

Irrigation systems: What's watering your fields?

We asked some of the top sports turf managers at 4-year universities around the country what irrigation systems they employ at the different fields they are responsible for, as well as how they maintain them and schedule water use. Our panel included: Kevin Bevenour, campus grounds supervisor, Millersville (PA) University; Jason DePaepe, CSFM, athletic turfgrass manager, University of Colorado; Eric Kleypas, athletic turfgrass manager, Auburn University; Mike McDonald, CSFM, turf manager, University of Minnesota; Donnie Mefford, sports turf manager, University of Kentucky; and Jeff Salmond, CSFM, assistant director of facilities, Northwestern University.

What irrigation systems do you employ (including portable and installed irrigation systems) and on what fields, e.g., football, baseball, etc.?

Kleypas: At Jordan Hare Stadium, we use six of the Nelson SR100 Big Guns to irrigate. The guns are located on the 50-yard lines and in the corner of each endzone. We use a Rainbird ESP controller and a Berkeley centrifugal pump to boost the water pressure to 100 psi.

The irrigation system at our women's soccer field has a combination of big guns and pop up heads. Four Nelson Big Guns are located down each sideline. We also have two rows of Rainbird Falcons running down the center of the field. The soccer field is a competition and practice field so with the added traffic, the pop-up heads allow us to irrigate the high traffic areas without watering the entire field.

The rest of our fields have the typical pop-up rotor systems equipped with Rainbird ESP controllers. In the past, we had Toro, Hunter, and Rainbird heads at our facilities. We are in the process of converting all fields to Rainbird systems. Any new facilities have Rainbird systems written into the specifications.

DePaepe: We have underground irrigation systems for our football, soccer, and track facilities. They are all permanent systems of pvc and permanent clocks. We use Toro Network 8000 for clocks and Hunter valves with heads 90% being I-40s.

Mefford: We have automated irrigation systems on all of our fields. On our baseball, softball, and soccer fields we use a basic block system set-up. On our football practice fields and at our football stadium we



use automated cannon systems. The cannon systems are unique because each cannon is wired to a valve that allows us to set times and water the fields in the evening and early morning hours while no one is around.

Also, since the cannons are placed on the perimeters of the field we don't have to worry about irrigation heads being a safety issue, and we don't worry with water breaks in the field of play. Moving the water cannons takes very little time and we have built pull carts for easy transport and storage.

Bevenour: We have an underground system on our sand-based, multi-purpose field. The field is used by men and women's soccer and women's lacrosse for both practice and matches, and for intramural flag football, soccer, and softball. We use a Kifco water reel and above ground portable piping on our women's field hockey field and another multi-purpose field (football and soccer practice and intramurals).

McDonald: We have mostly Toro product systems. Our baseball and track infield (both native soils) has Toro 640 heads for the main field areas, Irritrol CR 500 heads for grass in front of dugouts and behind homeplate, and Toro 570 heads in bullpens. Baseball has 14 360s, 4 four 238s, four 192s, 19 180s (skinned area included), two 90s, 13CR500s, 24 570s, 12 zones and five quick disconnects. Track infield has 10 360s, 14 180s, four 90s, five zones, and four quick disconnects, Richdel 214 & 216 valves, and Irritrol controllers at all sites.


Our softball field (native soil) and soccer fields (1 native soil, 1 sand field) has Toro 640 heads for the main field areas, Toro 700 heads in stadium areas, and Toro 570 heads in landscape areas with Irritrol 100 series valves. Softball heads include five 360s (one behind the mound area), three 192s, 14 180s, (skinned area included), 24 700s, 12 zones and three quick disconnects. Soccer, the two main fields have 63 360s, 18 180s, 12 zones, and three quick disconnects. Outside field/stadium areas we put out hand sprinklers.

Salmond: All of our underground irrigation systems for baseball, softball, football practice field and soccer/lacrosse fields are ran by a Rainbird clock, with Toro valves and Toro 640 irrigation heads. On Ryan Field, we have a Toro LTC controller, with Toro valves and Toro 640 irrigation heads. We use a Kifco irrigation wheel with a booster pump to run over our Fieldturf field to keep the crumb rubber particles in place and for any rinsing and cleaning of the Fieldturf system. We use quick coupler valves located every 20 yards apart to water the sides of the field that the Kifco can't reach.

How do you inspect and maintain each system?

McDonald: We do visual inspections during a syringe cycle of our systems every other week depending on weather conditions. On the sand field during dry/hot conditions, we check weekly. We fix nozzles, gaskets and leaks as needed.

Kleypas: Maintenance is very simple. Having no pop-up heads on the playing surface dramatically reduces maintenance. It is comforting to watch a game without worrying about injuries associated with irrigation heads. With big guns, you never have to raise or lower heads to the existing soil level. We have pressure gauges located on each gun to check operating pressure. Depending on the time of day, the operating pressure will fluctuate between 90 to 110 psi. The only other maintenance




NATURAL SOLUTIONS

To Water Quality Problems


AT OTTERBINE, we know that water quality is as important as aesthetics. We offer a complete line of fountains and aerators ranging from 1/4HP to 25HP, meeting the needs of virtually everyone.

