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## *Smarter* irrigation for sports turf maintenance

By Laura Cochran

**A** properly designed irrigation system is necessary to keep most sports field turf in beautiful, healthy condition. However sports field managers are often faced with tight maintenance budgets, watering restrictions, playability concerns, and unique design considerations that can make irrigation a challenge. But more efficient irrigation products can maintain safe, beautiful fields with less water. Both rotating spray nozzles and pressure regulating rotors can be used to improve an irrigation system, so it's important to understand how these products work and how to effectively integrate them into an irrigation system with minimal hassle and expense.

In the past, rotors were lauded for better use of water and more even coverage. Conventional spray nozzles, on the other hand, are known for their shorter radius, high precipitation rate and large gallons per minute (GPM) requirements. Fixed arc conventional spray nozzles are an improvement over variable or adjustable nozzles because they have matched precipitation rates (MPR) across sets and patterns, allowing users to mix and match different nozzle patterns and radii while maintaining consistent watering.

Rotors are most often used on sports turf, but many fields need sprays to irrigate common areas beyond the playing field. For example, the small turf areas outside the baseline of a baseball field are typically too small for rotors



to be very efficient; rotating spray nozzles are an excellent alternative. Rotating spray nozzles are also a water-efficient choice for irrigating smaller landscaped areas outside the stadium or ballpark.

While conventional spray nozzles with MPR are still a better choice over variable arc nozzles for improved water efficiency, new rotating spray nozzles take that concept to the next level. Rotating spray nozzles also feature MPR and are more efficient than conventional spray nozzles due to their lower precipitation rates and improved close-in watering. Additionally, they cover larger areas with radius ranges above 15 feet. Combined, these nozzles are an ideal solution to expand spray areas, save water and improve turf life and health.

### Precipitation rates

It is important to pay close attention to precipitation rates because they determine how much water is distributed by each nozzle over a given period of time. Generally, the lower the

precipitation rate, the less water wasted through over-watering and run-off. More specifically, low precipitation rates allow time for water to percolate into the soil and reach roots before running off or evaporating. Through this practice, they promote better root growth and result in healthier plants and landscapes.

For example, conventional spray nozzles' precipitation rates are higher than those of rotors or rotating spray nozzles. If run times are not programmed properly, or you if have "clayey" soil, high precipitation rates can cause flooding, especially if a product with a high precipitation rate is installed on the same zone as rotors. However it's also important to select products with precipitation rates that meet watering windows; precipitation rates that are too low can increase the amount of time required to water each zone.

Rotating spray nozzles fit on standard spray heads like conventional spray nozzles. They are most often recognized by their individual rotating streams. A rotating spray nozzle covers larger areas


(greater than 15 square feet), distributes water more evenly and provides better close-in watering at the head than conventional sprays. The combination of these features eliminates dry spots, saves water and reduces need for maintenance. The lower precipitation rates of rotating spray nozzles range from 0.4 inches/hour to 0.6 inches/hour, depending on manufacturer. This is a significant difference when compared to conventional spray nozzle with rates ranging from 1.58 inches to 2.08 inches/hour depending on pressure.

It takes only up to 0.8 GPM to cover the same area—less than half the amount required by conventional spray nozzles at 1.85 GPM. And because they have better distribution uniformity due to their individual rotating streams and larger water droplets, rotating spray nozzles take less water to maintain healthy turf than traditional spray nozzles. Not only do rotating spray nozzles provide better coverage, they also save money through the installation of fewer heads that can cover areas that are the same size or even larger.

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Additionally, you can save money on valves and labor through larger spacing and the installation of fewer spray zones than in the past. Precipitation rates for rotating spray nozzles can vary slightly from manufacturer to manufacturer, so pay close attention when selecting nozzles for a new install or system upgrade. In

parts of the country where small zones are the rule and water windows are tight, even a slightly higher precipitation rate can have a noticeable impact.

