

John Mascaro's Photo Quiz

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This torn up grass on the sideline of this high school football field is not the result of player practice or even unruly fans, it is armadillo damage. During early spring and fall an armadillo loves to come out onto this nicely manicured bermudagrass field and root up pieces of turf. The sports turf manager has tried traps and bait, but still no luck. It would appear that the only way to get rid of him is to shoot it, but you can't have weapon on school grounds. So, while their guns must remain holstered, they have resigned themselves to allowing the armadillo to just do its thing. Each time the armadillo strikes and the damage is done, the crew has to go out and repair the field. An investigation continues as to whether the armadillo has been placed on the property by a rival team. Photo submitted by Mike Davis, turf & irrigation grounds crew, Bay

County Schools, Panama City, FL.

If you would like to submit a photograph for John Mascaro's Photo Quiz please send it to John Mascaro, 1471 Capital Circle NW, Ste # 13, Tallahassee, FL 32303 call (850) 580-4026 or email to john@turf-tec.com. If your photograph is selected, you will receive full credit. All photos submitted will become property of SportsTurf magazine and the Sports Turf Managers Association.



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Vendors as educators:

a true win-win situation

BEING SOLD TO probably isn't high on anyone's list of favorite activities. But for professional turf managers, it's part of the job; you need to get the equipment and services that work for your particular situation, and often the best information comes from the folks trying to sell you that piece of equipment, product or service. And the vendors know that the best customers, the repeat customers, are the best-educated ones.

Here we present perspectives on vendors as educators:

Dan Douglas,

stadium grounds superintendent, Reading Phillies

"[Our chapter] usually relies on educators and practitioners for presenters at our events. However, there are certain topics such as irrigation and equipment that we like to tap into the expertise of our commercial members. Our commercial presenters are not compensated but their company does benefit from the exposure. We ask that the presentations be educational and not an 'infomercial.'

"Our commercial members realize what a privilege it is to have a captive audience and typically only use subtle references to their company/products. If they don't, they won't be invited to speak again. We are always grateful for their support."

Paul Zwaska, Beacon Athletics

During my years working for the Baltimore Orioles as head groundskeeper, I worked with many vendors. But four or five in particular were of special value to me. These were vendors who were there to help me decipher problems, whether they had a product to deal with it or not. These vendors were more

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Facility&Operations

Listen first, relate next, then answer and educate as best you can and eventually a relationship will form.



interested in finding answers for me then selling product to me. In doing so, these vendors gained my trust and loyalty because I knew whenever they appeared at my door at the stadium, it wasn't always to sell me their products.

Often times it was a social visit more so then a sales call. They might spot something I missed or they would help me find a solution to a problem that didn't always involve a product they sold. In fact, many times it was something someone else sold, supplied or knew the answer to. In doing so they helped to educate me on situations that I might not be familiar with. In a way, they helped to mentor me and further educate me in different areas of my field management.

In return, I followed those sales people to whatever company they worked for and always purchased product from them when they had what I needed. In short, vendors who educate, especially when removing themselves from the sales side of their business while they are educating, go a long ways in earning the trust of their customers. And once trust is established, the relationship will grow as will the sales from that customer.

After working both sides of the fence, it is the one rule I would teach to all new sales people in our industry. Listen first, relate next, then answer and educate as best you can and eventually a relationship will form and before you know it, you have a dedicated customer.

At Beacon Athletics, the seminars we do on our own and the

seminars we perform in partnership with Toro and Diamond Pro are conducted in the same tone. These seminars are strictly educational with very little sales pitch involved. No one wants to spend money to come to a seminar only to have product shoved down their throat and presentations that are purely sales driven. People come to seminars to further educate themselves on their craft of groundskeeping. When performed properly, these seminars go a long way in establishing trust between the vendor and customers.

