

Update on chemical products for sports turf

Park district improves year round playability

Editor's note: This article was provided by The Tierney Agency of Philadelphia.

>> JIM KEPPLER, senior maintenance supervisor-grounds at the Rancho Simi Recreation and Park District.



>> The combination of various grasses and weeds created a clumpy, uneven playing surface.



>> Left: BEFORE APPLICATIONS of herbicides, the playability of the fields was very poor.

>> Below: TO AVOID PIGMENT on uniforms, no dye was added to the tank mix. Chris Olsen, field development representative for Bayer Environmental Science, points out the zebra-stripe effect where applications were missed during spraying.



ANYONE WHO'S PLAYED SOCCER appreciates turf that allows the ball a true roll. A good pitch provides consistent, predictable speed with no unexpected changes in direction of a rolling ball.

When Jim Keppler in Simi Valley, CA inherited two soccer fields from the local American Youth Soccer Organization in 2007, the playability of the turf was poor. "There was a lot of *Poa annua*, fescues, ryegrass and clover," says Keppler, the senior maintenance supervisor-grounds at the Rancho Simi Recreation and Park District. The combination of various grasses and weeds created a clumpy, uneven playing surface. Soccer balls rolled every which way but true.

The soccer fields overseen by Keppler see quite a bit of action. Located 40 miles northwest of Los Angeles, the Simi Valley

area enjoys a warm, pleasant climate almost all year. The soccer association books games and practices year round. On average, each field sees anywhere from 48 soccer games per month.

In Keppler's mind, these newly inherited, heavily-used fields weren't fit for play. And after more than 30 years with the organization, he had earned the trust of district officials to make maintenance decisions as he saw fit.

"My experiment was to take out everything but the bermudagrass. All I wanted was nice, short-cut turf."

Soccer is the only game at Rancho Simi Recreation and Park District. And it isn't the only responsibility for Keppler. With help from his 11-person staff, he manages 17 parks, five soccer fields, 14 ballfields and 54 miles of hiking trails.

The district is also home to two golf courses, an Olympic size swimming pool complex, tennis courts, basketball courts, and a community center.

Overall, the park district has a total of 50 parks and more than 5,600 acres of open space used for hiking, biking, horseback riding and wildlife preservation. "Our goal is to keep the public happy and our parks clean, green and safe," he says. "When you have a lot of use in the parks, it's a challenge." The park system makes Simi Valley a desirable place to live and more than 130,000 residents call it home. It's been home to Keppler his whole life.

Keppler's experiment started with a consultation from Joe Alexander, his distributor sales representative from Crop Production Services (formerly Western Farm Service). "Joe knew what products



➤ **KEPPLER**, seen here with application technician Paul Shugrue, relies on a staff of 11 to manage 17 parks, five soccer fields, 14 ball fields and 54 miles of hiking trails.



➤ **Above: THREE MONTHS** after the initial treatments, the fields are rolling smooth and fast.

Our gray leaf spot program begins in mid-July through September. **We rotate a number of products** through the season to prevent against fungicide resistance.

would help me get a pure stand of bermudagrass,” recalled Keppler. The two agreed on a weed control program built around Ronstar and Revolver herbicides (Bayer Environmental Science).

An application of Ronstar plus fertilizer was applied the first week in March 2008. By putting down the preemergent herbicide with fertilizer, Keppler could get in front of the germination of unwanted annual grasses and broadleaf weeds while also helping the turf to green up. He used a Ronstar formulation from The Andersons with a 15-5-10 nutrient mix.

A week later he followed with a tank mix application of post-emergent Revolver

and methylated seed oil surfactant. The sulfonylurea product selectively removes cool-season grasses from warm-season grasses. Keppler applied a broadcast, foliar spray of Revolver at the rate of 16 oz. per acre.

Zebra stripes

The crew used a 16-foot wide spray rig to make the application of Revolver. Typically, Keppler would use a dye indicator in the tank mix to track the spray pattern. But due to the year round use of the fields, he didn’t use one because teams were still playing. “We didn’t want white uniforms turning green from the dye,” he says.

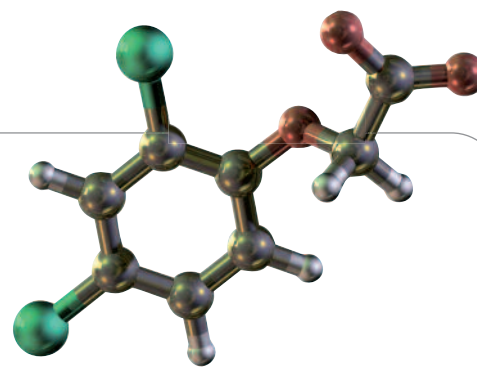
Without the dye, the crew

couldn’t be exactly sure where they had sprayed. The result was an unexpected side-by-side comparison about 2 months later showing how well the product worked. “It looked like zebra stripes. There was a stand of perennial in 2-foot wide lines across sections of the fields where we missed with the rig.” Keppler came back in with Revolver to spot spray on the areas missed and, within a week, the stripes were gone.