OTTERBINE AERATORS:

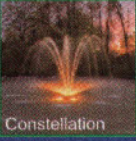
- ◆ Reduce Algae, Odors, and Discoloration
- ◆ Deter Insects and Insect Breeding
- ◆ Have the Highest Pumping Rates in the Industry
- ◆ Come With an Industry Best Warranty




Phoenix



Sub-Triton




Constellation



For more information contact us at www.otterbine.com or 800-AER8TER!


Fill in 131 on reader service form or visit <http://oners.hotims.com/9134-131>




KORO
BRILLIANT INNOVATION
BUILT "SPORT" TOUGH

TOPRAIN - Silt drainage made easy
• Three (3) sand filled trenches, 1.5" w x 8" d at 20" oc.

SALES & CONTRACT SERVICES



RECYCLING DRESSER - aerate 7" deep
• Topdress your own root zone in one pass, no more plugs!



FIELD TOPMAKER - strip turf, mulch & load in one pass
NEW! VERTICUT REEL AVAILABLE

Dealership opportunities

North American Distributor
GreenONE Industries www.korosystems.com
888-KOROUS (567-6872)

REVOLUTIONIZING THE SPORTS TURF INDUSTRY

Fill in 132 on reader service form or visit <http://oners.hotims.com/9134-132>

is to periodically check the radius of each gun to ensure that we are obtaining proper coverage. Using 1-inch nozzles, each gun averages around 280 GPM. This flow rate produces an application rate of 1.75 in/hr.

Salmond: Inspection is daily for leaks in irrigation heads in the field by any one of our grounds staff and during water use for proper irrigation head performance and coverage. Inspection of main lines and irrigation controllers is ongoing throughout the growing period from March until shut down in November.

DePaepe: Because of our arid climate, during the growing season we regularly go through each zone (at least once a month) to make sure all heads are working properly. We will check a problem area as soon as it arises, which doesn't take long to see in the dry air. We do on occasion have a problem with heads or zones and will hand water to get us through the day without letting dry spot take hold.

Mefford: In the spring when we bring our systems up, we visually inspect each system. We like to go through each zone and check individual heads for damage that may have occurred through the winter months. We try to service our water cannons during the winter months. For

safety purposes, we also like to check for heads that need to be lower or raised in the early spring. We like to use rain gauges in the spring to check the consistency of each system. We like to visually inspect each system at least once every couple of weeks throughout the growing season, and we daily monitor turf conditions that may show signs of system failure. We make most of our own repairs in house, but do contract out new installation projects and major repairs.

Bevenour: The Kifco and piping are inspected when put into use and transported from field to field. Visual inspection to make sure they are functioning properly when in use is the easiest way to catch any problems that need attention. In the winter, the Kifco is drained and pipe disconnected and the pump is filled with antifreeze.

Visual inspections are done on the underground system once a week to make sure the system is working properly. Heads, valves, and electrical components are adjusted or changed as needed. Other than waiting for a washout, the pipes are not checked for leaks.

How do you schedule water use?

Salmond: Water use is scheduled on evapotranspiration rates, weather patterns and rain and around all of our athletic events throughout the year.

Kleypas: Water usage is based on the deep and infrequent theory, with the only exception being during overseeding. We try to grow a deep, dense root system. We check the bermudagrass for foot printing before turning on the irrigation. With all of our fields, we believe that monitored stress results in a stronger, more durable playing surface. By watering deep and infrequently, we strive to produce a field that will withstand the traffic applied throughout the football season.

We follow the same deep and infrequent program on all fields. Heads are periodically checked to make sure heads are level and running properly. Station run times are based on results from a simple distribution uniformity test. A catchment test will show long to run the irrigation to obtain the desired amount of water.

DePaepe: Every afternoon, we determine what fields need water and how much based on the events we have scheduled, where we are

in our fertility program, the evapotranspiration rate for the current day, and the upcoming weather forecast.

Mefford: With bermudagrass fields, we like to keep all of our fields on the dry side. When we do water, we try to water heavy, especially on our sand-based systems (practice football fields and football stadium). We try to

follow the rule of deep and infrequent watering. We try to stay away from light watering except for times when we are establishing overseeded rye. This is really the only time that we water light.

The deep and infrequent rule has made a positive impact on root depth and turf strength. Our cannon systems on our football fields are great for this concept because they are able to put out a lot of water in a short period of time.

Bevenour: Water is scheduled by the type of field, time of year, maintenance schedules, field stresses, type of irrigation, and need. Our sand-based field, because of its high use and demand for a quality surface, is irrigated with varying schedules from March through October, whereas the field hockey field is left to Mother Nature outside of the hockey season.

On a side note, irrigation systems have been dropped from four different field projects I have been involved with over the past nine years. The main reason for this is cost savings on the final price of the project.

McDonald: Water scheduling depends on upcoming forecasts, current conditions of the fields and on going maintenance practices. Some soil probing, but if the field starts turning grayish tint we water that night. We are looking into the new technology of the ET rate controllers for more consistent and effective watering. ■

HAVING NO POP-UP HEADS ON THE PLAYING SURFACE DRAMATICALLY REDUCES MAINTENANCE. IT IS COMFORTING TO WATCH A GAME WITHOUT WORRYING ABOUT INJURIES ASSOCIATED WITH IRRIGATION HEADS.