Jay Warnick, CSFM, World Class Athletic Surfaces

Yes indeed, the commercial segment of this industry does have a role and responsibility in educating and providing support to each and every person engaged in the daily challenges found within the profes-

It is obvious to state that the vendor of a product should be the expert and authority on the product(s) that they are selling. Next, the vendor should also be a valuable resource, working in counsel with the

Sports Turf Manager as to how their products and services might impact the overall operations regarding budget, efficiency, environmental responsibility and so forth. Another primary responsibility of a vendor is to remain diligent in seeking out advances in technology and to communicate how such improvements may improve the management program of a given facility.

With all of that said, I have not felt the term "educator" as applicable. A unique opportunity of a vendor is that of traveling to many different facilities, and as such I have felt the term "student" more aptly applies to me. The education and teaching comes from the experiences of those who work each and every day on their field, solving problems and pouring in effort. With that in mind, the role of a vendor becomes that of an information gatherer and disseminator, reaping the benefits of an industry that is free and forthcoming with its information.

Chad Price, CSFM, Carolina Green Corp.

Education is a big part of what we do for a client. Many times the client has limited knowledge of the construction process, or the various types of athletic field construction, or both. We have to walk them through design, construction, and maintenance of the field, and then tie that into a workable project budget.

Explaining the types of field construction and the expectations and performance of the field is the easy part for us. The more difficult part is working through the design and construction process. Requirements for erosion control, stormwater, and permitting varies at the state and local level, and the time needed to work through the process is often 2-3 months, or more. The time and costs before breaking ground often comes as a surprise for a client that "just wants to build a field."

Before the job starts, it is critical to coordinate various subcontractors so the field is not damaged along the way. Understanding the critical path of a schedule and knowing where the delays are most likely to occur is a huge part of timely completion. In every project, there comes a time when access over the field surface has to stop. So before that time, we make sure the concrete, steel, fencing, lights, etc. is either in place, or can be accessed from outside the field footprint.

So not only do we have to know our job, but the jobs of every-one else on the project, and anticipate their needs and actions. When I initially look at a job, I focus on everything that is under, over, or around the field first, and ask how that process will happen. Will they need to be on the field, or can they work from the outside? I try to determine the point at which all other construction traffic on the field can stop, and set that as the field construction start date. This date is usually part of the critical path in the construction schedule, if not a project milestone, so getting it established early helps everyone else adjust and keep on track.

In recent years we have been involved with field projects simply from a protection and event management angle. Facility managers or sports turf managers hosting a large concert or event on their stadium field need oversight and coordination assistance in order to prevent damage to the field. The same planning, scheduling, and coordination steps are used. We are at the planning meetings and on site during the build in and build out portion of the event to make sure the forklifts and cranes drive in the right places and proper flooring protection is used. After the event, we will do any repair work, but out protective work usually limits the amount of repairs.

Jeff Langner, Profile Products

The Keep America Playing Tour arose out of recognition that ball fields, especially at the youth or park & recreation level, are often improperly maintained, resulting in unsafe conditions for players. We knew that coaches and groundskeepers wanted to keep fields in top condition, but they sometimes lacked the resources, or perhaps the education, on how to best make this happen.

With Keep America Playing (KAP), our goal is to develop safety and playability standards that help kids play on fields that will not lead to bad ball hops, injuries, rainouts, etc.

In 2007, we formally launched the Keep America Playing program by hosting on-site field days in communities giving attendees

opportunities for classroom learning and hands-on training. We bring professional groundskeepers on-site to demonstrate techniques they apply to their own fields. We've held several national educational events, along with smaller local events in conjunction with our Turface distributor network and industry partners such as PONY Baseball and Softball, the American Baseball Coaches Association (ABCA) and the Sports Turf Managers Association.

Knowing that we couldn't reach every area of the country, we also developed comprehensive online educational materials, which are quickly referenced, printed off and used for field maintenance. The educational content covers areas such as infield maintenance, turf management and field construction, which are the same kinds of topics we cover in our live education events. Our hope is that someone walks away from an event, or from our website, and has a clear idea of tactics they can implement, whether big or small, to improve their local field and to ensure that fields meet basic safety requirements.

With the goal of providing on-site assistance and web site materials to improve field playing conditions, the Keep America Playing Tour successfully lives up to its objective. For more information about KAP, call (800) 207-6457 or visit www.keep-americaplaying.com.

