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# Rolling with the cool kids

**I**f you really think about it, you could say that athletic fields are the cool kids of turf management. People will drive for hours, pay hundreds of dollars, and brave the worst weather conditions imaginable just to get a seat as close to them as possible. National and international television broadcasts are fixated on them for hours at a time. Heck, athletic fields have even been showing up fashionably late to the turfgrass management party for decades.

» Research has proven that frequent and consistent rolling **can provide a faster (smoother) putting surface**, along with many other benefits that may not seem quite as obvious

Taking a quick look at the methods used to manage both athletic fields and golf course greens, it is rather easy to pick up on the similarities. When you glance a little closer, you'll find that virtually every one of these methods was originally honed by golf course superintendents across the world and then, typically years later, adopted by sports field managers everywhere. Tactics such as stripe mowing, applying sand topdressing, and core cultivation were at one time unique to putting green management and have since become commonplace on virtually every competition athletic field in the world; and because of it, the quality of those fields has improved dramatically!

“So who’s showing up next to the party?”

One common management technique used daily (and sometimes more) by managers of golf course greens is routine lightweight rolling. Although, it has yet to gain similar popu-

larity in athletic field maintenance, it is a cultural practice used in managing turf that dates back as far as the 18th century on golf courses. Since this time, and particularly in the last quarter century, routine lightweight rolling has become an essential tool for golf courses. Research has proven that frequent and consistent rolling can provide a faster (smoother) putting surface, along with many other benefits that may not seem quite as obvious (and we'll discuss those a little later).

Although used on occasion during special circumstances, such as alleviating frost heaving or as a part of seeding/sodding projects, a roller is yet to become an everyday piece of equipment on a sports field. A rare field manager might swear by the benefits he or she gets from the consistent use of a lightweight roller, but it is definitely the exception rather than the rule.

Since we're on the topic of cool kids, I thought: Who's funnier, more popular, and just plain cooler than David Letterman? So why not use a Top 10 list to examine whether lightweight rolling might be the next cultural practice that began in golf to become a staple on athletic fields?

Let's take a look at the 2014 Canadian International Turfgrass Conference & Trade Show presentation given by Dr. Thom Nikolai of Michigan State University on his Top 10 Reasons to Roll Course Greens:

### 10. Alleviate heaving and minimize scalping when climactic conditions dictate.

Nikolai talks about the freeze/thaw cycles contributing to uneven surfaces on golf course greens, and it certainly applies to athletic fields as well. This is undoubtedly the current most common reason for rolling athletic fields. Rolling not only helps to smooth out a bumpy playing surface but it can also protect against scalping during the first spring mowing.

### 9. Seed bed preparation.

This is another reason that rolling logically translates from golf to athletic fields, where it is certainly time well spent when prepping a site for establishment by seed. In addition, rolling immediately after seeding is a great way to ensure that you achieve the all-important seed-to-soil contact required for germination and nutrient uptake. Similar benefits from rolling can also be seen when establishing an athletic field by sod. Lightweight rolling after sod installation can help create consistent contact between the soil and roots of the new turfgrass.

### 8. Broadleaf weed, moss, and algae reduction.

Although moss and algae tend not to be as big of a problem on an athletic field as on a low mown putting green, broadleaf weeds certainly are a common menace. Dr. Nikolai's Top 10 list hypothesizes that an increased turf density could help to out-compete unwanted pests such as dandelions and white clover. This could be especially beneficial for managers of school athletic fields who are required to

use little to no chemical herbicides and where they are prohibited by legislation.

### 7. Decreased localized dry spot.

Research has shown that rolled putting greens experienced less localized dry spot, while the soil samples showed that the rolled plots retained more moisture and had greater root mass than those that were not. On an athletic field, the impact of increased root mass from rolling would be even more meaningful than on a golf course due to its positive effect on turf stability and, ultimately, athlete safety. Preliminary data from an athletic field rolling study at Michigan State University (**Fig. 1**) shows that rolling athletic fields five times per week may potentially increase root mass of a Kentucky bluegrass field maintained at 2.5 cm. More evidence needs to be seen to draw any conclusions on this and it is being evaluated further.

