Inside:
Aeration and Soil Compaction in Turf
The Basics of Maintaining SYNTHETIC TURF
...and more!
You’re Always Ahead of the Game with a COVERMASTER® Raincover...

“Great Service... The Best...”

wrote Chip Baker, Asst. Baseball Coach, 
Florida State University, Tallahassee, FL

Chip’s comments confirm what we hear from the many groundskeepers who use a COVERMASTER® raincover to keep their fields dry and ready for play.

Call us and we’ll gladly tell you more.

The COVERMASTER® Advantage...

• Superior in strength and UV resistance
• Outstanding heat reflective properties
• Light weight – easy to handle
• Widest materials for least number of seams
• Largest choice of weights and colors
• Backed by truly dependable warranties

TARP MACHINE VIDEO!

Call, fax or e-mail for a free video, material samples and a brochure.

CALL TOLL FREE
1-800-387-5808
covermaster.com
E-MAIL: info@covermaster.com

COVERMASTER INC., 100 WESTMORE DR. 11-D, REXDALE, ON, M9V 5G3
TEL 416-745-1811 FAX 416-742-6837

---

Put your best performer on the field -

Diamond • TEX®

Safety • Playability • Less Maintenance

-A Martin Limestone Product

Diamond-Tex is always a good call because it provides a championship level infield surface that drains and recovers quickly after a rain, compacts to a firm surface that plays true, and requires less daily maintenance than other materials. Diamond-Tex is ideal for new field construction or as an immediate upgrade to existing fields. And with three grades of Diamond-Tex, there’s one sure to provide you with the ideal surface for your specific needs.

Also available -

Diamond Gro Turf

Topdressing Products
100% Organic Compost, Compost/Topsoil Blends & 100% Screened Topsoil

For more information or to request a sample, call 800.823.7866 or visit www.diamondtex.com
KAFMO Cup Golf Tournament is October 8 — benefits scholarship program

The KAFMO Cup Open golf tournament is the main fundraiser for the Waddington/Harper Scholarship Fund. Since 2001, thanks to the generosity of the sponsors and golfers, the tournament has raised more than $13,000 for educational grants. This year the scramble format tournament will be held October 8 with a 12:00 pm shotgun start at Dauphin Highlands Golf Course. Last year’s winning team was James Wian III, Tom Kinzer, Kevin Bevenour, and Sean Cooper, who repeated their 2010 victory.

KAFMO’s Waddington/Harper Scholarship is named in honor of Dr. Donald Waddington and in memory of Dr. John Harper, two legends of the Penn State turf program. The scholarship will be awarded to identify and recognize outstanding students who plan careers in sports turf management and to advance the student’s educational potential in the science of turfgrass management. Qualified applicants must be enrolled at an accredited college or university in an approved turfgrass program; must have completed a substantial portion of the requirements needed for graduation; must demonstrate an interest in sports turf management; and be willing to accept the scholarship in person at the KAFMO’s annual Athletic Field Conference.

Requirements for entry include completing the scholarship brochure, which is available as a pdf file on KAFMO’s website (www.kafmo.org/scholarship), college transcript, letter of recommendation from faculty, and a statement detailing your interest in the field of sports turf management. All application materials must be submitted by December 3, 2012.

The Keystone Athletic Field Managers Organization was formed in 1994 by a small group of individuals who were concerned about the quality of the athletic fields in Pennsylvania. In 1997, KAFMO became incorporated as a chapter of the Sports Turf Managers Association. Today, KAFMO is over 300 members strong and each individual is committed to enhancing the professionalism of athletic field managers in the Keystone State.

Our goals are to improve the safety, playability and appearance of all athletic fields in Pennsylvania. As an organization we strive to accomplish our goals through seminars, field days, publications and networking with other professionals in the sports turf industry.

Any individual, institution, organization, vendor or supplier who has sincere interest in athletic field maintenance is welcome to become a member. Our members represent a wide range of professionals in the sports turf industry. From high school, collegiate and professional athletic facilities, to parks and recreation departments, municipalities, educators, youth leagues, contractors, and commercial vendors, our membership base is made up of a broad range of individuals who pool their knowledge together for the good of our craft.