While their water-saving benefits are extraordinary, low precipitation rates also make rotating spray nozzles a great tool for irrigating

not only sports turf, but also slopes and hard-soil landscapes where water is often lost to run-off or evaporation. Although sports fields are designed with very minimal slope, most do contain at least a bit of an incline, which can make a big difference in the type of irrigation products that should be incorporated.

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## You can save money on valves and labor through larger spacing and installing fewer spray zones

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For example, even a seemingly negligible slope of 0.5% on a baseball infield can cause irrigation water to puddle if the precipitation rate is too high. Plus, soil compaction caused by the repeated pressure of athletes running on the turf can make fields particularly susceptible to "ponding." Fortunately, the technology behind the nozzle's rotating streams provides more even distribution across the entire pattern than conventional spray nozzles. This eliminates over-watering while still ensuring that the driest areas are sufficiently watered.

### Making the right choice

Many turf managers are puzzled by the differences between the rotating spray nozzles offered by different manufacturers. The primary differences between brands typically lie within the precipitation rate and cost. Rotating spray nozzles were an expensive technology in the past, which discouraged widespread upgrading to this water-efficient, money-saving technology. However, as rotating spray nozzle technology





has become more widely used and accepted, prices continue to trend downward. This reduction in price offers sports turf managers the ability to incorporate the use of more affordable water-conserving products and protect a precious resource, a huge advantage for community sports fields that are often under scrutiny for their irrigation practices.

While precipitation rate and cost are important considerations when selecting a rotating spray nozzle for your particular application, so is design flexibility. Some rotary nozzles and rotors are designed to have the same precipitation rate (0.6 in/hr), so a single zone can be designed for areas covering 13 to 35 feet. This enables your field to benefit from the strength and performance of a rotor at the larger radius, enhanced by the lower cost and simplicity of sprays with rotating spray nozzles at the shorter radius.

The significance of this type of design flexibility becomes very apparent considering that some of the most efficient rotors on the market today can actually reduce water usage by 15-45% over their less efficient counterparts. When combining this type of rotor technology with rotating spray nozzle technology, sports turf managers can experience a significant savings on their water bills.

These savings are realized through using pressure regulation at the

rotor's stem, commonly found in commercial grade sprays. Pressure regulation at the stem (often referred to as "PRS") saves water by eliminating head-to-head pressure variations and misting due to high pressure while improving nozzle distribution uniformity by operating the nozzle at its optimum pressure. Information on these rotors and a variety of other water-saving irrigation products has been compiled by Smart Approved WaterMark, an Australian program dedicated to guide users of irrigation to choose products providing the highest level of water efficiency. For more information, visit [www.smartapprovedwatermark.com](http://www.smartapprovedwatermark.com).

Using water intelligently will continue to be of utmost importance as natural resources grow increasingly scarce and the general public continues to focus on environmentally friendly living. Switching to rotating spray nozzles for small areas around your field can make your entire system perform more efficiently through lower precipitation rates and the even distribution of rotating streams. With lower maintenance and installation costs through ability to zone with rotors, rotating spray nozzles can save time and money while improving the health, beauty and safety of your turf. ■

*Laura Cochran is rotary nozzle product manager for Rain Bird.*

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# Overseeder helps biodiversity, cuts chemical applications

By Eric Schroder

In response to users who wanted a seeder that could follow contours and lessen play interruptions, Turfco Manufacturing introduced the TriWave machine several years ago. According to Scott Kinkead, the company's executive vice president, "Managers needing to increase the biodiversity of their fields are finding that this machine gets the seed into the slits more effectively than broadcasting seed and hoping the athletes will cleat it in."

"As one manager in New York State told me, he would broadcast seed and then stand around watching birds have a feast on the seed," he says.

Kinkead says sports turf managers are also using the machine because of restrictions on chemical applications. "If they let the bare spots on the field go to weeds it's almost impossible for them to apply the chemicals to get rid of them. They have been looking for a more effective seeding process than what was available," he says.