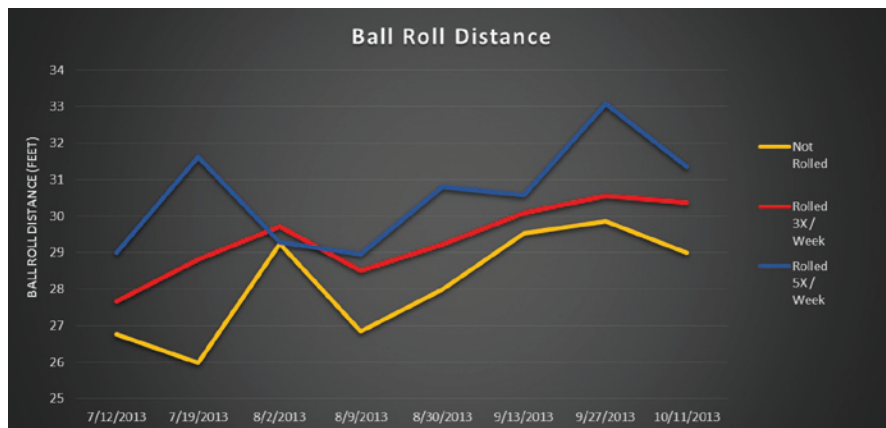


Figure 1. Preliminary data from an athletic field rolling study at Michigan State.

### 6. Height of cut raised and green speed retained.

Ongoing athletic field research at Michigan State University also shows promising results in regard to the possibility of routine rolling yielding a smoother, faster surface, just as it has on golf course greens. A soccer field gauge, which is essentially soccer's version of a golf Stimpmeter which measures green speed, was used to determine surface smoothness. Plots rolled five times per week were found to be faster than plots that were not rolled (**Fig. 2** on page 14). The thought of being able to create a surface that plays quicker, and more importantly is smoother and more consistent, would have the attention of athletes and coaches in such sports as soccer, baseball, lacrosse, and more.

### 5. Decreased cutworm activity—maybe!

Cutworms do their damage by feeding on roots and shoots of a turfgrass stand. This damage is much more evident and devastating at lower cutting heights, such as on putting greens, but can even become a problem on grass that is cut at home lawn height (7-10 cm). Anecdotal evidence indicates rolling may decrease cutworm activity on golf course greens and thus lead to a healthier, stronger rooted turf.

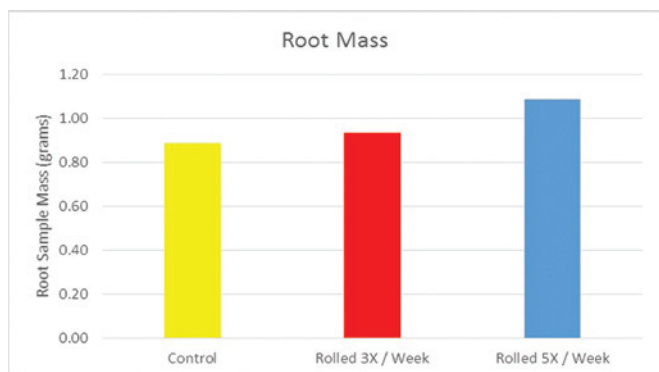


Figure 2. Plots rolled five times per week were found to be faster than plots that were not rolled.

**4. Improved topdressing incorporation.**

As indicated earlier, topdressing is one of the many cultural practices that athletic field management has adopted from the golf course industry. Sand topdressing needs to be incorporated into the root zone allowing it to serve its intended purpose beneath the canopy. No research has been performed specifically with athletic field rolling, but vibratory rolling after topdressing has been proven to be better for working the sand into the soil profile. Performing your athletic field rolling following a topdressing application might very well add one more benefit.

**3. Decreased dollar spot.**

One of the most impressive findings amongst the vast amount of research on rolling greens is the continued observation of decreased incidence of dollar spot. With the reason for this phenomenon being rather involved and somewhat intangible, the translation of this benefit to an athletic field setting currently stands at “to be determined” due to the current lack of dollar spot for athletic field rolling.

**2. It’s the economy (rolling/mowing frequency programs).**

Cost savings analyses of greens rolling have focused on a rolling/mowing trade off in which labor, fuel, and maintenance costs are all considered. Alternating rolling and mowing, as opposed to mowing every day, is said to save time and money (both fuel and maintenance costs), while also improving wear tolerance and yielding similar green speeds. If comparable conditions can be replicated with this method on athletic fields, these cost savings could certainly be seen. This tactic could be particularly valuable on fields that do not receive play on a daily basis, and thus may not require a fresh mowing as often.

