultivar is vulnerable to attack, other cultivars will fill in the gaps.

#### **Renew the Turf**

Renew areas of weak or thin turf by overseeding during the active growth period. When overseeding large areas, use slice or slit seeders if they are available. If not, broadcast seed prior to a game and rely on the athletes to cleat it in during play.

Pregerminate the seed to speed the on-ground growth process by a few days. Include some pregerminated seed in your standard divot-repair mix. Dormant seeding is a method of getting seed in place for germination when spring temperature, moisture and light conditions reach the right combination to initiate growth. Often, dormant seed has germinated and is actively growing long before crews can begin field work.

#### **Maintain Fertility**

Use periodic soil tests (and tissue tests as the budget allows) to develop a comprehensive fertilization program. Remember that high or low pH levels may "tie up" nutrients in the soil, making them unavailable for turf use.

Keep sufficient nitrogen (N) levels for steady, sustained growth as long as temperatures allow it and field use requires it, but do provide sufficient time with lower N levels to allow the turfgrasses to "harden off."

Increase potassium (K) levels as necessary to improve plant hardiness for the stress of play and the colder



weather. Because K (like N) is water soluble and has the potential to move through the soil quickly (leaches), schedule applications to maintain consistently adequate supplies.

Phosphorus (P) moves slowly through the soil. Existing levels may be adequate for established turf but need to be supplemented to support seedling development. Adjust P levels based on the results of a soil test.

#### **Adjust Mowing Height**

Reach a workable balance on latefall and over-winter turf height according to individual field use and traffic patterns. Turfgrasses need to build up carbohydrate reserves to withstand winter stress, and greater leaf surface (a higher height of cut) increases carbohydrate production.

But, the taller turf is more susceptible to winter diseases and to injury from human and equipment traffic when the turf is frozen and brittle.

#### **Protect with Tarps**

Tarps protect the turf from excess moisture and cold, from desiccation, and from snow and ice buildup. They help retain heat in the fall, keeping the turf actively growing longer into the season, and they promote early green-up in the spring.

But, covered turf is more susceptible to winter diseases. In the spring, pay extra attention to early growth of the turf under tarps.

#### **Prevent Diseases**

Snow molds (both pink and gray) are the primary winter diseases. They thrive during cool, moist conditions when air movement is restricted by snow cover; tarps; excessive thatch; tall, matted turfgrass top growth; or stadium enclosures.

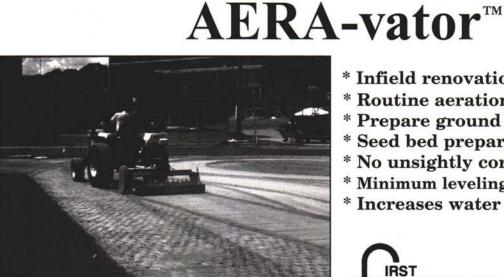
Reduce disease pressure with improved cultural practices to alleviate the conditions that encourage disease activity. Make preventive fungicide applications as necessary.

#### **Plan for Spring**

Review your notes from the pre-season assessment and factor in the probable results of late-fall and winter weather conditions to develop your spring maintenance plans. As always, plan to allocate resources where they will accomplish the most toward meeting your goal: providing safe, playable fields.

Mary Owen is an extension turf spethe University cialist at of Massachusetts; a board member and the Education Committee chair of the national Sports Turf Managers Association; and a board member and the education chair of the New England Sports Turf Managers Association.

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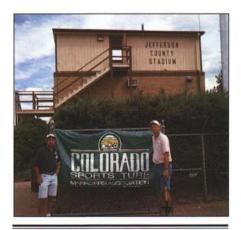


Tips on how to build stadiums without public funds highlighted the Colorado STMA's Vendor Expo and Meeting in Littleton, Colo., last September.

On a beautiful autumn morning, over 60 Colorado members and guests met at Jefferson County Stadium, which is mainly under the care of Colorado Chapter president Dave Rulli, By Hanson and two Jefferson County school officials. The facility is the primary football field for the 17 high schools in the system. Not only does it field 85 fall football games, it hosts 119 boys soccer matches in the fall, 119 girls soccer matches in the spring and 30 track meets. With this kind of intense use, attendees picked up many ideas they could use from By's presentation on the stadium's management program.