All that was left was bermudagrass. According to Keppler, “not only does the turf look great, the density is much tighter than it had been.”

It can take about 2 years to turn a sports field from clumpy and uneven to nearly 100 percent bermudagrass.

“Last year, when we started the applications of Revolver and Ronstar, we had about 80 percent *Poa*, clover and other perennial grasses. The base of bermuda was there, but choked out,” says Keppler. “When we went to make the first application this year, we had about 10 percent *Poa* and perennials. That is a 70 percent reduction.” ■



New chemical control options for sports turf managers

EACH YEAR new products enter the turf-grass industry designed to help sports turf managers provide athletes with high quality playing surfaces. Before their commercial debut, these products are rigorously tested at universities across the United States to determine their efficacy against various pests and if they pose any negative threats to the environment.

In response to the budget reductions placed on today's sports turf manager, some of the new products slated to debut in 2010 have been designed to reduce the number of chemical applications needed to provide high quality turfgrass playing surfaces. Additionally, the forthcoming loss of MSMA from the sports turf market has also placed

an emphasis on products to control grassy weed species like crabgrass.

Onetime (active ingredients – 16% quinclorac; 8% mecoprop; 2% dicamba) is a new postemergence herbicide from BASF. This product provides postemergence control of crabgrass and various broadleaf weeds in a single application. Onetime may be a valuable tool to sports turf managers facing restrictions on the use of 2,4-D for broadleaf weed control.

A product offering similar benefits will be sold under the trade name Solitare from FMC Corp. (active ingredients- 18% sulfentrazone and 56% quinclorac) offers sports turf managers postemergence control of crabgrass and various broadleaf weeds as

well. Research at the University of Tennessee indicates that applications of Solitare provide effective control of ground ivy. However, slight injury to certain cultivars of warm- and cool-season grasses has been reported after application in some climates.

Tower (active ingredient – 64% dimethenamid-P) is a preemergence herbicide that will be labeled for sports turf use sometime in 2010. This product can provide preemergence control of certain broadleaf weed species, particularly prostrate spurge) and doveweed. Although this product has been labeled for use on golf courses for several years, Tenacity from Syngenta (active ingredient – 40% mesotrione) received federal labeling for use on sports turf in

Model of Herbicide 2,4-D courtesy of istockphoto.com

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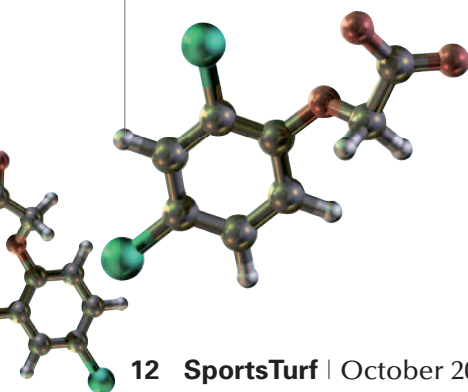
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September 2009. This product can be used on an array of cool-season turfgrasses to provide postemergence control of crabgrass and several other broadleaf and grassy weeds, particularly, goosegrass, creeping bentgrass, and nimble will. Tenacity will offer sports turf managers a tool to control weeds during turfgrass establishment. Research conducted at the University of Tennessee has demonstrated that Tenacity can be applied at label rates to tall fescue and Kentucky bluegrasses at seeding without compromising seedling establishment. Sports turf managers seeding high traffic areas lacking turfgrass cover may benefit from applications of Tenacity.

Onetime, Solitare, Tower, and Tenacity are only a few of the new products that will be available for sports turf use in 2010. An array of fungicides, insecticides, and fertilizers will make their way into the market after being thoroughly tested at universities across the country. The 21st STMA Conference and Trade Show (January 12-16th, 2010) in Orlando is a great venue to learn more about the benefits these products can offer sports turf managers. If there is a need for information before hand, contact a local university turfgrass extension specialist. Turfgrass managers interested in the performance of new herbicides in the transition zone, can visit <http://tennesseeturfgrassweeds.org>. ■

Jim Brosnan is the head of the turfgrass weed science research and extension program at the University of Tennessee. Greg Breeden is with UT's Plant Extension program.



Reports from the field

This section was reported by Tom Mentzer, for Syngenta Lawn & Garden, Greensboro, N.C.