Annual Events include:
- Summer - Field Day(s)
- October - KAFMO Cup Open golf tournament – proceeds benefit the Awards Fund
- January - Eastern Pennsylvania Turf Conference
- January - Northeastern Pennsylvania Turf Conference
- February - Annual KAFMO conference featuring seminars, exhibits and the annual awards program
- February/March - Western Pennsylvania Turf Conference
- March - Northwestern Pennsylvania Turf Conference

Educational Grants and Research

KAFMO has donated over $47,000 for educational grants and sports turf research since 2001. KAFMO provides scholarships for sports turf education and sponsors collegiate teams in the Sports Turf Managers Association’s Collegiate Challenge at their annual national conference. Research beneficiaries include: Sports Turf Managers Association’s Foundation for Safer Athletic Field Environments (SAFE), Pennsylvania Turfgrass Council’s fund for sports turf research at Penn State University and the Pennsylvania Turfgrass Research Fund, Inc.
Aeration and soil compaction in turf

By Dr. Beth Guertal and Dr. Dave Han

The effects of traffic and compaction in turf are usually easy to see–thin turf, worn paths, areas of bare ground that do not respond to applications of fertilizer or water. Turfgrass growing in compacted areas has shallow rooting, causing greater susceptibility to drought and other stress. The soils in compacted areas have low air porosity and reduced infiltration. Such compaction is most likely to occur in fine-textured soils (those with a higher clay content), but over time all soils are susceptible to compaction.

Turf managers know that one key to correcting soil compaction in turf is aeration, also known as aerification. Aerification is performed using a wide range of equipment which drills, slices, spikes, punches or water-injects the turf and its underlying soil to various depths. Sometimes the equipment removes a plug of turf, and sometimes it only cuts a slit or punches a hole. With some equipment there is the additional benefit of a small amount of thatch control, as the slicing or core removal also removes some thatch. Regardless of the exact piece of equipment used, almost every turf manager has a piece of aerification equipment in their shed.

Factors affecting the effectiveness of aerification include soil wetness, tine size, depth of aeration, soil texture, aerification frequency, and equipment type. Turf aerification research is somewhat difficult to do. Studying soil compaction requires large plots, uniform areas of compacted (and noncompacted) turf, and possibly many different pieces of equipment. Additionally, collecting the data required to show treatment differences requires intensive sampling and a lot of labor. Typical data collected from compaction studies may include soil bulk density, soil penetrometer resistance, surface hardness, water infiltration, shoot density, and root length or weight. The objectives of this article is to provide explanations of the type of data collected in turf compaction experiments, and to discuss some past and current turfgrass compaction research.

Research

Our previous work at Auburn University found that aerification was less likely to have an effect in noncompacted soils as compared compacted. We looked at the effects of using a deep, hollow tine aerifier (8 inch deep, 3/4 inch diameter) at two locations: a heavily trafficked and compacted marching band practice field, and a lightly trafficked field at the Auburn University Turfgrass Research Unit. At the heavily trafficked site, every additional core aerification in a given year decreased soil resistance. This was not the case at the lightly compacted site. Only one aerification was needed in a given year to produce a significant reduction in soil resistance. At the heavily trafficked site, the effects of deep-tine aerification actually lasted about 3 weeks. This supports the conclusions of previous workers that frequent aerification might be needed on compacted sites.

However, we did not evaluate the effects of different equipment (e.g., tine depth, soil vs. hollow tine aerifier, soil textion in trafficked turf). We also wondered if continuous aerification would allow a compacted layer of soil to form at the bottom of the tine working depth. These “aerification pans” can form over time from the effect of tines pressing down on the soil below the level where they actually penetrate and remove soil. This research looked used three different pieces of equipment (a pull-behind aerifier, a GA-60 standard tine aerifier and a Soil Releiver deep tine aerifier) using both solid and hollow tines. Plots were aerified four times per year and traffic was artificially applied with a heavy roller to induce compaction. Compaction was evaluated by measuring soil resistance to a soil penetrometer at depths down to 12 inches.

The equipment used has a large effect on the amount of compaction relief and where it occurs. The deep tine aerifier (8 inches deep) reduced soil resistance when either solid or hollow tines (5/8-inch diameter) were used. The standard tine aerifier (4 inches deep) often produced a significant reduction in soil resistance.

Things we measure in turfgrass compaction experiments

Soil Bulk Density: Bulk density is defined as the mass of a unit volume of dry soil. To collect a bulk density reading a sample of known depth and diameter (typically 6 inches deep and 3 inches in diameter) is removed from the soil. The soil sample is dried and weighed and the bulk density is expressed as the mass per volume (grams per cubic centimeter). As the soil is compacted the bulk density increases, because more soil particles are forced into a smaller volume and soil pore space is reduced. Sandy soils typically have a higher bulk density than soils high in clay or loam, because sandy soils have few of the very small pores associated with fine-textured soils that have clay and organic matter. Additionally, sandy soils that contain sand in a range of sizes (as is a typically sand-based putting green) are already tightly packed, as smaller sand grains fit in between larger.

Typical bulk densities for clay and silt loam soils may range from 1.0 to 1.5 g/cm3, while the bulk density of sand-based soils may range from 1.3 to 1.8 g/cm3. At the upper end of these ranges the bulk density is great enough that root penetration may be inhibited. As comparison, the ASA recommendation for bulk density of putting green roodzone mix is 1.2 to 1.6 g/cm3. It’s important to note that bulk density is highly variable from location to location. One sample will usually not be an indicator of the bulk density of an entire field or turf area.

