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David Ruwadi, Operations Director
Jackson Township Parks & Recreation Department
Stark County, Ohio

sportsTURF

PROGRAM

VOLUME 14, NUMBER 10

OCTOBER 1998

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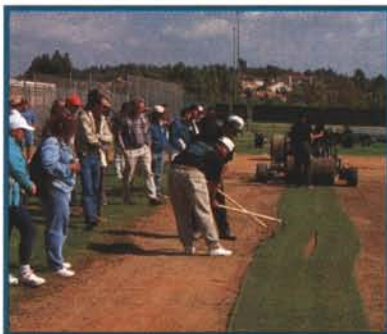
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Crew members coax newly laid big-roll sod into position.

Courtesy: Trusty & Assoc.

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Sports
Turf
Managers Association

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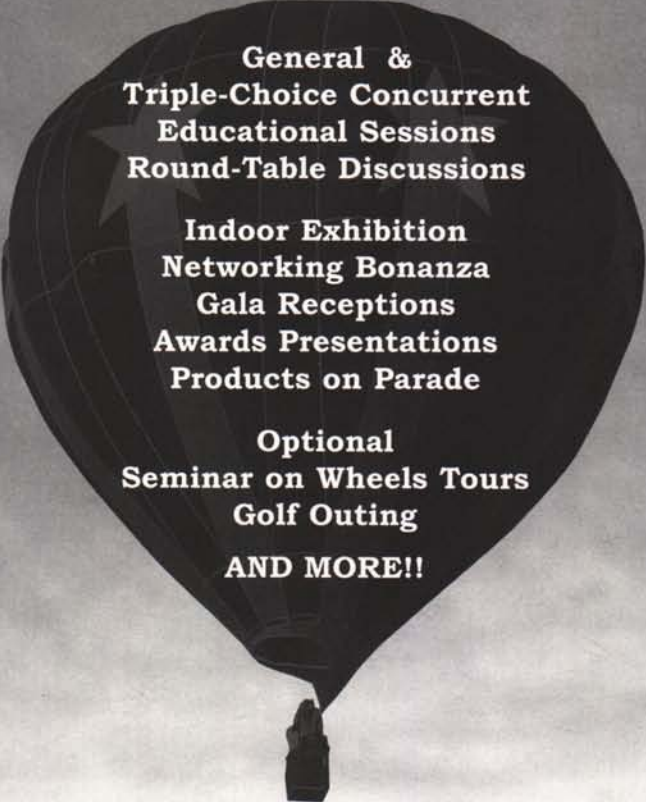
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Surf and Turf

Last month, I had the chance to attend the Florida Turfgrass Association's 46th annual Conference and Show in Tampa, FL. Humidity was high and the turnout was low, but while exhibitors wished that the opposite was true, most agreed it was a worthwhile event.

Dubbed "Turf Web '98," the show sought to draw attention to the high-tech influences that are starting to take root in the turf industry. While it's true that sports turf managers spend most of their time away from the desk and in the field, the internet's influence on the green industry continues to grow.

Many sites on the World Wide Web focus directly on issues pertaining to the maintenance of athletic turf. Commercial sites introduce new products, while educational webpages detail current research that's being conducted at colleges and universities across the country. The opportunity to put such a wealth of information at your fingertips certainly justifies investing a few hours of your time to familiarize yourself with the Internet.

Turf Web '98 helped attendees to do just that with a seminar dealing with website searches. The Internet is a user-friendly system. Most of the time a click of the mouse will send you exactly where you want to go. The most difficult task is getting started.

SportsTURF's webpage is a great place to begin. In addition to providing an electronic version of the magazine's current issue, www.sportsturfonline.com features archives of past issues, useful product information, a forum for discussion of current issues, and access to several other industry magazines. Once you get your feet wet, you can surf the Web through our links to other green industry sites.

Turf Web '98 also showcased the work of researchers at the University of Florida-Gainesville, which will serve as the site for next year's conference. Faculty and students presented science-fair style exhibits of projects that are being sponsored, in part, by the Florida Turfgrass Association.

Among the more interesting studies was an evaluation of high-performance sports fields by Dr. Grady Miller. He's been working on the problem of field hardness, and is trying to pin down a quantitative method of evaluation. He worked with the Clegg Impact Soil Tester, and observed ball roll and deflection on two soccer fields.

Dr. Robert Dunn exhibited his 1998 Nematode Control Field Trials. The parasitic worms feed on the turfgrass plant's nutrients. They cause physiological changes that open the turf to other problems.

Dunn's research showed that no currently available product controls nematodes in established turf without causing visible injury. He told me that this problem is of particular interest to sports turf managers, due to the stress that athletic fields must withstand. Dunn called for more research and more product development to bring the problem under control.