**1. Increased customer satisfaction.**

The customer of a golf course, the golfer, is satisfied by many of the same things as the customer of an athletic field, the athlete. Both desire a smooth and consistent surface that will allow them to direct their concern toward their own performance rather than that of the turf. Routine lightweight rolling has been proven, through research and application, to help give golf course customers what they want. There is definitely

some evidence that rolling can deliver the same to athletes.

Now with all these potential benefits, what has prevented the majority of groundskeepers and field managers from joining this rolling revolution seen in golf over the last 20+ years? Just as was once the case in golf turf management, the concern that detrimental effects caused by consistent rolling will negate, or even eclipse, its benefits has caused many sports field managers to balk at the idea.

Certainly the number one concern with consistent rolling of athletic fields is the potential for compaction, and rightfully so. A compacted field can create an unhealthy turf stand, as well as create poor drainage and fields that are unplayable during any type of rainfall. Surface hardness (a measure of compaction) is being observed closely in all athletic field rolling studies at Michigan State. To date, there has been no statistical evidence of any significant compaction (Fig. 3), however if a field manager chooses to implement a routine rolling program, he/she should do so with caution. Compaction is greatest when forces are applied to the wet ground, especially on fields with high silt/clay content and rolling should never be done on saturated soil. Additionally, on any

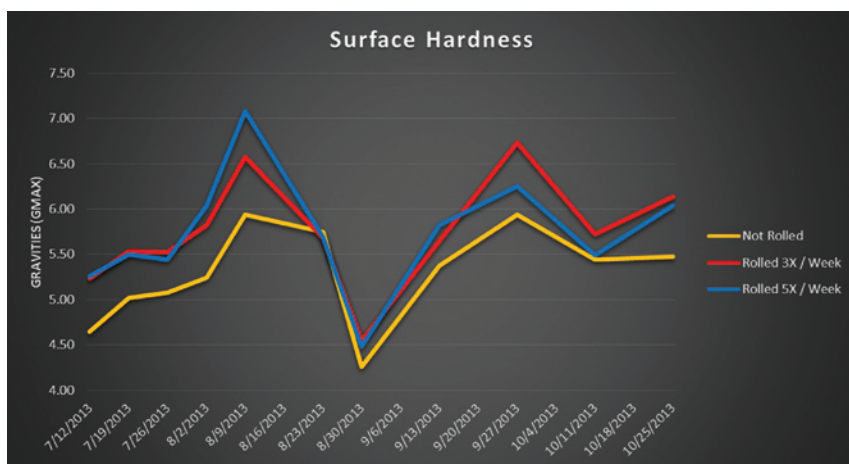


Figure 3. There has been no statistical evidence of any significant compaction.

field where frequent rolling occurs, regular core cultivation/aeration should also be done to counteract any potential compaction that may happen over time.

Furthermore, rolling should be done with extreme caution during potential periods of stress on the turf. Rolling during drought, heat, cold, or disease stress will only intensify or spread the negative effects incurred during these harsh conditions.

Overall, the evidence to support rolling golf course greens is strong and rarely debated. However, there currently just seems to not be enough research and experience for most athletic field managers to follow their superintendent counterparts in this practice. Early research is beginning to show that routine rolling of athletic fields is worth looking into, with more research and in every day practice. Only then will we get the chance to see this cultural practice roll through the door, fashionably late. ■

*Nick Binder is a Crop and Soil Science graduate student working under Dr. Thomas Nikolai at Michigan State University in East Lansing.*

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& The American Academy of Orthopaedic Surgeons ([www.aaos.org](http://www.aaos.org))

# RENOVATING Parkview Field in Fort Wayne

**R**enovation of a baseball field at the amateur, collegiate, or professional level can be a daunting and expensive task. However, when the condition or appearance of a field warrants a “makeover,” dollars should be secondary to player safety, and at the professional level, the overall aesthetics of the playing surface.