Paula Sliefert, The Toro Company

The Toro Company is proud to make many investments in areas like product innovation, sustainable technology, and water management to name a few. Another investment Toro holds in high regard is our investment in Customer Education. Our educational offerings include classroom and "in the field" training available at distributors or customer sites. Toro is fortunate to have industry experts on staff to provide product training, equipment maintenance training and turf management education. The curriculum can be tailored to both current and future turf industry leaders. We have the capability to customize a training program to arm turf managers with the knowledge they need to succeed.

The Toro Company not only hosts service training schools at its headquarters in Bloomington, MN where attendees are surrounded by all the latest Toro equipment and technology, but also invests in training throughout the industry. This is accomplished several ways including the support of our distributor network to host field days and educational events, as well as partnering with other sports turf affiliated companies like Beacon and Diamond Pro to host a comprehensive session for turf managers which combines hands-on and classroom instruction. We also take pride in supporting education through the STMA and other industry associations and their chapters.

Vendors are in a good position to help with providing education for turf managers, keeping in mind that vendors gain as much from listening to turf managers and their challenges. The educational exchange between turf managers and vendors comes in helping the turf managers turn those challenges into opportunities. Toro invests in and believes wholeheartedly in helping turf managers learn how to become more efficient and productive in their positions.

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Irrigating with recycled wastewater

RAPID POPULATION GROWTH in arid and semiarid regions of the U.S. continues to place increasing demand on finite and limited water supplies. Many cities and districts are struggling to balance water use among municipal, industrial, agricultural, and recreational users. Along with an increase in fresh water demand, comes an increase in the volume of wastewater generated.

Treated wastewater is the only water resource increasing as other sources dwindle. Reuse of treated wastewater for turf and landscape irrigation is often viewed as one way to maximize the existing urban water resources. In addition to the growing concerns of the future water supply, the more stringent wastewater discharge standards make use of recycled wastewater increasingly attractive.

To date, the contribution of water reuse to water conservation varies by location. Water reuse satisfied 25% of the water demand in Israel, for example, where 66% of total treated sewage is reused. Water reuse is expected to reach 10% to 13% of water demand in the next few years in Australia and California. Throughout the US, large volumes of municipal recycled water is being used to irrigate athletic fields, golf courses, community parks, cemeteries, schoolyards, roadsides, street medians, industrial and residential landscapes, and other urban landscape sites.

Based on data from the Department of Public Health and Environment, Water Quality Control Commission there are about 10 permitted recycled wastewater facilities in Colorado that can treat and deliver about 56 million gallons of effluent water every day for reuse purposes. We

conducted a survey of landscape managers who use recycled wastewater. Survey results indicated that cost was not the driving force for landscapes to use RWW. Rather the availability and reliability of the water were rated as the two main reasons for using RWW for irrigation.

Since 2003, research was conducted at Colorado State University with two objectives: To assess variability of chemical properties of recycled wastewater in the Front Range of Colorado, and to evaluate landscape soils and plants that are currently under recycled wastewater irrigation.

Understanding the responses of urban landscape plants and soils to recycled wastewater irrigation and identifying

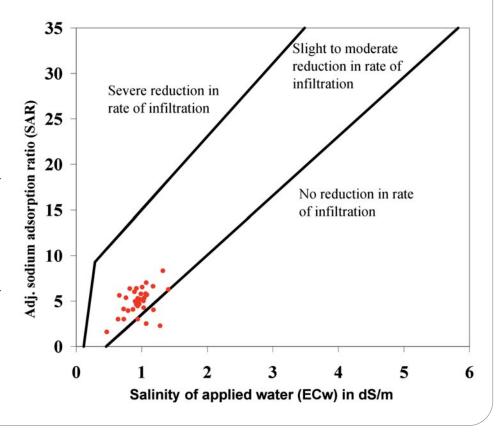
proper management practices are critical to the long-term success of this practice.