Soil Penetrometer Readings: A soil penetrometer is a device used to measure the compaction of the soil. What is actually measured is the resistance, or amount of pressure needed to push a tipped rod through the soil. The rod tip is equipped with a load-sensing cell, and the soil strength is recorded as the tip is pushed down through the soil. Soil penetrometers used for research are very sensitive, and require some practice to use correctly to obtain accurate measurements. They are also very expensive, about $6,000.

Hydraulic Conductivity: Hydraulic conductivity is the ease with which soil transmits water. In turfgrass what we often measure is the saturated hydraulic conductivity, which occurs when all soil pores are filled with water. Saturated hydraulic conductivity is typically measured using a double ring infiltrometer, which consists of two metal rings (one around 12 inches in diameter and the other around 18 inches), with the smaller placed inside the larger. Water is added to both rings until a height of water is maintained for a period of time, which indicates that the underlying soil has become saturated. The drop in the height of water inside the smaller ring during a given period of time is used to calculate the saturated hydraulic conductivity, which is reported in units such as inches per hour.

Small-diameter (6 inches) infiltrometers can be purchased from many turf supply catalogs. The intended use of these units is to provide turf managers the ability to measure infiltration rates of their turf soils quickly and directly in the field. Because research has shown that double-ring infiltrometers with an inside ring diameter of at least 12 inches produce the most accurate measurements of water infiltration, the accuracy of 6 inch diameter rings is a concern. A 1991 research study by D.H. Taylor compared single and double-ring infiltrometers with inner-ring diameters of 6, 8 and 12 inches on a variety of turf areas, from golf greens to football fields. They found that infiltration rates varied widely within each sampled turf area, even when the largest diameter rings were used. The conclusion from their work was that infiltration rates measured with ponded water should be used only as a rough estimate, and results should be used with caution.

Clegg Impact Readings: Typically used to measure the hardness of a turf surface, the Clegg hammer calculates the hardness of a surface based on its reaction to a weight dropped on the surface from a consistent height. A diagnostic tool for discovering differences in surface hardness due to aerification treatments, work has also started on calibrating Clegg hammer readings to field hardness or softness. For example, a survey of 24 high school athletic fields had Clegg values that ranged from 33 to 167 Gmax. For comparison, a tiled concrete basement floor had a Gmax reading of 1280, which was reduced to 260 when the floor was covered with a carpet pad. In another study, compacted Kentucky bluegrass plots had a value of 206 Gmax, while plots that were not compacted had a value of 93. A survey of college and professional soccer players compared their perceptions of soccer fields that had been used to collect Clegg data. Typically, fields with a hardness reading between 90 and 120 Gmax could not be differentiated by players.
in resistance when hollow tines (5/8-inch diameter) were used.

The effect of the different sizes of aerification equipment on the relief of compaction as measured by soil resistance was studied. The deep tine aerifier reduced soil resistance from 3.5 inches down to 7.6 inches, but did not reduce compaction in the top 3 ½ inches. The standard tine unit did reduce resistance significantly in the top 3 inches, but had no effect deeper in the soil.

The long-term effects of continued aerification with a standard tine unit fitted with solid tines (5/8-inch diameter) for 3 years in a row, at a depth of 2.3-5 inches, showed that there was significantly more resistance than in unaerified plots. This indicates that a layer of compacter soil (known as a “pan” or “aerification pan”) had developed near the bottom of the tine stroke. This illustrates the need for periodic deep tine aerification to avoid this problem. The pan of compacted soil was less severe when hollow tines were used, but still could build up over time.

When the surface hardness of the turf was measured using a Clegg hammer, all forms of aerification produced a softer surface at least for one week after treatment. The standard tine aerifier with hollow tines tended to produce the softest surface.

Conclusions

• Compaction of turfgrass soils lowers the percent macropores in the soil; a decrease in macropores limits soil aeration, which hurts root growth.
• Core aerification, especially solid tine, may not help eliminate thatch.
• Effects of aerification in heavily trafficked soils may be short-lived (about 1 month).
• Diagnostic techniques for detecting compacted soils, such as infiltration measurements or soil penetrometer readings, are widely variable, even across supposedly uniform surfaces such as a putting green.
• Compacted “pans” develop over time at the bottom of the tine’s penetration into the soil, especially when using solid tine equipment.
• Deep tine equipment is more effective at reducing soil compaction at depths below 2.5 inches.