In the fall of 2012, Parkview Field in downtown Fort Wayne, IN home of the San Diego Padres Class A affiliate Fort Wayne TinCaps, was the site for a complete field renovation. Constructed in the fall of 2008 for a spring 2009

opening, the field was dominated by *poa annua*. Despite winning Midwest League Field of the Year awards in 2010, 2011, and 2012, the front office, field manager, and city officials (the ballpark is owned by the City of Fort Wayne), agreed that field replacement was necessary.

Planning for the project actually began a year earlier as The Motz Group, the original field contractor, was contacted in regards to a replacement schedule. Pre-renovation planning is paramount in paving the way for a smooth, efficient, and cost-effective agenda. First and foremost, the dollars need to be allocated to do the work. Most complete field renova-





tions of sand-based fields cost in the \$200,000-\$250,000 range. A presentation made to the city's Redevelopment Commission in the fall of 2011 confirmed the dollars for the labor and materials (sod, rootzone, warning track material), setting in motion the process of selecting the sod farm. Graff's Turf Farm in Fort Morgan, CO was selected based on the quality of their short-cut, 100% bluegrass. A July 2012 visit to the farm to inspect the turf plot confirmed everything was in place for the harvesting and shipping that fall.

Furthermore, consultation with our front office on limiting the number of games and events in 2013 played a key part in assuring a successful grow-in. No other baseball games were scheduled besides the TinCaps's dates, and other on-field activity was restricted until the fall, giving the field almost an entire year to develop.

Work began on the field the second week of September after the team made a run to the Midwest League finals, and 2 weeks before a major on-field running event the last Saturday of the month that brings more than 10,000 runners to Parkview Field. The entire oblong infield horn (created during initial field installation) was reconfigured, constructing a more traditional 95-foot arc from the mound. This meant removing large amounts of clay and sod from areas to establish the new symmetry. This work was all done by the grounds crew with a 3-ton mini-excavator and a lot of hand digging and edging.

On October 1 The Motz Group moved in with their Koro Field Topmaker and began stripping and grinding the existing sod layer. The Koro conveyor shoots the pulverized material into trailers pulled by tractors to get the debris off-site. More pre-planning put in place bagged meters and traffic control devices to block off a lane of parking and traffic on the road adjacent to the field ramp. From there, 700 cubic yards of material was hauled away thanks to a large front loader and 30-35 dump truck loads.

As the sod was stripped from infield, baseline, and warning track edges, re-working of all edges was done with hand spades by the grounds crew. This is the only chance you ever get to create a new edge, and meticulous attention and time was spent to make the rootzone, clay, warning track transition zones as perfect as possible.

All 88,000 square feet of sod was stripped in 2 days. As the rootzone was exposed, 70 tons of new 92% sand, 8% peat was brought in and laser graded. The infield turf area was dropped from a .1% grade to level, and all the outfield and sidelines were laser graded to spec. At this point we were ready to sod, but . . .

» A total of **22 trucks** bearing anywhere from 20-22 rolls made the hike to Fort Wayne.

With an extremely high content of *poa annua* infestation in the field, the decision was made to fumigate the entire turf area before the new sod was brought in. Using Basamid (dazomet) dropped from a 36-inch drop spreader, a 10-day window was allowed to kill off any remaining *poa* seed or plant material. Fumigation is based on soil temperatures and moisture. Moisture causes the release of vapors which penetrate the soil particles and upon contact, kill plant matter, seeds, insects, and anything living. The higher the soil temperature, the faster it works. Because dazomet is a restricted product, application was made using a respirator and full Personal Protection Equipment (PPE) attire. Additionally, barricades and posted signs around the ballpark restricted access to the field area as gases were emitted.

After a 10-day fumigation window, work resumed on October 15. Before that, an organic granular starter fertilizer (5-6-6) was applied on the exposed rootzone at a rate of 10lbs/M. The maxi-rolls of Graff's short cut bluegrass began to arrive on flat bed trucks from Colorado, which was a 1,070 mile one-way trip! A total of 22 trucks bearing anywhere from 20-22 rolls made the hike to Fort Wayne. Assistant groundskeeper Andrew Burnette off-loaded the rolls with a skid steer and The Motz Group crew went to work, rolling out sod and pulling in seams. The TinCaps grounds crew concentrated on perfecting edges while Motz laid "the carpet." At the end of Day One, the infield and skirts were completed. After waiting on the intermittent arrival of sod trucks, it took 2 more days to finish the outfield. When all 88,000 square feet of new sod was in place, another round of granular starter fertilizer (5-6-6) went down at the same rate. A couple of days later, we began our foliar fertility with a good dose of micronutrients, potassium, and magnesium.