John Burns, crew chief for the Parks Department in Clarence, NY, first used a TriWave last spring during a soccer field renovation. "We had very little grass on a very hard field and this machine sliced and laid the seed in," he says. "We used a crisscross pattern and the grass came in good.

"Since we bought and began using it on our fields, my seed costs are one-tenth what they were previously," Burns says.

Kinkead says the units' patented WaveBlade technology and seed delivery system addresses customers' needs for more effective seed placement with reduced turf damage. This technology uses powered, counter-rotating blades to create clean slits for improved seed-to-soil contact while minimizing turf disruption. The seed delivery system places seeds directly into slits without waste for increased germination, he says.

Dr. Dave Minner, Iowa State turf professor, said in his "Q&A" column in our April 2008 issue (p.50) that it's important to seed your field from mid-August through early September (for cool-season turf) and to use a solid tine aerifier or non-aggressive seeder to punch the seed into the ground. Avoid damaging or loosening existing turf.

Minner continues to study seeding rates and estimates that 50% of seed applied typically never makes a successful plant. "No wonder that higher than normal seeding rates are needed before gains in turf cover are realized when seed is applied during traffic," he says. ■



Before and after seeding with TriWave in New York State





## Topdresser for ProGators

Specifically designed for the John Deere ProGator 2020 and 2030 utility vehicles, the TD100 Top Dresser's hopper is made of galvanized steel. For even distribution, a fixed-speed nylon/polyester

cordless conveyor belt moves material under the full-width metering gate and through a rotating brush for even distribution. The hopper capacity is 12 cu. feet full or 19 cu. feet heaped. The rated capacity is 1500 lb., and the spreading width is 56 inches. The opening adjusts from 0 to 3 inches.

### John Deere

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## "Triple" GreensGroomer

"Triple" GreensGroomer uses three single units ganged together to achieve an effective brush width of 17 ft. All units rise and lower simultaneously but may be used independently as well. Knocks down dew and stands grass up before mowing to eliminate grass clumps. Standard rear hitch on each unit makes transport through narrow areas.

### GreensGroomer

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### Turfco Manufacturing

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## Easy Spread

The new hydraulic powered Easy Spread from Redexim Charterhouse provides easy one-man operation and large capacity topdressing. This machine can load itself and can spread up to 80 tons a day without the operator leaving the cab.

### Redexim Charterhouse

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## New MultiSpread model

Earth & Turf LLC introduces its new MultiSpread Model 320, a 1-cubic yd. topdresser with exclusive, wide-spread beater. Spreads topdressing materials, infield mix, calcined clay, crumbed rubber, and grass clippings. Two-wheel ground drive with 26 x 12.00-12 turf tires insures easy pulling by 20-HP tractors. Prices start under \$5,000.

### Earth & Turf Products, LLC

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## New turf tool

The turf float, the third piece of equipment, can save turf managers significant time by eliminating the process of

harvesting aeration cores. At the same time, a tractor pulling this device can level turf on athletic fields and golf courses by eliminating low areas in the turf, such as "puddles" and "birdbaths." It does this by filling them with ground-up aeration cores and top dressing by "floating" the turf after aeration. The turf float should also be used after sod installations to help level the new turf on athletic fields and golf courses. The g2 turf tools equipment is currently priced from \$1,450 to \$7,450.

### g2 turf tools, Inc.

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## Field Maintainer by Kromer

The B200 is designed to be the only machine you'll ever need to maintain all your natural turf fields. The B200 is a self-propelled riding unit that applies dry lines, wet lines, grooms, paints, conditions, sprays and will cut and paint a line at the same time. Available with 32 attachments making this the only machine on the market that "does it all."