Look for more information about University of Florida research projects on the Web: www.ifas.ufl.edu.

Steve Berens, Editor
(847) 427-3005

Tip o' the Month



Lip Buildup

by Floyd Perry

Progressive groundskeepers know that dragging, weather, players' actions, and the yearly addition of clay create extensive buildup of infield material along the grass edges. To bring this problem under control, groundskeepers either cut sod from the field, or they roll the lip after a heavy rain or double irrigation cycle.



Once the situation is manageable, several options can help reduce the annual reconstructive task.

High school and recreation fields are generally abused, so lip problems are going to be a regular problem. With help from some unique tools, a little high-volume water, and some off-season maintenance, we have a chance to prevent some potentially serious bad bounce problems — and the upset parents that go with them.

Continued on pg. 35



November 1-5

North Carolina State University Supervisors' Management School, Wilson Lodge, Oglebay Park, Wheeling, WV. Contact Chip Futrell: (919) 513-1938.

November 4-6

Eastern Regional Nurserymen's Association's (ERNA) Expo Fall '98, Atlantic City Convention Center, Atlantic City, NJ. Contact ERNA: (800) 376-2463, or fax: (301) 990-9771.

November 10-13

New York State Turfgrass Association's (NYSTA) Annual Turf and Grounds Exposition, OnCenter, Syracuse, NY. Contact NYSTA: (800) 873-8873 or (518) 783-1229.

November 11-13

The Midwest Regional Turf Foundation's Turfgrass and Ornamental Seminar, Lafayette, IN. Contact Beverly Bratton: (765) 494-8039, or fax: (765) 496-2926.

November 14-17

The ninth annual Green Industry Expo (GIE), Opryland Hotel Convention Center, Nashville, TN. Contact Eleanor Ellison: (770) 973-2019.

December 7-10

Ohio Turfgrass Conference & Show, Columbus Convention Center, Columbus, OH. (614) 760-5442.

December 9-11

Rocky Mountain Regional Turfgrass Association's (RMRTA) 45th annual Conference and Trade Show, Currigan Hall, Denver, CO. (303) 770-2220.

1999

January 13-17

Sports Turf Managers Association's (STMA) 10th annual Conference & Exhibition, Mesa, AZ. Contact STMA: (800) 323-3875 or (712) 366-2669.

STMA MESSAGE

Sports
Turf
Managers Association



Home Field Advantage

Did you get to watch any of the Little League Baseball Championship games played in Williamsport, PA, in August? It was great to see that all the hard work done in 1996 by the KAFMO Chapter, which includes such commercial members as Alpine Services and Hummer Turfgrass Systems, was still benefiting this baseball institution.

The KAFMO Chapter also helped conduct a two-day seminar on field maintenance and pre-game preparations at the field this past May. Don Fowler was the driving force for this event.

I understand that Fowler continues to be the point person for advice and assistance on the long-term maintenance of this field. This year, he once again marshaled a group of volunteers to assist in field preparations prior to the event and during the week of competition leading up to the Championship Game. The prime focus, as always, was safety and playability. And of course, aesthetics was important as well.

To all of you involved, thank you!! You deserve a big pat on the back for your dedication to our industry and to youth sports. This outreach to Little League participants is a prime example of the giving back to others that is so much a part of STMA.

With soccer and football in full swing, the wear machines of American contact sports have sharpened their spikes for another season of turf abuse. Check your fall fertilization schedule. As the weather is cooling down, now is the time to give your turf the help it needs to hold up through fall sports and build up reserves for an early spring green-up.

Now is also the time to remind your boss of the advantages you'll gain by attending the 10th annual STMA Conference and Exposition in Mesa, AZ, January 13-17, 1999. The multiple-choice educational sessions, interactive round-table discussions, and trade show designed specifically for the sports turf manager will all help you professionally. And there's so much to see in Arizona's Valley of the Sun: many premium baseball spring training facilities; BOB (Bank One Ballpark), home of the Arizona Diamondbacks; and Arizona State University's Packard Stadium and Sun Devil Stadium. Choose any of the three optional Seminar on Wheels tours and you'll be sure to pick up ideas to put to use on your home field.

Always a favorite part of our STMA conferences is the opportunity to meet and exchange information with other sports turf managers. The dream of our founding fathers was that sports turf managers would share freely of their knowledge and hard-earned experience, so the entire industry would grow professionally. Thanks to them and to you, that's happening.

So start the wheels rolling to join other sports turf professionals in "Growing into the New Millennium" at the 1999 Conference. I hope to see all of you there!!