Water quality

Recycled wastewater samples were collected from irrigation ponds and sprinkler outlets on landscape sites. Water testing results of about 50 RWW samples collected from six landscape sites were reviewed for suitability in landscape irrigation based on irrigation water quality guidelines.

The average electrical conductivity (EC) of more than 50 recycled wastewater samples from six reuse sites was 0.84 dS/m and the range was 0.47 to 1.32 dS/m. An electrical conductivity higher than 0.75 dS/m indicates the water may impose negative effects on salt-sensitive plants. Periodic leaching of salts is required to mitigate the potential salinity problem.

Adjusted sodium absorption ratio (SAR) of recycled wastewater from reuse sites ranged from 1.6 to 8.3. Based on the interactive effect of salinity and sodicity on soil infiltration and percolation, most of the water samples collected showed



slight to moderate effects on soil infiltration and permeability (see figure). Longterm and continued use of water with a high adjusted-SAR may lead to a reduction of soil infiltration and permeability on fine texture soil. Additional management (such as Ca product topdressing or amendments and frequent aerification) is needed to mitigate these effects.

One of the other concerns of recycled wastewater irrigation is the presence of high levels of particular ions (sodium, chloride, and boron) that are toxic to some trees and shrubs. With sprinkler irrigation, sodium and chloride frequently accumulate by direct adsorption through the leaves that are moistened. Sodium and chloride toxicity could occur on sensitive plants when their concentrations in irrigation water exceed 70 and 100 mg/L, respectively. The average sodium concentration of more than 50 water samples collected was 99 mg/L, ranging from 30 to 170 mg/L. The average chloride concentration was 95 mg/L. Chloride leaches easily through the soil profile and chloride toxicity to turf and landscape plants should be minimal if soil is well drained and salts are regularly leached. However, if the sites have poor drainage, soil percolation is impaired or limited, or have a shallow water table present, chloride applied over time can accumulate to a toxic level.

In all cases, the water samples met or exceeded the regulations in regard of E. coli count as defined in the state regulations, therefore the water is suitable for landscape irrigation.

Soil

To assess recycled wastewater irrigation on the long-term changes of soil, we compiled soil test data from landscape sites that have relatively fine texture soil (clay loam and loam soil). Among sites, six had been irrigated exclusively with domestic RWW 8 - 33 years. The other six with similar turf species, age ranges, and soil textures had used surface water (average EC = 0.23 dS m-1) for irrigation. Our results indicated that soils (sampled to 11.4 cm) from sites

where RWW was used for 8-33 years exhibited higher concentrations of extractable Na, B, and P. Compared to sites irrigated with surface water, sites irrigated with RWW exhibited higher EC and higher sodium adsorption ratio (SAR) of saturated paste extract.

However, the accumulation of salts in the soil profile is not a function of water salinity alone. The rate at which salts accumulate to potentially toxic levels in a soil also depends on the amount of water applied annually, annual precipitation (rain plus snow), and a particular soil's physical/chemical characteristics. Good permeability and drainage allow a turfgrass manager to leach excessive salt from the rootzone by periodic heavy irrigations. For example, water with an ECiw of 1.0 dSm-1 may be successfully used on grass grown on sandy soil with good drainage, but may result in salt buildup in the rootzone if used to irrigate the same grass grown on a clay soil or soil with limited drainage.

Sand-based sports field amplify the soil structure that allows such relatively straight forward salinity management. Only careful management can prevent deleterious salt accumulation in a soil irrigated with high ECiw water. Soil physical characteristics and drainage, both important factors in determining rootzone salinity, must also be considered in determining the suitability of a given recycled irrigation water.

Plants

Generally, turfgrasses, including Kentucky bluegrass, had a good appearance, showing salinity damage only on a few sites with poor drainage, heavy soil structure, or shallow water table. However, chronic decline of salt sensitive trees were observed under long-term RWW irrigation (> 8 years). Ponderosa pines grown on sites irrigated with RWW for 8-33 years exhibited higher needle burn symptoms than those grown on sites irrigated with surface water. Tissue analysis indicated that ponderosa pine needles collected from sites receiving RWW greater sodium, chloride, and boron concentrations than samples collected from the control sites. Stepwise regression analysis revealed that the level of needle burn was largely influenced by leaf tissue sodium concentration. Tissue Ca level and K/Na ratio were negatively associated with needle burn symptoms, suggesting that calcium amendment and K addition may help mitigate the needle burn syndrome in ponderosa pine caused by high Na+ in the tissue.