### Kromer Company

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## All-new Groundsmaster rotary mowers

The Toro Company introduces the Groundsmaster® 5900 and 5910 rotary mowers, which are all new from the ground up. Equipped with a 99-hp Cummins Turbo Diesel engine, the Groundsmaster 5900 series can mow an acre in less than 5 minutes, or more than 13 acres an hour. The mowers come standard with a four-way adjustable seat plus an air ride suspension. The seat-mounted ControlHub offers easy fingertip controls.

### The Toro Company

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## Commercial-duty spreader attachments

TurfEx, a new product division of TrynEx International, introduces its line of commercial-duty spreader attachments. Designed to mount on a multitude of service vehicles, such as utility tractors, riding mowers and ATVs, the new spreaders provide consistent, even distribution of anything from seed to fertilizer. They can also spread ice melt for winter maintenance applications.

### TrynEx International

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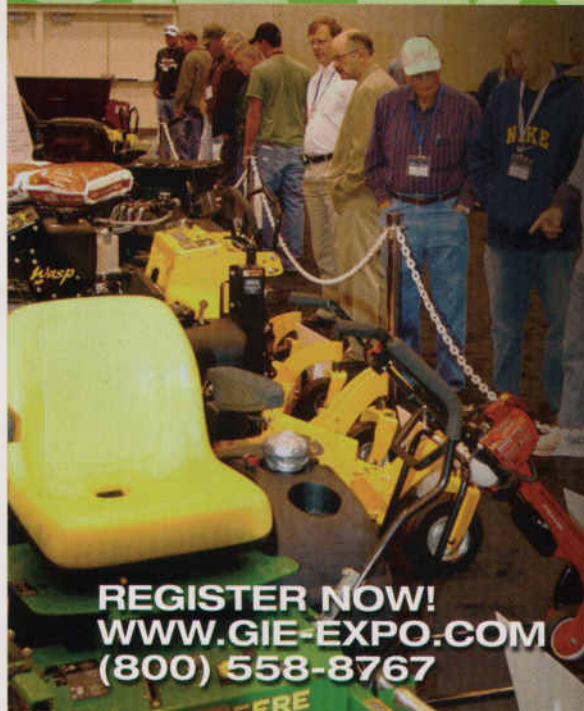


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# Wiggins' showcase wins Schools/Parks Softball Award

**J**im Wiggins is a fine example of what it means to be a sports turf manager today. Committed, communicative, community-minded, Wiggins and his full-time assistant Matt Freese won the 2007 STMA Softball Field of the Year in the Schools/Parks category.

The athletic grounds manager for the Tomball, TX school district, Wiggins previously was honored by the STMA with its 2005 George Toma Golden Rake Award, which is given to a member who demonstrates superior performance on the job and in community service.

Highlights from his award entry and a short interview with the winner follow:

"We lost our Sand Pro last spring and to improvise infield preparations. We chose to use a Deere 255 utility mower with power steering and custom-built a rack to hold all our homemade brush and nail drags. This worked nicely. The new mower has proven efficient for us.

"Daily maintenance and a new tarp helped immensely during our 2007 season, mostly by reducing the number of rainouts. We work closely with

the coaching staff and team and by using combined efforts; we can get the tarp on or off the field in minutes. The team members help and take pride in our field."

**ST:** What's most important piece of equipment or product in your program?

**Wiggins:** I have two pieces of equipment that are of the most importance. One is our Hunter sprinkler system with an ICR remote control unit. The remote is a super time saver during my daily tasks, audits, aerification, and water schedules and to isolate problems out on the field.

The second is my Graco FieldLazer. In combination with Pioneer paint, we do all of the field painting and graphics work with this machine on all of the complex fields. It is a very versatile and lightweight machine that does not exhaust you after a day's use.

**ST:** What are your biggest challenges and how do you approach them?

**Wiggins:** Water prices keep escalating but we [must maintain] field playability and safety as our biggest concerns. Budget cuts and money issues in a school district are big hurdles. I have tried to become a better manag-