Because the school system of 86,000 students has grown rapidly and desperately needs additional athletic fields, but lacks the funding, Tom Manoogian, Major League Marketing Inc., of Denver, leads an effort to tap private sources. He discussed the process they went through to solicit \$7.2 million in private funds that will soon go towards additional stadiums.

To raise the money, Manoogian has worked with the various entities of the



Colorado STMA president Dave Rulli (left) and By Hanson welcome members and guests to the chapter's Vendor Expo and Meeting last September. Photos courtesy: Trusty & Associates.

# Colorado Offers Lesson in Stadium Funding

school system that have been making their own purchasing decisions and buying from different vendors. The entities' ability to do so has allowed Manoogian's firm to seek proposals from private companies on the set amounts they would donate to the system in exchange for exclusive marketing arrangements for a set period of years.

Part of the agreement is that neither students nor parents will pay more for products or services than they would otherwise. Also, massive displays of advertising are prohibited. So far, the agreements seem to have provided win-win-win situations for everyone. A number of school systems around the country are discussing similar arrangements with Manoogian.

Next on the meeting's agenda, 14 vendors had the opportunity to address the group and present information about their products and services. Then, as part of the Chapter Visit Program, STMA executive director Steve Trusty talked to the members and guests. He urged the audience to show their appreciation to the vendors that support STMA and the local chapter, stressing that the very least members could do would be to see each of the vendors and thank them for attending.

Trusty then gave an overview of where the Certified Sports Turf Manager (CSTM) program stands. There seems to be considerable interest in certification of sports turf managers, so STMA is planning to finalize the CSTM program for introduction at their annual conference in Florida next January.

After an excellent barbecue lunch, everyone had a couple of hours to spend with the 14 vendors. Comments from vendors, members and guests were positive. It was a day well spent.

#### **STMA Chapter News**

Florida Chapter #1: The Florida #1 Chapter will meet on December 10 from 8:30 a.m. to 1 p.m. at University of Miami in South Miami. The meeting's topic is turfgrasses for sports fields.

For information, contact John Mascaro: (954) 938-7477.

**MAFMO:** The board of the Mid-Atlantic Athletic Field Managers Organization (MAFMO) will hold a planning meeting at 6 p.m. on November 20 at the Last Chance Saloon in Columbia, Md.

To provide input for this planning meeting or for information on the MAFMO Chapter or upcoming activities, contact The Hotline: (410) 290-5652.

Midwest Chapter: The Midwest Chapter of STMA will hold its annual meeting on December 3 in conjunction with the North Central Turfgrass Exposition at Pheasant Run Resort and Conference Center in St. Charles, Ill. The annual meeting will wrap up that day's special sports turf track of educational sessions. The NCTG Exposition runs from December 1 through December 3.

For information, call The Chapter Hotline: (847) 439-4727.

**Colorado Chapter**: The Colorado Chapter of STMA will again participate in the Rocky Mountain Regional Turfgrass Association (RMRTA) Annual Turf Conference and Trade Show. This event will be held December 10-12 at Currigan Hall in downtown Denver. For more information on this event, call (303) 770-2220.



Bobbi Smith, executive secretary for the Colorado STMA, registers attendees for a day well spent.

For information on the Colorado Chapter, call the 24-Hour CSTMA Chapter Hotline/FAX: (303) 438-9645.

Minnesota Chapter: As part of the Minnesota Turf & Grounds Foundation, the Minnesota Chapter of STMA will take part in the MTGF 4th Annual Conference and Trade Show, which will be held December 10-12 at the Minneapolis Convention Center. For more information on this event, contact Scott Turtinen: (612) 473-8169.

For information on the Minnesota Chapter's schedule for the conference or other upcoming activities, contact Connie Rudolph: (612) 646-1679.

Southern California Chapter: The Southern California Chapter will hold a December Pesticide Workshop at Mira Costa College. There will be 8 hours of CEUs offered at this event.

