

tures or extreme heat suppress the ant population. A mound may still appear occasionally after a rain, but the impact is minimal. Approximately 50 City personnel monitor for fire ant activity and act to prevent unacceptable levels on all park properties throughout the city. There have been no other insect infestations.

The transition area between the infield and outfield at the arc is washed weekly or bi-weekly depending on staff availability to reduce and/or eliminate lip buildup and increase safety on the field. Other techniques are used in the off-season when necessary.

Coe says, "The infield clay area was rebuilt during the winter of 2001-2002 by in-house staff and is a mixture of approximately 20 percent sand, 60 percent clay and 20 percent calcined clay. It has been modified with additional calcined clay as wet conditions warrant. We drag the field with a field rake and pull-behind groomer.

"Irrigation is a critical factor. We typically water the infield clay at night, as well as the turf. We inspect the moisture in the skinned area the first thing each morning to see how much it has been affected by the wind and if any additional irrigation is needed. We'll do a nail drag, then tackle the other areas of maintenance, the mowing, usually in two directions, trimming, cleaning of the restrooms. The primary concern is to get the correct amount of moisture so the infield plays as it should," says Coe. "We'll put a final groom on it later in the day. The extra work is well worth it. The tournament teams know that extra attention to the infield gives us good playing conditions in wet or dry weather, even when other area fields aren't playable."

The athletic field staff doesn't see that as anything out of the ordinary. They expect to go the extra mile. Edwards says, "When I told one of the crew members about the Award and how proud of them we were, he noted he was just doing his job. That reflects the tremendous attitude of our entire staff."

Coe recently earned his Certified Professional Turfgrass Manager certification through the Texas Turfgrass Association, further evidence of the level of professionalism expected and achieved. Fuller adds, "Oran Good 5 has received extensive praise from nationally recognized softball teams ranging from the Under 8 Divisions through College level teams due to the exceptional quality of the field and professional customer service. Teams from all over the Dallas Metroplex comment on the tremendous quality of the facilities and turf. The city of Farmers Branch prides

itself on being service oriented and responsive to our citizens' needs. Oran Good 5 is a prime example of what dedicated employees, positive administrative encouragement, interagency cooperation and a supportive community can accomplish when they work together."

ST

Suz Trusty is communications director of the Sports Turf Managers Association.

ADVERTORIAL

Fertigation and Water Conservation

The single most critical key issue facing irrigation and landscape management in America today is Water Conservation. This may not seem as important in the south and east where water is now plentiful, but in the western states water is as valuable as gold and they are all very concerned about its use on landscapes. How valuable is Water in the west? Some golf courses in Las Vegas spend over \$1 million a year on water alone.

Here are some important facts:
50% of our available potable (drinking) water in most cities is used to irrigate landscapes. This number sounds high but it is a fact, and the allocation is being cut in the western states.

The first thing that a home owner or landscape manager will do when the landscape looks bad, is to react by turning up the irrigation.

Water does not make a plant green. Water is important for the plant to function, but nutrients make the plant green and healthy.

Most people will over water and under feed (fertilize) the plant. Many irrigation manufacturing companies have developed water reduction systems including weather stations, moisture sensors, and computers which will limit water use, and all of these can reduce water use. But the use of these standard methods will reach a point where landscape quality suffers, and poor irrigation coverage begins show. Turf Feeding Systems has developed technology that takes irrigation water use to a much lower level, yet can improve landscape quality and appearance. That's right, less water but improved landscape quality and healthier plants. This technology is called fertigation, which is the injection of liquid fertilizer into an irrigation line to feed fertile water™ lightly with each irrigation cycle.

Fertigation is not a new technology. Turf Feeding Systems is the industry leader with more than eighteen years experience and thousands of their systems are installed on golf courses, sports turf and landscapes around the world.