Beth Guertal is a professor of agronomy & soils at Auburn University; Dave Han is an associate professor of agronomy & soils at Auburn University.
The basics of maintaining synthetic turf

By Jim Cornelius, CSFM

Let’s begin by acknowledging that synthetic infill fields are NOT maintenance free. No matter what anyone says, these fields need maintenance routinely. Secondly, what comes out of these fields must be replaced, meaning that the infill material disappears from the field as it is carried off by players, wind, rain, snow, snow removal, routine maintenance, etc., and being that the infill material is the supporting substance of these fields, it will need to be replaced.

When we service a field we typically find that most fields are lacking infill material whether it’s all crumb rubber or rubber/sand mix; we also find the turf fibers are laid over with minimal support causing them to prematurely break off. But the worst enemy to the synthetic fibers is the sun and ultraviolet rays that it must endure day after day. By maintaining a proper amount of crumb rubber and allowing approximately only a ½ to ¾ inch of exposed fiber, you are preventing the fibers from folding over and lessening the amount of material breakdown due to ultraviolet rays. On average an athlete or end user will carry off 3-4 pounds of infill material during a playing season. This needs to be replaced annually to support the fibers and provide longevity for the playing surface.

To calculate your needs, you need to measure the amount of crumb rubber in a variety locations within the synthetic field boundaries (we measure 10 locations using the ASTM 1936-10 guidelines for Gmax testing as our test points) to determine what you have. If your turf is 2 ¾ inches tall and you have less than 1½ to 1¾ inches of infill, you need to add more. Most crumb rubber infill calculates to 0.55 pounds per square foot for a ¼-inch lift. Most rubber/sand infill systems will not need additional sand as it tends to stay stable within the turf. There are rare occasions when the sand is removed due to operations like snow plowing or torrential downpours that cause flooding; if this occurs you will need to be added to the mix.

Grooming essential

Grooming the field is an essential maintenance task that needs to be better understood. It is highly recommended to use a good groomer designed for synthetic turf such as the Greens Groomer or the Wiedemann units. When using any groomer, adjusting it so that it lightly touches the fibers will provide the best results. Do not lower the entire weight of the groomer onto the turf unless you are trying to level out or move crumb rubber to fill an area such as a lacrosse goal crease. When tickling the fibers with the groomer’s brushes the intent is to stand the fibers up to minimize the lay over from use.

Often I am asked how much or how often should I groom my field. There is no true, exact answer but from my experience I recommend that the field be groomed every 300-350 hours of use. I have read on the web articles saying 400-500 or more hours and much depends on the manpower available. At minimum it should be groomed several times during the highest use periods and less during the down times if there is such a thing.

Trash and debris removal is another constant nuisance and needs to be done whenever it exists. Timely removal is important to keep the trash and debris from becoming ground into the infill material, which causes removal problems later. Sunflower seeds, chewing gum, candy wrappers, cigarette butts, wire ties from nets, and broken sand bags or stone bags used for weighting down goals are just some of the typical items we see when deep-cleaning a field.

Removal of chewing gum is largely overlooked and needs to be addressed as soon as possible; most chewing gums today never harden and with the intense heat in the field it becomes gooey and eventually spreads across the turf surface. To remove use either ice cubes or a freezing spray agent to harden the gum, chip it off and remove it.

Weeds can exist and thrive in synthetic turf and if your turf is surrounded by bermudagrass or any other creeping stolon-producing grass, be prepared! These grasses tend to find their way into and under the synthetic turf and since temperatures on these fields reach optimal growing peaks before the surrounding turf, once they start spreading beneath they will find the drainage holes and send their shoots upward for the sun light. These plants become very hard to remove due to their sewing machine affect and in most cases will need to be treated chemically (as approved by the turf manufacturer) to kill them off. Easiest way is to prevent it from growing under from the beginning, understand it, look for it and act quickly when discovered.

Wear areas need attention

Pay attention to heavy wear areas; these fields wear just like natural turf with the exception that you can’t grow it back in once it is gone, so don’t let it wear out. Football—center of the field between the hash marks; soccer—penalty kick area, corners, goal crease; field hockey—goal crease, penalty arc; lacrosse—goal crease areas, center of the field where face offs take place.

Lacrosse, whether men’s or women’s, has the ability to destroy a goal crease in as little as one year if not maintained. The infill material gets kicked or shuffled out, the fibers take a beating and break off quickly without the support of the infill material and before you know it, you have a big black area that is the backing of the turf that you will have to patch or replace. If you have to do this, use either the pieces you saved from installation or maybe cut out from outside the playing area so that it matches in color and type.

Even after one year it won’t be a perfect match (even if left on a roof top to sun burn like the turf on the field) because the surrounding fibers in the field will have seen use and started to mat out or break down and if you are patching it must have worn out. Contact the manufacturer or a reputable service company to save you the pains of having to deal with the patch. There are special materials that you will need and the local hardware store, big or small, does not carry them. Don’t use Gorilla glue, liquid nails, and styrene bonding agents, and/or drywall screws or framing nails for repairs as they are not designed for synthetic turf and may become a liability nightmare later down the road.