The project indicated that both problems and opportunities exist in using RWW for landscape irrigation. The use of recycled wastewater for irrigation in urban landscapes is a powerful means of water conservation and nutrient recycling, thereby reducing the demands of freshwater and mitigating pollution of surface and ground water. However, potential problems associated with recycled wastewater irrigation exist. Salts (especially the relatively high Na+ and high EC) in the treated wastewater were associated with needle burn symptoms observed in ponderosa pines subjected to RWW irrigation. The significantly higher soil SAR in RWWirrigated sites compared to surface water irrigated sites provided reason for concern about possible long-term reductions in soil hydraulic conductivity and infiltration rate in soil with high clay content, although these levels were not high enough to result in short-term soil deterioration.

This information is useful to landscape planners and managers to determine what should be monitored and what proactive steps should be taken to minimize any negative effects during planning and managing landscapes receiving recycled wastewater. Understanding the responses of urban landscape plants and soils to recycled wastewater irrigation and identifying proper management practices are critical to the long-term success of the water reuse practice.

Dr. Yaling Qian is a professor in the Department of Horticulture and Landscape Architecture at Colorado State University, Ft. Collins.

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The Tensioned Batting Cage by Beacon Athletics is designed for indoor or outdoor use. This design accommodates space restrictions, bleachers or stage areas. If outside, it also preserves the life of the systems since it can be taken down during inclement weather. The Beacon Tensioned Batting Cage goes up or can be taking down in 10 minutes! With its unique three-pulley system, the cage can be raised and tensioned as needed. No permanent frame or cable structure remains when the cage is removed. All systems are designed to meet your needs. Beacon Athletics

www.beaconathletics.com



Removing synthetic turf paint

In 2009, the field crew at the Louisiana Superdome will have to convert the markings on their synthetic turf field on eighteen different occasions in order to host the New Orleans Saints, Tulane Wave, Allstate Sugar Bowl, R&L Carriers New Orleans Bowl, State Farm Bayou Classic, and the Louisiana high school state football championships. Six of these conversions have to be completed in less than 12 hours. With the use of Pioneer Athletics' GameLine removable synthetic turf paint and Blitz removal system, this tight timeline is not a challenge for the crew. To date in 2009, the Superdome has already twice hosted a Saturday Tulane University home football game, followed by a Sunday New Orleans Saints game. Pioneer's paint and removal system allows the field crew to completely remove all paint without any visible markings in only 2 hours. This includes removal of paint in both end zones, the logo on the 50-yard line, the 25-yard line league or conference logos, as well as the appropriate college or NFL hash marks.

"Before we started to use GameLine paint and removal system, it took a large crew multiple hours of scrubbing on their hands and knees to remove all of the paint", said Randy Philipson, Director of Engineering & Operations at the Louisiana Superdome. "Now, our streamlined crew is able to remove all of the paint after a game in only two hours, with absolutely no ghosting. The simple three-step removal process saves us time and a lot of energy."

Removal begins when Blitz GameLine solution is applied with a backpack sprayer. Almost immediately, the paint's bond with the synthetic grass blades will begin to separate. A second field worker then agitates the treated paint with a Blitz Remover machine, but something as simple as a deck brush can get the job done. Finally, any last remnants of paint are removed by spraying the turf with water from a basic garden hose. This process is so effortless that a smaller crew, such as a high school field crew of two, can finish the entire job in 4-6 hours.

www.pioneerathletics.com



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www.ariens.com



Hydraway drainage system

"Game cancelled due to lack of drainage?" Not the New Orleans Zephyrs because they used Hydraway 2000 drainage system. Here's what they told us when they received more than 3 ½ inches of rain just before game time: "Here are the pictures that were taken at 2:00 pm on August 21, 2009. It shows the entire outfield covered in water. At 11:30 am, the field took a shower of 0.21 in. The big thunderstorm came at 12:45 pm and lasted until 2:10 pm. In this 1.5 hours we took 3.03 in. of rain. It then drizzled/rained until 5:45 pm another 0.28 in. of rain. The Zephyrs had no issues with standing water on the field by 7:00 pm game time."