What makes fertigation unique, and sets it apart from other technology is the way it feeds the plant. When liquid nutrients are injected into the irrigation water, the water becomes fertile, which is the most efficient and readily available way for a plant to feed. This method of light and continual feeding will nourish the plant through the root zone and through foliar uptake, addressing the total health of the plant, the soil, and the root system.

The key to Fertigation is unlocked with the appropriate nutrients, and enriched with specific organic additives designed to improve and strengthen the root system as well as make improvements to the health of the soil. This practice can produce a very deep and dense root system, which is the heart of a healthy landscape. Focusing on the Root System is what knowledgeable landscape managers should strive to practice, and the rewards are a much better appearing landscape using much less water and fertilizer.

Fertigation today has become a well known tool in improving landscape quality. Turf Feeding Systems has installed hundreds of fertigation systems on new golf courses to shorten the grow-in period by two to six weeks. After many years of experience in this field, Turf Feeding Systems began to notice improved drought tolerance on sites with fertigation, triggering an interest to expand this research. With that challenge in mind, Turf Feeding Systems decided to begin their own tests, and initiated the St. George Project. A contractual agreement was put in place two years ago between Turf Feeding Systems and the City of St. George, Utah to work together as partners in developing a model city program which includes fertigation systems throughout the city. This project was launched with their public parks, sports fields and cemetery, initially to prove the agronomic and economic benefits, and the water conservation advantages. Now after a full season, the evaluations are in and the results are outstanding.

St. George Utah is in the high desert of Southern Utah 120 miles from Las Vegas with 8" of annual precipitation, bad soil and poor water quality. It is a city of 60,000 growing at the average of 10% annually, but obviously with lim-

ited water resources. Utah has been in a five year drought, and last year St. George was forced to reduce water use on its parks by 20%. Compounding this problem, Utah experienced the lowest snow pack in years over the past year, which caused the Governor to issue a state wide water conservation alert. This forced the City of St. George to once again reduce its water use on its parks and landscapes another 20% this year. The irrigation systems in St. George for their city parks have the best controllers, are equipped with weather stations, and ET factors across a citywide network. This city doesn't waste a drop of water. This major water reduction concerned the city landscape director, but in the areas that had fertigation systems installed, those landscapes were the best in the city. The city is convinced that the attributes in fertigation will preserve their landscapes and save their water resources. Turf Feeding Systems will be installing more fertigation systems throughout St. George to maintain the oasis that it is, while saving even more of its water for the future.

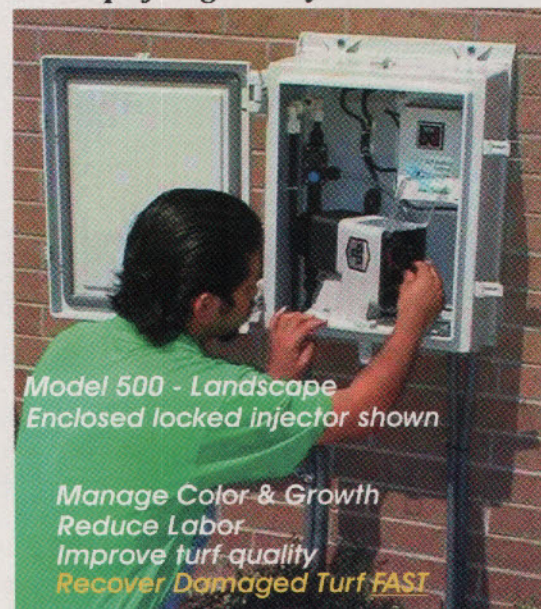
What makes Turf Feeding Systems technology stand apart from the others? It is the attention and focus on the root system and the soil's health. With that focus in mind, the system can produce a healthy plant, and a landscape that uses less water. It is the combination of fertigation, and the proper nutrients with specific organics that can build a strong root system.

The argument for fertigation is best stated by Mr. Bill Nolde, an agronomist from San Diego who said, "Years ago backflow prevention was an option on an irrigation system, but now it is a requirement. Someday fertigation will be a standard part of an irrigation system for maximum efficiency".