Painting may or may not have to be done on these fields depending on whether or not everything was inlaid during installation. If you have to paint
use only paint that is approved for synthetic turf; it seems that every year some company announces that they have synthetic turf paint, but do your homework and look at a company history and get recommendations.

If you need to remove the paint ask the supplier: How this is done? Can it be done? What will it cost? How long will it take? Do you need special equipment and chemicals? Have their products been endorsed by any manufacturers and is your turf manufacturer one of them? If you have to paint try to do it at times other than the heat of the day, and if you are removing lines it works much better to do this at night or early in the morning when the turf is the coolest. Chemicals used during the heat of the day will evaporate long before they start to work and this will only cost you more time and materials.

Dust, dirt, pollen, body skin cells, screws, nails, track spikes, hobby pins and human hair to name a few do not break down in these fields, they remain for much of the life of the field and it is truly amazing how much exists. Special equipment with hepa-filter vacuums will be able to clear this out and remove it from within the turf. Rain, snow sleet and hosing do not help.

Static is common and can increase with humidity and sometimes age; if you need to combat this you can do so with a several household products. Liquid Tide washing machine soap and/or the use of a softener (Snuggles!) both work well when sprayed on the turf.

Eventually someone will ask if these fields need to be disinfected and my suggestion is to review Dr. Andrew McNitt’s research pages to obtain the best answer (http://cropsoil.psu.edu/ssrc/sportsturf-scoop). Information can also be found by visiting the Synthetic Turf Council’s website at http://syntheticturf council.org/.

Lastly, unlike natural turf, we can’t see what is going on with these fields beneath their surface. ASTM has recommended that these fields be tested annually to determine their hardness in G force (better known as Gmax). There are those who do not believe this is necessary, but I can tell you that it is an important tool. If you don’t do it for a year, two, four or six you have no history data to determine what has been going on. I have tested 2-year-old fields and 11-year-old fields with less than ¾ inch of fibers remaining and almost no infill and yet the newer one tests harder than the older. Does this mean we are no longer testing the turf and we are now testing the stone base? Good question and since we don’t have 11 years of historic Gmax testing, we can only imagine we are now testing the Gmax of the stone base.

Synthetic fields are a great tool and if properly maintained will provide years of play for all users. What you have just read is only the tip of the iceberg and there is much to learn about these fields. Don’t be afraid to ask your peers or contractor if you don’t know; it may prevent you from making a huge mistake.

Jim Cornelius, CSFM, manages Fisher and Son Company’s Pro Services division. His commitment to educating the owners of these fields will ensure playability, safety and performance for all users, which will eventually create longevity to the ever-evolving synthetic turf industry and the fields they service.

Meet your peers in KAFMO

KEITH EVANS
Athletic Field Supervisor,
Lebanon Valley College

What are your current job responsibilities?
Evans: I am the Athletic Field Supervisor for Lebanon Valley College. My responsibilities are maintaining roughly 100 acres of athletic fields and common areas. We have several game fields and are currently having an artificial field being installed in our football stadium for football, lacrosse and field hockey.

What is the best part of your job?
Evans: The best part of my job is being involved with the sports programs and being able to put a quality field together for student-athletes.

What’s the worst part?
Evans: This job can be very frustrating with all the things you have to deal with on a day to day basis, but I don’t think I can come up with something that would be the worst part of the job.

Rob Taylor,
Director of Buildings & Grounds,
Northern York County School District

What are your current job responsibilities?
Taylor: Manage the Custodial, Maintenance and Security departments in the school district. This includes all the district facilities as well as the athletic and fields around the district. We have one high school, one middle school, four elementary schools for a total of 5 buildings between them, as well as an administration building and a Sports & Learning Center. We also have a football stadium and all-weather track, a soccer/field hockey stadium, two softball fields and a baseball field. We have 6+ practices fields that are used heavily. All of our fields are natural grass.

(Continued on Page 11)
**Using plant growth regulators**  
We’ve all had issues with the timing of painting athletic field lines. Conflicts with events, scheduling, mechanical breakdowns and of course, Mother Nature’s interventions! If you’re mixing bulk paints to line your fields, mixing trinexapac-ethyl (Primo Maxx plant growth regulator) with your field paint can be a huge time saver.

This product slows the elongation of the grass blade cells which in turn slows vertical growth. When applied with the paint at a rate of 1oz/gal (of mixed paint), you’ll notice the lines will have a shorter appearance then everything else and stand out more. Less leaf tissue will be cut from the line while cutting your fields allowing the paint to remain longer (with the exception of rain), which will extend the time between paint applications on lower use or practice field situations.

If excessive rain does occur and the paint has become very faint, the grass that was painted should have a darker green and denser appearance, allowing you to repaint without having to re-measure and string your fields.