Plan now to attend a Super Bowl Seminar in early January at Qualcomm Stadium, the site of the 1998 Super Bowl. Further details on these December and January events will be announced soon.

For more information, contact The Chapter Hotline: (1-888) 578-STMA (toll free in Southern California).

**Iowa Chapter**: The Iowa Sports Turf Managers Association will again participate in the Iowa Turfgrass Conference, January 26-28, 1998, at the Des Moines Convention Center. Along with a special sports turf "track" of educational sessions, the chapter will hold its annual meeting. More details will be announced soon.

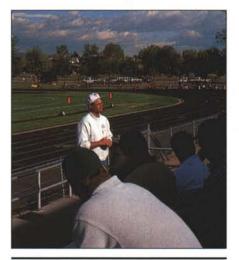
For more information, contact Lori Westrum at The Turf Office: (515) 232-8222 (phone) or (515) 232-8228 (fax). **KAFMO**: For information about the Keystone Athletic Field Managers Organization (KAFMO Chapter STMA) or upcoming activities, contact Dan Douglas, Reading Phillies Baseball Club: (610) 375-8469, extension 212.

#### **STMA Chapters on the Grow**

Northern California: The Northern California Chapter of STMA will hold its Grand Opening and Fall Seminar on Tuesday, November 11, at the Oakland Alameda County Coliseum complex with seminar sessions in the West Side Club of the stadium. Registration begins at 8 a.m. Seminar sessions will run from 9 a.m. to noon, followed by lunch and a facilities tour.

Featured speakers include Steve Wightman of Qualcomm Stadium (formerly Jack Murphy Stadium), Clay Wood of the Oakland A's, and Bob Milano of the University of California, Berkeley. The facilities tour will be conducted by Dave Renetti, facility manager of the coliseum, and will include the recently renovated stadium, behind-the-scenes areas, the new playing field and the new arena. For information about this event, contact UC Davis Grounds Services Office: (916) 752-6741.

For general information about the Nor-Cal STMA Chapter, contact Gail



By Hanson tells Colorado chapter members and guests about the intense use of Jefferson County Stadium, which serves as the primary football field for no less than 17 high schools.

Setka at the UC Davis Grounds Office: (916) 752-5035 or fax at (916) 752-9631.

Arizona: The Sports Turf Managers Association of Arizona will hold a workshop on November 13 at the Mesa Hohokam Baseball Complex in Mesa. Registration begins at 8:30 a.m. Harold Gentry, of the City of Mesa, will open the educational sessions with information about the baseball complex. Other workshop topics include "Soils," presented by Dr. Henry Indyk; "Networking and Chapter Development," by Mike Schiller; "General Baseball Field Care," by Murray Cook; and the "STMA Certification Program," by Steve Trusty. Following lunch on-site, attendees will have an opportunity to visit with the exhibitors. A tour of the facility is included in the workshop.

Mark your calendars for December 4 and 5 and join the STMA of Arizona in two major events in Yuma. Begin with the Second Annual City of Yuma Golf Tournament, which will be held at Desert Hills Golf Course in Yuma on December 4. Then take part in the Fifth Annual City of Yuma Sports Turf & Equipment Field Day on December 5. For more information on either of these events, contact Larry Munoz: (520) 329-2824.

For information on the STMA of Arizona or other upcoming events, contact Bill Murphy, City of Scottsdale Parks and Recreation Department: (602) 994-7954.

**Mid-South**: Interest is building for an STMA chapter in Tennessee, Alabama, Mississippi, Louisiana, Arkansas, and bordering areas of Kentucky and Missouri.

For more information, contact STMA National Headquarters: (800) 323-3875.

**Nevada**: Plans are moving forward on the formation of a Nevada Chapter of STMA. Following positive responses at the August introductory meeting, an organizational meeting has been held.

For information on this developing chapter, contact Ibsen Dow: (702) 649-1551.

**Great Plains**: For information on the Great Plains Sports Turf Managers Association or upcoming activities, contact Mark Schimming, City of Wichita: (316) 337-9123.