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BY BRIAN E. VINCHESI

IRRIGATING SPORTS FIELDS

Today irrigation of sports playing fields is becoming more and more prevalent and necessary because of competition, turfgrass quality, and liability issues. And sports field irrigation systems are as varied as the sports being played on them.

How fast the field can be watered is an important consideration with any athletic field and is even more important on a lighted, heavily used field. The amount of non-use time defines the water window, but watering turf when the sun is high should be avoided of course, as it makes the irrigation system less efficient. Having to water the field every day means mowing a wet field and does not promote proper turf management principles.



A typical water window might be 8 PM to 5 AM on a non-lighted field, but as little as 1 AM to 5 AM on a lighted field, as little as four days per week on either. The smaller the water window, the larger the water supply will need to be and the more sprinklers will need to be operated at the same time. The water supply also needs to have proper backflow protection if on a portable supply or injecting chemicals.

No matter where the water supply for the irrigation system originates, there should be some sort of emergency shut off for the system on the field side of the facility. This allows for a fast shut off if something breaks or fails. The shut off can consist of a gate or ball valve shut off in an easily accessible location that does not require a special key for access.

Sports fields are unique landscapes and as such should be irrigated with equipment that is specifically manufactured for sports fields. This includes sprinklers that have rubber covers, heavy duty retract sprinklers, multiple nozzles, options for stainless steel risers among many others. Most sportsturf professionals have their own way of

watering and require that the system be designed and installed to meet their individual tastes. This results in some unconventional layouts, especially with sprinkler zoning, but very good turf conditions.

Sports field sprinklers need higher pressures and use more water to operate than conventional landscape irrigation system sprinklers. In most cases an athletic field sprinkler will require 50 to 70 psi operating pressure at the sprinkler base and use 12 to 24 gallons per minute depending on the spacing of the sprinkler and what type of field is being watered. It is best to minimize the number of sprinklers on the field. Eliminating sprinklers down the middle of the field (wear points) is a requirement, so three and five row systems do not work well.

The sprinkler system should be zoned for the available water supply and any sun/shade issues. In large stadiums, sun and shade, as well as wind issues, can be major factors in the irrigation system design as some areas of the field will not like as much water as others, and the irrigation system needs to be zoned and scheduled accordingly.

The location of valves and valve boxes also need to be considered with any sports field system. The valve boxes need to be located well off the field or buried beneath the turf at least 6 inches. In some cases, the valves may be located in a manifold configuration in the water supply room and piped out individually to the sprinklers. Although this is an expensive option, it insures that no below-the-field piping is under constant pressure.

Today's sports field irrigation systems have modern controls that allow turf manager flexibility in controlling the system. Some managers prefer the simple mechanical type control while others opt for computerized central control systems that allow for integration of an on site weather station, remote control and GPS mapping systems to allow for the ultimate in on field use. However, many sports field systems are operated semi-automatically to closely control the water application.

Irrigation is no longer just limited to natural turf fields. It is now common for many nylon and synthetic fields to be irrigated. Irrigation is especially common on field hockey fields and many major colleges water their non-turf fields. This is not much different than on a natural turf field, although not as much water needs to be applied, as the purpose is for cooling or wetting, not sustaining plant life. Sometimes no sprinklers or piping is installed under the synthetic fields.

Sports fields also have some areas that allow for specialty irrigation. This includes warning tracks, dugout areas, infields, and bullpens. These may or may not be watered, but will require some specialized sprinklers and zoning if they are. Sports fields also require a means of being hand watered for maintenance and dust control. Quick coupling/snap valves are used for these connections and should be placed where needed throughout the field.

Brian Vinchesi owns Irrigation Consulting Inc., in Pepperell, MA. He is the president of the Irrigation Association.