I found with one application (at the 1 oz. rate) near the beginning of the spring or fall scholastic sports seasons we usually can usually get a solid 6 to 8 weeks of growth control for the lines. I typically apply this on the second painting of the field lines.

Also, I’ve found that applying it to the entire field helps in several ways:
1. The stand of turf becomes denser.
2. Less frequent mowing.
3. Fewer clippings equal less clumps.
4. If timed correctly you will have a surge of growth while the field is coming out of regulation. We’ve found this helpful on football and lacrosse fields with speeding recovery at the end of the season. As always, please be sure to read the label and double check your math before applying.

— Jon Yorgey, Grounds Foreman, Wyomissing Area School District

**More on Primo Maxx use**

Mixing Primo Maxx and table sugar is the best thing that I have used for turf that is in the shade. I do the following:

Spray Primo Maxx at 1/3 rate every 2 weeks with 5 lbs of sugar per 100 gallons of water. Dilute the sugar in 10 gallons of hot water before pouring into tank. Sugar solution can be sprayed alone or before Primo Maxx so it can be watered in.

— Steve Peeler, SE Peeler Associates, Cranberry Township

**Decompress your soil this fall**

Deep tine or rotary decompression can be a great tool for athletic field managers to use during the fall. These practices are useful to fracture soil deeper than regular core aeration. There may be a layer of compaction from construction that is 6-8 inches deep, or the compacted zone that results from repeated core aeration at a 3-4 inch depth.

The result is usually poor rooting and water problems: fields that “fill up like a bathtub.” Using a solid tine or spade-type machine to break through the compacted layer can help. Some of the benefits that field managers see include improved rooting depth and better surface drainage (water has a place to go).

Deep tine or rotary decompression is not great where there are many rocks or buried debris. It’s also not a substitute for good grading or a replacement for installed drainage systems. It can help break through compacted layers that are below the reach of your core aerator.

It’s important to remember that there is little benefit if done when the soil is dripping wet. If you are sub-contracting the service, be sure to communicate about your field’s moisture levels as you schedule.

— Nancy Bosold, Penn State Extension

**Using plant growth regulators**

— Jon Yorgey, Grounds Foreman, Wyomissing Area School District
Prove your excellence & enter
Field of Distinction Awards

By Dave Anderson

A former Field of Distinction Award winning field from Boyertown School District.

One of the highlights of each year’s KAFMO Conference is the awarding of the Field of the Year distinction. The Field of Distinction (FOD) Award program holds a very special place in my heart, because not only have we been a past FOD recipient, it has also been my distinct pleasure to be both part of the judging of entries and notifying the award winners. I believe it is as much a thrill for me to contact an FOD winner, as I’m sure it is for them to receive the recognition.

We on the board have become more impressed with the quality of FOD presentations over the past several years. Early entries consisted of two to three page reports with a couple of grainy photographs. Now we receive professionally produced documents, some containing several pages of field history, methods of improvement, innovations, and much-improved photographs. The time and pride our entrants put into their fields is evident by the excellent presentations that we are now receiving.

However, we on the board feel that there are probably more outstanding individuals who need to be recognized for both fields and for their contributions to the industry. This is possibly our fault for not promoting and emphasizing the opportunities that you field managers may have through entering your fields in the FOD competition.

We would like to take this opportunity to more of you to enter your field to be considered for FOD. How you get started is go to our website www.KAFMO.org and click on the awards category at the top of the page. On the awards page, scroll about halfway down to the “Field of Distinction Application Information.” The information is fairly self-explanatory; however, I would like to highlight a couple of key items that could be beneficial to both the applicant and the judges:

1. Entry deadline is December 10, 2012. Please have your applications in before the deadline for consideration.

2. Your facility must be a KAFMO member. While we realize there may be some outstanding fields of facilities that are not KAFMO members, our efforts as board members of KAFMO are to promote KAFMO interests.

3. We do not judge fields based on level of play. For instance a professional field with more resources is not considered over a community or school field with limited resources. Each field is based on its own merits.

4. Photos should consist of the field and activities being on the field. We do not need photos of your equipment, or shots of you mowing or aerating. You have told us in your narrative how you maintain the field, we don’t need pictures for proof. However, before and after pictures are always welcome.

5. Please include what unique situations you encounter in maintaining your field. Examples would include but not limited to: poor construction, drainage issues, activities unrelated to athletics, and budget or manpower constraints. Please include what innovations you employ to overcome these obstacles.