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- 16 hp twin-cylinder engine, efficient gear drive and automatic torque converter make the Sports Star simple to operate.

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ArmorDeck is the most advanced engineered floor covering system for natural and synthetic turf protection and for creating portable roadways. The large-panel system that is designed to handle heavy loads, provide stability and maximum temporary turf protection. Its panels are quick to install and designed to support weights up to 45,000 lbs sq/ft., making it suitable for nearly any size event, including large-scale stadium events. Choose ArmorDeck1 for natural grass protection, featuring top aeration holes to allow air and moisture to keep grass healthy, ArmorDeck2 for synthetic turf protection with a smooth top or ArmorDeck3 for extra heavy-duty protection.

www.eventdeck.com

New DC pitching platform

Southern Athletic Fields is excited to introduce the DC Pitching Platform. Designed by professional coaches this ultra-light batting practice platform is a unique design that allows for equal pressure on the turf. The design eliminates the pressure created by heavier platforms that are made from metal or wood. DC Pitching Platform is 4' x 8' with handles on both sides. It weighs only 60 lbs so wheels are not needed. DC Pitching Platform can be easily moved by one person and ideal for use by high schools, collegiate or professional teams.

www.mulemix.com

"The Pro Cage"

The "Pro Cage" is the highest quality, most durable, time tested portable batting cage available on the market. From the Major Leagues through Spring Training, down to colleges and high schools throughout the country- the teams and programs you know and trust count on C & H Baseball to outfit their fields with this non-folding batting cage. Made in the USA using 2" aluminum pipe with welded joints and fittings, heavy duty domestic knotted nylon netting, unique brake system and 18" tires- An investment in the "Pro Cage" means never having to worry about another portable batting cage for decades.

www.chbaseball.com

Buffalo Turbine's Cyclone KB3

For over 64 years, Buffalo Turbine has utilized "turbine powered air" in its Sprayers, Dusters and Debris Blowers. Buffalo Turbines are the debris blowers of choice with Sports Turf Managers, Golf Course Superintendents, Landscapers, Parks and Municipalities worldwide. The legendary Cyclone KB3 is our self contained Debris Blower equipped with a bolt-on trailer package, 23hp Kohler engine, electronic governor and a water-resistant, wireless remote control. Buffalo Turbine also manufactures a variety of Front Mount and Hydraulic blower units, the Terratopper Top Dresser and the SANDEVIL attachment. All of our debris blowers are now equipped with a One-Piece Space Age Polymer Nozzle.

www.buffaloturbine.com

Thatch Master verticutter-dethatcher

TurfTime Equipment introduces a complete line of verticutter/dethatchers. The TM-600 at 60-in. and TM-720 at 72 are designed for sports fields with 7-point carbide tipped blades enabling more hours of use and faster operating speed. Infinitely adjustable rollers allow precise depth control, using shallow settings for overseeding or deeper settings to remove thick layers of thatch.

www.TurfTimeEq.com

TurfTime model 2435 Topdresser

TurfTime Equipment introduces the Model 2435 Top Dresser that is the ideal for sports fields. The hopper holds over 4 yards, heaped, and takes less than 90 seconds to empty over a 40 ft. pass. The performance allows 100 tons of wet or dry sand to be spread in 4 hours. The 2435 will spread compost, infield mix, crumb rubber, crushed slate and other materials. It can be operated with manual controls or from the tractor seat using optional electronic controls.

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Green Media is focusing on the 'business of green.'

Coming soon look for Green on Green, the first of a series of supplements covering real-life initiatives that Green Industry companies are undertaking to improve our environment.

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