TALE OF ONE CITY

GARDEN CITY (KS) GOES TO GAMEDAY

Driving 5 hours to play a football game can be exhausting. But having to do so because neither team has a playable field due to heavy rain is especially frustrating. That happened to the Bronc Busters of Garden City Community College (GCCC), Garden City, KS for their season opener last year.

That's when Garden City made the decision to avoid future aggravation and decided to install GameDay Grass XP synthetic infill brand from GeneralSports in Memorial Stadium after season's end.

Memorial Stadium sees extremely heavy use. It is home to the GCCC team but also the site for all the practice and home games played by Garden City High and Junior High, plus Garden City's YMCA football program and each of the teams' marching bands. In addition, the high school will use the field for soccer next spring and the college will begin soccer practice and competition on it in 2005.

"With a multi-use field expected to get a lot of activity from the community, we really wanted to make sure we got a product that could stand up to the extreme conditions," said Bob Larson, GCCC's head football coach.

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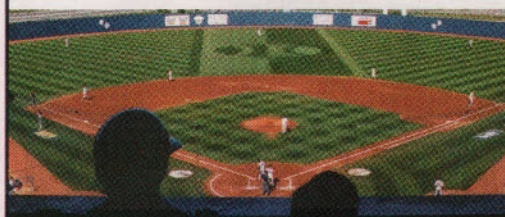


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SAGE ADVICE ON SOFTBALL INFIELDS

We asked two turf managers who have been recognized for their work on softball fields to share how they care for their infields:

Rick Newville, 2002 High School Softball Field of the Year winner says, "Our infield clay has a 60-15-25 sand, silt, clay consistency. We initially dragged in 3 tons of calcined clay in to a depth of 2 inches 3 years ago, and added 2 tons of vitrified as a topdressing once the skinned area had been rolled with a 1 1/2-ton asphalt roller. We try to incorporate at least 1 ton of each amendment each year.

"During the playing season, the skin is watered three times a day: morning, afternoon, and just before a practice or game," Newville says. "Skin is rolled with roller at least twice a year. And the skin is tooth-dragged after each game or practice and dress-dragged the following morning and then watered."

Editor's note: Rick Newville has been selected as the Head Grounds Superintendent for the Helliniko Olympic Softball Complex in Athens, Greece for the 2004 Olympic Games. He left for Greece January 24 and doesn't return to the States until August 31. Best of luck, Rick, and congratulations!

Robert Trevino is landscape supervisor for Texas Women's University. He's also a 2002 FOY winner. Here's what he had to say:

"To sustain our softball field's prime condition, year round maintenance is necessary. Our staff of 23 spends the majority of the time maintaining our 270 acres. The softball field has two employees who devote their time to maintaining the complex.

"During the growing season, the field is mowed three times each week; during the winter, at least two times each week, depending on the weather. The grass is overseeded with Gulf Coast rye in early September and as needed through winter and early spring," says Trevino.

"Of course the infield is a major part of our maintenance. During the growing season, we drag the infield and water it down daily. A few years ago we installed irrigation in the infield to save on manpower and it has worked well," says Trevino. On an as-needed basis, we spike the infield to loosen up and aerate the soil. During the winter, we drag and water down the infield at least twice a week, depending on the weather.

"When the field first opened, the infield was a continuous major problem for us. Despite limited funding we began working with a rep from Diamond Pro, who recommended some products but also had some helpful suggestions.