ANDY PARKER, GROUNDS SUPERVISOR FOR PARK HILL (MO) SCHOOL DISTRICT: “We don’t generally use a lot of herbicides. I prefer to manage weeds through other turf management practices. I seed once a month starting on March 30 and ending in the fall. We find that the dense turf canopy crowds out most weeds.

“Since our turf management program is based on good fertility, we see it as preventative for a lot of problems. The program is based a lot on reaction, and treating weed, fungus and insect problems as they arise. This helps us save a lot of money in our budget.

“I normally don’t use a lot of fungicides unless I absolutely have to, but I do use Heritage and Daconil to treat specific problems like dollar spot or brown patch when they arise.

“One of my biggest challenges is keeping up our fertility and making sure the turf is ready for the season. Considering physical education classes use the fields during the day, we need to make sure the turf is right for the teams. It seems parents are becoming more aware of the turf their kids are playing on, so there’s more pressure on us to make sure it’s smooth, even and safe.

“Before we apply anything to the fields, I always notify the coaches and physical education teachers a couple days beforehand. I want whatever we apply to be completely dry on the turf before we allow students onto the fields.”

Park Hill School District has nearly 20 acres of sports fields, all grown on native soil:

- 2 baseball fields (Kentucky bluegrass, mowed to 2-2 ½ inches)
- 2 softball fields (One is Kentucky bluegrass, mowed to 2-2 ½ inches, the other is bermudagrass)
- 1 soccer practice field (Kentucky bluegrass, mowed to 2-2 ½ inches)
- 3 ½ football practice fields (Quickstand cold-tolerant bermudagrass, mowed to approx. ¾-inch)

Most chemical applications are liquid (though Parker does use granular from time to time)

Tony Leonard, director of grounds for the Philadelphia Eagles: “Our chemical program mainly focuses on decreasing summer patch and gray leaf spot at our practice facility. We start treating for summer patch in April with a broad spectrum fungicide and reapply every 21-28 days until early June. Our gray leaf spot program begins in mid-July through September. We rotate a number of products through the season to prevent against fungicide resistance.

“Our (stadium) field is 100 percent cold-tolerant Patriot bermudagrass. Weeds at both facilities are rarely an issue because I believe in maintaining a high, dense canopy through proper watering, mowing and fertilization. As a result, we haven’t had to use a pre-emergent herbicide in 5 years. However, when we do get small, occasional occurrences of crabgrass or goosegrass, we spot treat those with the appropriate herbicide.

“To guard against fungus issues on the stadium in the spring, we apply either Daconil or Heritage. We also apply those products when we cover the field before a concert or other event.”

Background facts:

- The Eagles’ practice facility has 6 ½ acres of turf (mowed to 1 ¼-inch)
- The Eagles’ stadium has 2 ½ acres of turf (mowed to ¾” – 1”)
- All the fields are sand-based, have good air flow and Pythium is not an issue
- All chemical applications are liquid (no granular) ■



University turf programs, synthetic field providers partnering for research

WITHIN HOURS OF ONE ANOTHER two interesting news bulletins came across the wire in late August. The first said that Penn State and FieldTurf have partnered to develop the world's first facility dedicated to sports surface research; soon thereafter, an announcement from the University of Tennessee that it had agreed with AstroTurf to create the Center for Safer Athletic Fields to compare natural grass playing surfaces to synthetic surfaces.

PSU and FieldTurf's 5-year commitment will research synthetic turf, running tracks and indoor sports surfaces. The goal is to further accelerate safety within the entire synthetic sports surfacing industry. The new Center for Sports Surface Research will be an intercollegiate program managed within the Department of Crop and Soil Sciences in Penn State's College of Agricultural Sciences and headed by Andrew McNitt, an associate professor of soil science.

Penn State's McNitt has been studying synthetic turf for many years and is well regarded in the world of sports surface research, particularly as it relates to natural and synthetic turf, and conducts research relating to athletic field surface characterization and golf green construction and maintenance.

"This is the next logical step. It's a natural progression in our research. Every NFL franchise has at least one synthetic practice surface, and half of them have synthetic turf on their game field," said McNitt. "I'm getting calls from school board members, athletic directors, coaches and concerned parents daily asking for unbiased information about synthetic turf versus natural turf. If university researchers aren't going to do the research to assess and accurately compare synthetic surfaces to natural turfgrass, who is?"

"People used to view synthetic turf as a threat to natural grass and something to be opposed. There is room for both surfaces. Whether we like it or not the market has already moved and as sports turf managers and turfgrass researchers we better be ready with some answers when

➤ **DR. MCNITT** has led synthetic turf research at Penn State for more than 8 years.

the public starts asking questions or else we will be left behind in the decision making process one more time," McNitt said.