Stephen Guise, STMA President
(714) 704-0403

Retrofitting: Pros and Woes

by Robert A. Bodi, CID, CLIA, CIC

Water is one of the key ingredients in maintaining quality turf on sports fields. Without a well-designed, installed, and maintained irrigation system, your job is a lot harder. Even a poor sprinkler system beats dragging a hose around the ballfield; be thankful for what you've got, and focus on how to make your system the best it can be.

I have never seen a system that's 100-percent efficient. In the real world, they just don't exist.

On the other hand, I have never seen a system that could not be improved. Before you send a crew member out with a PVC saw and the old trencher, consider the capabilities of your existing system, and think about the qualities you're looking for in a new system.

Water needs

Knowing your turf's water requirements is the most important factor in determining your needs and developing a plan of attack. The irrigation system is blamed for the poor turf at



Director Robert Bodi designed the master irrigation system at Joy Christian Athletic Complex. *Courtesy: Robert Bodi*

many facilities: the system can't talk back and it's an easy out.

An irrigation audit may prove that the system is adequate, but is not being used wisely. About 25-30 percent of the time, the problems can be solved without even getting a shovel out of the truck.

Remember, an irrigation system is only as good as its design and the person using it. You must know the requirements of your turf to be able to manage your systems properly.

Many factors help determine water requirements. Combined with the efficiency rate of your system, factors

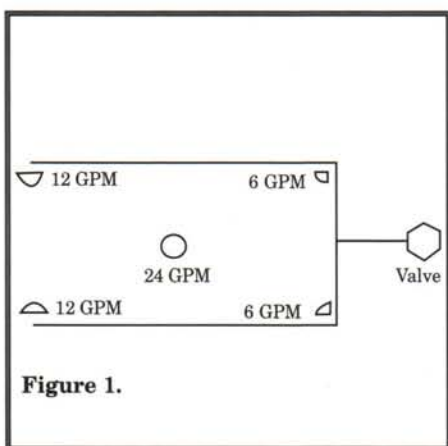


Figure 1.

such as soil profiles, water holding capacity, soil infiltration rate, and the evapotranspiration rate in your area will dictate how, when, and how much to water. If you don't understand these principles, you need to retain the help of an irrigation auditor or irrigation professional.

Soil is a holding tank for the turf's water requirements, and it must be replenished before permanent wilting occurs. Irrigation systems can be a sports turf manager's best friend or worst enemy.

Let's look at some of the reasons to consider retrofitting or scrapping irrigation systems.

Poor efficiency

One of the most common ways to test system efficiency is with the "catch can" method. This entails distributing open-top, straight-sided cans over the field, cranking up the irrigation system for at least 10 minutes, and then measuring the amount of water in the cans. If you place a can where two zones hit it, you'll need to run both zones for the same amount of time to get an accurate reading.

The amount of water delivered to a given area, measured in inches per hour, is the precipitation rate. If the system runs for 20 minutes, multiply the amount of water in the can by three to calculate the rate in inches per hour.

- **Example: 0.15 inches x 3 = 0.45 inches per hour**

Don't be surprised at the vast difference between water levels in different cans. They can vary as much as 30-40 percent. But this simple test will tell you how efficient your system is.

You can also determine the distribution uniformity (DU) of your system using catch can results. Stated as a percentage, DU measures the

uniformity of your system. It tells you how your driest area compares to your average precipitation rate in the area tested. Refer to an irrigation book or consult your irrigation professional to calculate the DU of your system.

If system efficiency results are unsatisfactory, you need to decide if moving heads and/or changing nozzles will bring acceptable coverage, or if the system should be scrapped.

Old systems

Some systems installed 15 to 20 years ago still run great. Others can be made into good systems, and others should be replaced. The age of your system isn't the most important factor; it's all about meeting the requirements of your turf.

Many older systems can be converted by simply changing nozzles, moving certain heads, and adding heads. But in doing this, you must not exceed 5 fps in your piping to maintain proper hydraulics and prevent opening the system to water hammer. This is difficult if you have inherited systems and don't know the size and routing of your pipes.

If you have a high-maintenance system that won't run properly, get rid of it. It will fail when you need it most. You risk losing good turf, and you'll be digging up the field frequently, disrupting its use.

Consider your options

After examining your system, the hard question is: Do we fix it or start over? If the system itself is the problem and money is no object, replace it. If budget constraints force you to live with portions of the existing system, to what depth do you retrofit it?

One of the most common problems with irrigation systems is poor precipitation rates. This can usually be corrected or improved by changing the nozzles in your rotors.