October 22, 22 tons of DuraEdge Pro infield mix arrived for infield lasing grading. The skin and base paths were pulverized with a Blecavator, the infield mix was worked in, laser graded, and rolled. An additional load of warning track material (crushed lava rock) was distributed on the edges to bring all the new turf edges flush.

Our fall granular organic program commenced two weeks later with a 21-3-7, followed by two more foliar applications in November,



STMA conference in Daytona Beach. Colder weather in February brought the plant dormant, but when the weather broke in March, we were thrilled with the root establishment, and set out to get the plant roaring out of the gate. We hit the turf with a 5-28-0 to get the phosphorous going for root growth, and introduced a bio-nutritional program (mycorrhizae & humates) to get beneficial microbes into the soil profile, especially after the total fumigation in the fall.

Typically divergent Midwestern spring weather brought the bluegrass into full bloom by early May, and the players and public were awestruck by the continuity and eye pleasing beauty of a new palette of great looking turf.

There are no shortcuts when it comes to the work and cost involved in baseball field renovation. But with the proper pre-planning, contractor and sod selection, and due diligence in on-going cultural practices, a well-done renovation provides the kind of safe playing

and finally another 21-3-7 granular in early December. A shot of PCNB before the first major snow fall had us prepared for winter and the establishment of some good root mass.

Excellent color remained in the turf until time for the January surface and intrinsic beauty that should be the goal of every sports turf manager. ■

Keith Winter is head groundskeeper for the Fort Wayne TinCaps.

Keith Winter is head groundskeeper for the Fort Wayne TinCaps.

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# John Mascaro's Photo Quiz

John Mascaro is President of Turf-Tec International

*Can you identify this sports turf problem?*

**Problem:** Brown lines and bare spots

**Turfgrass area:** Football practice field

**Location:** Hampden-Sydney, Virginia

**Grass Variety:** Savannah bermudagrass

**Answer to John Mascaro's Photo Quiz on Page 23**



Background illustration courtesy of istockphoto.com

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# Crew management: handling your most VALUABLE ASSET

**I** quickly discovered after taking a job with the City of Phoenix Parks and Recreation department 13 years ago that managing the turf was going to be the “easy” part of my job. I had gone from a staff of two (including myself) to a staff of 14. Doesn't seem that complicated, right?

Managing the crew soon became the biggest issue I had. The 10 main things that helped me to become a better manager are:

**Learn what each individual's strengths and weaknesses are.** Work them to their strengths, while teaching them to improve on their weaknesses. Take the time to work one-on-one with staff to learn how they work. Do they hate line trimming? Do they love infield work? On the job training is great, but also take advantage of classes and seminars through your local STMA chapters and other organizations. There is something about getting off-site that helps to improve learning. Seeing how other facilities handle situations is another great learning opportunity.

**Be organized!** Know what needs to be done and delegate tasks evenly to the crew. Part of this is knowing how long each task will take as well as which tools and equipment will be involved so that everyone has access to what they need. Asking someone to do a job only goes so far if they don't have the proper tools at hand to accomplish the job. Set your staff up for success, not failure.

**Communicate!** I can't stress this enough. Staff will not know what you want them to do, or how you want them to accomplish it, if you do not tell them! Seems basic, but it is often overlooked. Take the time to go over details, and ask staff to repeat them back to you to make sure that they heard what you were trying to say. For instance, you might ask an employee to trim the trees by the football field up above 8 feet, and what they hear is to trim the trees by the baseball field into shrubs. This will show you that more clarification and instruction is needed.

There are many ways to manage. Take the time to find your style, all the while remembering that people have their own way of learning, so be flexible.

**Do not play favorites.** You will naturally have crew members with whom you feel more comfortable. Do not allow this to cause you to treat anyone with favoritism. Make sure to distribute tasks evenly. Unless your situation does not allow it, teach all the staff to do all the jobs. Just because you mainly do infields does not mean that you do not need to know how to change a sprinkler head.

**You aren't there to be anyone's**