Please consider entering your field in the 2013 KAFMO Field of Distinction. I would be quite pleased to announce your facility and your crew as winners of FOD at the 2013 KAFMO Conference. If you have any further questions or if I can be of assistance in helping you prepare your 2013 entry please e-mail me at dave_anderson@hempfieldsd.org or call me at (717) 371-5073.
Should you consider overseeding Turf-Type Tall Fescue (TTTF) on high school fields during the slower play summer months? We know it can handle heat and drought better than Kentucky bluegrass or perennial ryegrass, but we’ve seen it get clumpy after being exposed to traffic. The other question is how long does it take before it becomes more traffic tolerant than perennial ryegrass? Are the few summer months of establishment long enough?

We conducted a 2-year research project at Penn State to try to answer some of these questions.

On sports fields, tall fescue has been traditionally thought of as an aesthetically and sometimes functionally inferior turfgrass species compared to perennial ryegrass and Kentucky bluegrass. However, advances in breeding have resulted in new TTTF cultivars with improved characteristics compared to older cultivars. TTTF cultivars have a medium leaf texture (similar to perennial ryegrass), dense canopy, and dark green color. These aesthetic improvements have allowed TTTF to gain popularity in the lawn industry, especially in and around the transition zone. TTTF provides home owners a lawn that is typically both visually pleasing and functionally superior to other cool-season species in hotter and drier regions of the country.

One of the main concerns about TTTF is its unknown traffic tolerance shortly after seeding. Although tall fescue has been touted as being traffic tolerant, this traffic tolerance has been observed in turfgrass stands that have been established for at least 1 year. Most practitioners suggest field use should be delayed 6-12 months after seeding. In most high school athletic scenarios, fields are used continuously during the spring and fall. Major renovations must take place when fields are in the lowest demand: between the late spring and end of summer. This limited time frame has made seeding with perennial ryegrass a logical choice. Perennial ryegrass germinates in 5-7 days and can provide a playable athletic field 2 months after seeding. How does TTTF compare when established during a similar period?

Traffic-tolerant alternative?

At Penn State’s Center for Sports Surface Research (src.psu.edu), we wanted to evaluate if TTTF cultivars could provide a traffic tolerant alternative to summer renovation using perennial ryegrass. Specifically, could TTTF be seeded late in the spring and be ready for play by the beginning of fall? We conducted two experiments. The first evaluated the traffic tolerance of 10 TTTF cultivars, Kentucky-31 tall fescue, and ‘Fiesta IV’ perennial ryegrass. The TTTF cultivars included RK4, ‘Falcon V’, ‘Rebel IV’, ATF 1376, ‘Turbo’, ‘Shenandoah III’, ‘Justice’, ‘Firecracker LS’, ‘Rembrandt’, and ‘Faith’.

Both experiments were established from seed in late spring. We compared two establishment time periods: 10 weeks and 14 weeks. We wanted to see if there was any difference in traffic tolerance between these two establishment time periods. The difference we constructed somewhat mimicked starting traffic during high school pre-season or waiting until a week or so into the season before allowing play. Once the establishment periods ended, simulated field use began using the Brinkman Traffic Simulator (BTS). We trafficked the plots 3 times per week with 4 passes of the BTS per day. We measured traffic tolerance by assessing percent ground cover in late November. It’s important to remember that on this date, plots established for 10 weeks received 4 additional weeks of traffic simulation compared to the plots established for 14 weeks.

In Experiment I, our late-November ratings showed traffic tolerance differences between perennial ryegrass and TTTF. When the two species were given only 10 weeks to establish prior to simulated field use, perennial ryegrass exhibited greater traffic tolerance than all TTTF cultivars. However, when species were allowed to establish for 14 weeks before traffic simulation, all TTTF cultivars had at least equal to, and at times, superior traffic tolerance to ‘Fiesta IV’ perennial ryegrass. Thus we are suggesting that TTTF can be successfully used as an alternative to perennial ryegrass for summer renovation of sports fields if you can restrict play for at least 14 weeks. If you can only restrict use for 10 weeks or less after seeding perennial ryegrass will likely perform better.

Of the TTTF cultivars we tested, Turbo, Rembrandt, Falcon V, and Rebel IV consistently performed better than the other cultivars tested. However, the separation between the best and worst TTTF cultivars was not large in either year. Kentucky-31, which is widely regarded as a utility turfgrass, always had the lowest traffic tolerance.

Seeding rates and N fertility

In Experiment II, we wanted to evaluate how seeding rates and nitrogen fertility affect fall traffic tolerance of TTTF after spring establishment. We looked at four seeding rates: 6, 10, 14, and 18 lb/1000 ft.2. We also looked at the following nitrogen rates: 2.0, 4.5, and 7.0 lb of N/1000 ft.2. Our goal was to determine an optimum seeding rate and nitrogen fertility that would maximize traffic tolerance.