Rotors have a specific flow: the amount of water that comes out of the nozzle, measured in gallons per minute (gpm). The gpm rate is changed directly by the pressure at the nozzle, measured in pounds per square inch (psi). The system's pressure, degree of rotation, and nozzle play important roles in matching precipitation rates.

The manufacturer of the type of heads on your field can supply information you need. Manufacturers list performance details, including a range of pressure ratings at which each nozzle performs efficiently, the

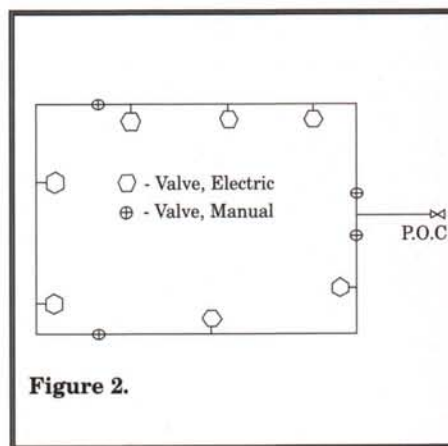


Figure 2.

effective radius for that model at that pressure, and the output of the nozzle at that pressure and radius.

To match precipitation rates, you must first determine the area each head is covering. This is designated by the portion of a full circle that the spray pattern covers (in degrees).

For example, in **Figure 1** five heads cover part of a soccer field. Two of the heads cover an area of 90 degrees, two cover 180 degrees, and one covers 360 degrees. The 90-degree heads supply water at six gpm; the 180-degree heads supply 12 gpm; and the 360-degree heads supply 24 gpm.

As this irrigation system runs, each 90-degree area within that zone of the field receives a uniform amount of water: six gpm. The rotors in this zone have a matched precipitation rate. This is where you need to be with your system; but be careful. To do this properly, you have to know the available pressure, the size (thickness and length) of your underground pipe, the number of outlets on the system, and the spacing of the heads. You also need a general knowledge of hydraulics.

A simple change of heads can increase a system's efficiency. Newer heads give you more advanced technology and more choices, and they need less maintenance. Make sure the new heads' throws (the distance the stream of water travels) are compatible with those of your existing heads.

Sometimes, adding a head or two is the best and simplest way to attain better coverage in a certain area. Again, be careful. You must know the size of your piping and your pressure and flow rates, so you don't overload the system. You also have to match new nozzles to existing ones for uniformity.

To gain more control over your system, consider a new clock. Many new

clocks have features such as cycle and soak, syringe cycle, multiple cycles per day, and multiple programs with several start times. This controller is the heart of your system; don't try to cut costs here to save money. You'll be sorry you did.

System overhauls

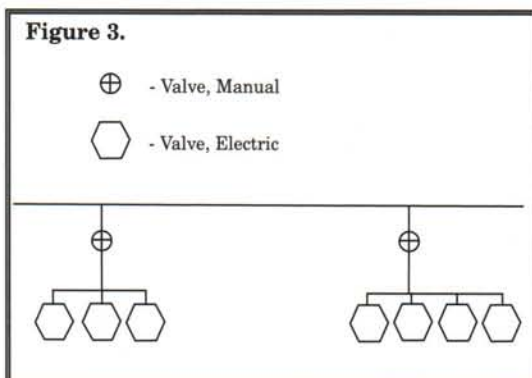
If the budget allows a complete overhaul of your system, consider features that could save you a lot of time and maintenance in the future. Isolation valves are a great way to control a system that's partially down. With properly located isolation valves (see **Figure 2**), you can leave a portion of your system up and running while you fix a problem in another part.

Using isolation valves directly upstream from manifold valves is a very good investment. Here again, if you have a bad valve and have to cut it out, you can leave the other part of your system running as you do so (see **Figure 3**).

Quick connects are another nice addition to a main line. Use them for watering the infields, cleaning the dugouts and bleacher areas, or washing sidewalks.

A rain-sensing shut-off can shut down your system in case of rain. Most have adjustments that allow you to set the amount of rainfall that will shut down the system.

in the past. Whether you need a new system or need help with your old one, hiring a good, certified contractor is well worth the money. And don't be afraid to ask questions. This field is your baby. □



Don't try to do anything in your retrofitting that makes you uncomfortable. There are many qualified people to help you if you get stuck. Most irrigation suppliers have people on staff that can be a great help.

If you decide to hire a contracting firm, check out the work that its done

Robert A. Bodi is director of the 375-acre property of Bellevue Baptist Church in Cordova, TN, which includes the Joy Christian Athletic Complex, STMA's 1997-1998 Softball Field of the Year. He's an Irrigation Association Certified Irrigation Auditor (CLIA), Contractor (CIC) and Designer (CID).

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