"Of course, our biggest advantage is our dedicated employees," Trevino says. **ST**

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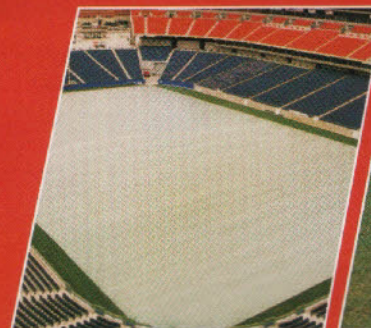
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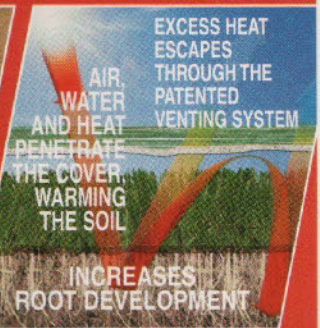
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Grounds Maintenance Services	800-227-9381
Harrell's Fertilizer	800-282-8007
Haydite	614-939-0717
Klawog-Klacon by Wessco	330-745-9322
Luck Stone	434-295-3611
MarCo Clay	519-694-7591
Partac Peat/Beam Clay	800-247-2326
Pro's Choice/Oil Dri	847-710-2502
PROFILE Products	800-207-6457
ProSource One	877-350-3999
Southern Athletic Fields	800-837-8062
Stabilizer Solutions	602-225-5900
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United Hort Supply	303-487-9000
Valley Quarries	717-530-1559



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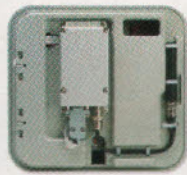
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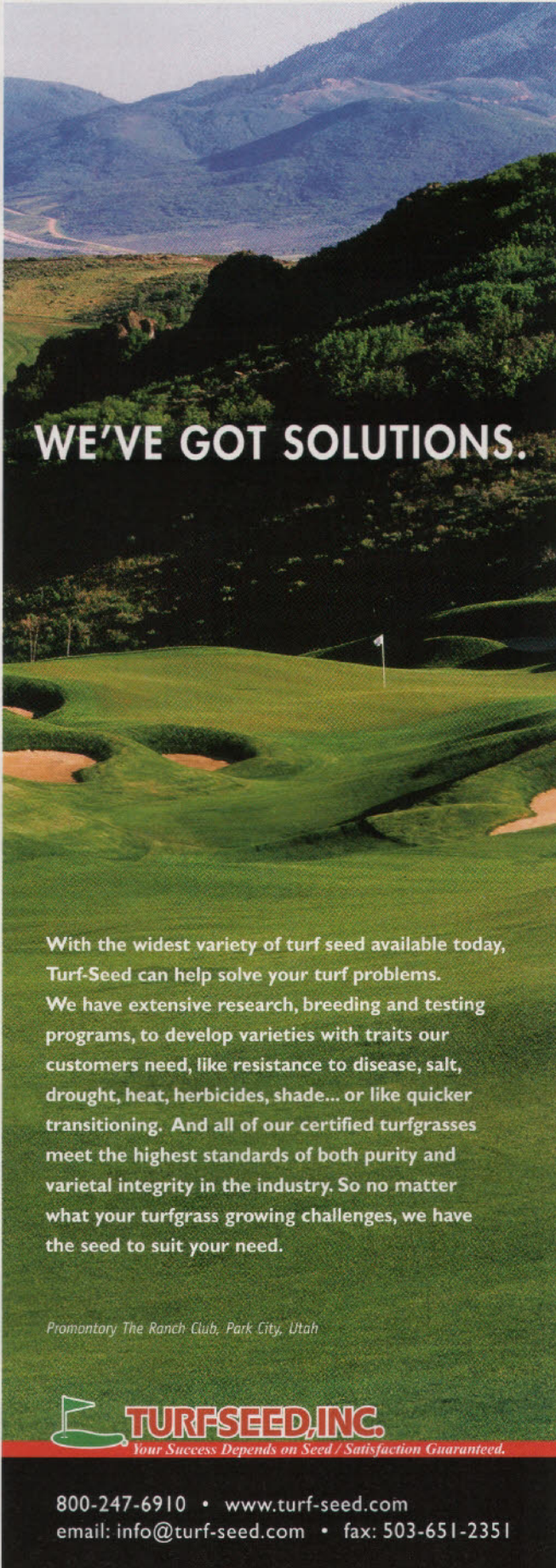
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