Multiple researchers have shown that when traffic is initiated shortly after seeding, it’s beneficial to seed perennial ryegrass at very high seeding rates. However, our results indicate that no differences exist when seeding TTTF at rates between 6 and 18 lb/1000 ft.2 if traffic is delayed for at least 10 weeks after seeding. Thus 6 lb/1000 ft.2 is adequate. Although seeding rate had little effect, our nitrogen regimes appeared to significantly influence traffic tolerance, but the results might not be what you would expect. Regardless of the establishment time, traffic tolerance was affected similarly by nitrogen fertility. The lowest N regime (2.0 lb/1000 ft.2) applied all at once at seeding, resulted in the highest traffic tolerance during both years of the study.

Let’s get back to our big question: is tall fescue a viable alternative to perennial ryegrass during summer establishment of an athletic field? Our research shows that if you can restrict use for at least 14 weeks after seeding, TTTF would be an acceptable alternative to perennial ryegrass for late spring/summer establishment. To maximize ground cover at the end of the fall playing season, TTTF should be seeded using at least 6 lb/1000 ft.2 and that you should apply 2.0 lb of N/1000 ft.2. We recommend that the 2.0 lb N/1000 ft.2 should be applied with a slow release nitrogen fertilizer (about 30% water insoluble nitrogen) early in the grow-in to speed establishment,
but inputs should be backed off during the season. During both years of our study additional nitrogen inputs during the establishment and/or fall traffic period resulted in lower percent ground cover in November.

If adequate time does not exist to grow-in your athletic field before field use in the fall, perennial ryegrass may be the better option. Perennial ryegrass establishes and matures quicker than tall fescue and appears to better tolerate traffic stress when play begins 10 weeks after seeding.

Before beginning a summer reestablishment with TTTF, a few important considerations should be made. Irrigation should be accessible for at least the first 2-3 weeks to allow the turfgrass plants to germinate and mature enough to tolerate the summer heat. We applied adequate but not excessive irrigation throughout the establishment period in order to avoid significant drought stress.

Also, precautions should be taken to monitor brown patch (a common disease of tall fescue that can be exacerbated by excessive nitrogen fertilization during hot, moist weather) although the same issue exists when establishing perennial ryegrass during the summer.

Lastly, maintenance of these fields will be just as important as the renovation process. Continual overseeding will be just as necessary as before to assist in divot recovery.

The use of newer TTTF cultivars may be appropriate for athletic fields established during a short time period in the summer. When given at least 14 weeks to establish, prior to play, our research at Penn State has shown that TTTF appears to form a traffic tolerant canopy that is comparable to perennial ryegrass.

Michael Shelley is an MS candidate studying under Dr. Andrew McNitt at Penn State University. Tom Serensitis is the Research Manager for Penn State’s Sports Surface Research Center.

Meet your peers...
(From page 7)

What is the best part of your job?
Taylor: Working in the district I graduated from and in the area I still live. Being an Alumni of Northern (Class of ‘81), I have a vested interest in assuring the district is functional and aesthetically in shape for the students, staff, administration and the community, the same as when I went to school here. We have a great school district and community. I am proud to be part of such a dynamic team here.

What’s the worst part?
Taylor: There really is nothing that I would consider the “worst” part. One part that is difficult, especially in today’s trying times, is to try to do more with less. Our budgets continue to decrease although most things are steadily increasing in cost. I have empowered and challenged my staff to look at opportunities to save money. This does not mean to do without, but to look at different ways to do things that save time and money. They do a tremendous job of identifying areas of improvement in order to save the district money. Most of them are taxpayers here too. They realize that the things they can do to help ultimately help their families as well. I can tell you, without their help and support, my job would be more difficult.

Give an example of how being a member of KAFMO has helped you professionally.
Taylor: It has enabled me to read and correspond with others in my profession on how they deal with today’s challenges. There are a lot of people in this profession that have a lot more years of experience doing this than I do, and I am still learning a lot from them. We are all in this together and if we can share ideas and proven methods that can help each other and save time and money, then I feel that is why we are all part of this organization. In my just over 5 years here at Northern, it has been a great help for me, and I appreciate all my brothers and sisters in the KAFMO family and I look forward to the future.

Michael Shelley is an MS candidate studying under Dr. Andrew McNitt at Penn State University. Tom Serensitis is the Research Manager for Penn State’s Sports Surface Research Center.
FieldSaver.®
Save your field from rain and wear.

FieldSaver® rain tarps are best-in-field for any field!

Special offers ONLY at www.CoverSports.com/KAFMO
For price quotes, sizes and fabric specs, visit www.CoverSports.com/KAFMO
sales@coversports.com • 800-445-6680

Full Infield Rain Tarps

18 oz. Vinyl Spot Field Tarps with Grommets or Weighted Edge

Also in 8 oz. poly

Infield Turf and Collar Protector

You're safe!
On TURFACE
#1 Conditioner On America’s Most Playable Fields

TURFACE ATHLETICS

Find a distributor and field maintenance videos
www.Turface.com or 800-207-6457