"For us at Penn State, the goal is: whether it's natural turfgrass or synthetic, we're interested in providing the best surface possible. The goals are the same!

"There are a lot of companies selling synthetic turf; what FieldTurf has done is to put some better science behind this. The center's goal is to marry human movement and surface manipulation to maximize both playability and safety," he said.

In order to implement the science, McNitt will work with Thomas Serensits, manager of the Center for Sports Turf Research. "Tom has tremendous experience formerly working for the Philadelphia Eagles and Virginia Tech doing field maintenance and implementing research. Dianne Petrunak leads the center's research and has been involved in synthetic turf research for more than 8 years," McNitt said. "Dianne's background is in plant pathology and her expertise enabled us to quickly and accurately conduct research on the relationship between synthetic turf and MRSA (see <http://ssrc.psu.edu/staph/index.cfm>)."

Others involved in the Center at Penn State include: Dr. John Challis, director of the Biomechanics Lab in the Department of Kinesiology; Dr. George Salvatare, the University's head athletic trainer; and Dr. Gary Purdew, head of the Carcinogenic and Toxicology Center at Penn State, among others. "Together we hope our research leads to improvement in the quality and safety of all sports surfaces including basketball floors, running tracks, wrestling mats and of course natural and synthetic turf," said McNitt.

"Our partnership with Penn State brings two industry research leaders together," said Joe Fields, chief executive officer of FieldTurf. "The original inspiration for FieldTurf was to provide a surface that would enable athletes to attain maximum performance while minimizing injuries and we believe that this partnership will help ensure that we continue to develop safe and performing surfaces to the athletes that we serve."

For more information visit <http://ssrc.psu.edu/>.

UT and AstroTurf

After more than a year of intense planning, The University of Tennessee has partnered with AstroTurf to create the Center for Safer Athletic Fields, which will compare natural grass playing surfaces to synthetic surfaces. The Center will be located in Knoxville at the UT Institute of Agriculture's East Tennessee Research and Education Center. This geographic location will enable scientists to conduct research on a variety of surfaces from both cool and warm season climates. The goal is improving athletic performance and reducing injuries through an on-going comparison of synthetic surfaces to natural grass.

The outdoor research facility will comprise 60 small-scale athletic

research fields constructed from a variety of playing surfaces. UT turfgrass scientists will compare the safety and performance of a range of synthetic playing surfaces to natural grass surfaces.

While determining the safety and performance of AstroTurf products compared to various natural turfgrass systems, UT turfgrass scientists will also monitor these relationships over time. Additionally, they will evaluate the environmental impacts of each system. The research should lead to the development of new, more accurate methods for testing the safety and performance of all synthetic turf systems.

Dr. John Sorochoan, associate professor and turfgrass specialist with the Department of Plant Sciences in the UT College of Agricultural Sciences and Natural Resources, has been researching in the sports turf industry for more than 15 years and sits on the board member of the Sports Turf Managers Association (STMA). Dr. Jim Brosnan, assistant professor and turfgrass specialist has developed tools for testing sports turf surfaces. He is the STMA representative to the American Society of Testing and Materials (ASTM) and Technical Editor of *SportsTurf* magazine. The UT Turfgrass Team is rounded out by Tom Samples, UT Extension turfgrass specialist and Brandon Horvath, a turfgrass pathologist.

"This is a pioneering effort in conducting research with an emphasis on athletic field safety," Brosnan said. "Historically, sports turf research and maintenance have not been well supported. We are honored to partner with AstroTurf. Because of our vision for a compre-

hensive research project, we selected the only partner that controls all facets of synthetic turf manufacturing from polymer development to field installation."

"Advancing the science behind our products is critical to delivering the best solutions for athletes and the sports turf industry," said Bryan Peebles, president of AstroTurf. "This research partnership demonstrates AstroTurf's commitment to enabling our industry to provide the safest systems for the players and the environment."

Natural surfaces will be planted with bermudagrass, Kentucky bluegrass and others. Both mechanical and human studies will be performed to create "real play" conditions. Rod Walters, world-renowned in the athletic training industry, helped with the design and provided input on the infrastructure for the research areas to be involved in human performance and biomechanics. The research will be scientifically-based for statistical analysis.

"We are interested in credible, unbiased, fact-based research to test our products," said Peebles. "Taking the lead in developing standards that do not exist today allows us to develop the best products. When a client says 'Show me the data,' we will have what they need to make an informed decision."

Construction of the Center will take 6-8 weeks with ground breaking taking place this fall. For more information visit <http://www.turf.tennessee.edu>. ■



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