

A New Sprinkler for Your Bunker-Face Blues

EDITOR'S NOTE: *We can't keep wasting water to try to keep steep bunker faces as green as the rest of the golf course. Here is a new sprinkler version that can help apply water efficiently to hard-to-water areas like bunker slopes.*

By Kevin Scott

Ten years ago, pop-up spray heads around bunkers were about as common as a hole-in-one. As golf course design evolved over time to incorporate visually striking bunkers with steep, sodded faces — and as golfers expect superior turf conditions on these sloping faces — a need developed to install supplemental irrigation systems around bunkers. Hand watering, sometimes supplemented with an application of moisture-retaining pellets, wasn't proving sufficient to combat the sun-fried, wind-struck, dried-out bunker face.

Traditionally, irrigation systems equipped with spray heads at the front line were installed to cure bunker face blues. This method, however, seemed to harvest even more maintenance problems; sprays have a high application rate and emit water too quickly for soils on slopes to absorb, leaving inadequate amounts of moisture for the sod, undulating runoff, and rendering soak times ineffective. Sprays are also not ideal for micro-managing bunker faces due to their inability to maintain uniformity during arc adjustments. With spray heads installed around bunkers, water is being wasted and work crews are still employing the hose-in-hand method to water those

bunker faces that just don't seem to stay green.

A new genre of sprinkler is popping up on golf courses across the country to address the problem: Multi-stream, multi-trajectory rotating (MSMTR) sprinklers are now being installed on problem areas such as bunker faces, slopes, tee boxes and landscaped areas surrounding greens. Currently, only two companies offer MSMTR sprinklers: the Walla Walla Sprinkler Company's MP Rotator, and Rain Bird's Rotary Nozzle.

MSMTR sprinklers have only

fit in Rain Bird spray heads). These nozzles rotate while throwing several powerful streams of water, and deliver water at a one-third the rate of spray heads, allowing the soil to more-efficiently absorb the emitted water. With high uniformity and the capability for longer soak times, MSMTR sprinklers elicit virtually no runoff or standing water, effectively fight wind with stream technology, and can cover micro problem areas like bunker faces with easy arc and radius adjustments that maintain the application rate and uniformity (Rain Bird Rotary Nozzles

have variable fixed arc nozzles, while MP Rotators have a fully adjustable arc on any model).

Compared to spray heads that average 50 percent distribution uniformity (DU), rotary nozzles are between 70 to 80 percent efficient, which is commensurable to the efficiency of golf rotors.

As irrigation efficiency and water conservation migrate to the forefront of



With multi-stream, multi-trajectory rotating technology, the MP Rotator (shown here) delivers water at one third the rate of spray heads which allows the tight soil on bunker faces to efficiently absorb the water it needs--producing a healthy, green stand of turf. This technology has gradually started to infiltrate the Florida market.

recently breached the Florida market.

“Originally, our business focus has been on the west coast because of the water situation and climate,” said Chris Wright, regional sales manager for MP Rotator. “This technology has gradually started to infiltrate the Florida market due to new distribution outlets and its reputation as a water-efficient sprinkler. There is a reason why water purveyors have made this sprinkler the most rebated sprinkler in America.”

An MSMTR sprinkler is basically a small rotor that can be retrofitted to any pop-up spray head body (MP Rotators have both male and female thread models, while Rotary Nozzles

Florida superintendents' challenges due to record-breaking drought conditions, these sprinklers have been documented to save approximately 30 percent more water over conventional spray heads.

Harold Wills, irrigation superintendent at Orange Lake Resort in Orlando, oversees the irrigation at the 1,200-acre resort, which includes two 18-hole and two 9-hole golf courses. In 2006, when Orlando received only 34 inches of rainfall and entered into a drought worse than previously experienced in 1932, golf courses and commercial properties were charged to conserve water. Wills decided to work with a water auditor

and create a five-year strategic water conservation plan for the irrigation systems throughout the resort. When researching what water-efficient products to install, he discovered the MP Rotator.

"I have the MPs installed on some of my tee boxes and greens," Wills said. "Right now we have 200 installed, and are working with a water auditor to build a case for installing MPs throughout the whole resort and all necessary parts of the golf courses. The MP's scheduling coefficient is like God's rain. And God's rain is perfect."

While he currently does not have MP Rotators installed around bunkers, he is interested in pursuing the option because of the superior coverage his greens and tee boxes are currently receiving from the MPs.

"Compared to the sprinklers we used to install, the coverage is better due to the MP's ability to apply water uniformly, and adjust to corners while

maintaining a matched precipitation rate," Wills said. "Water is not being thrown everywhere and misting away into thin air. In the last year, I have only had to fix one MP. With the old sprinklers, I was out there fixing them every week."

MSMTR sprinklers, compared to sprays, can also throw further and cover more ground while irrigating at a significantly lower flow rate.

For those superintendents who already have supplemental irrigation systems around bunkers, a switch to these sprinklers is easy, but if no system is installed, the labor costs involved in installing a system can be substantial. Because of the low flow, the irrigation design can have more heads per zone, thus fewer zones are needed, saving labor and material fees for new installation.

Additionally, MSMTR sprinklers will significantly reduce many of the costs typically associated with spray heads or

hand watering. The labor will prove to pay for itself over time.

It is important to note that MP Rotators and Rotary Nozzles have similar functionality, but their specs differ. For example, the MP Rotator has an application rate of 0.45 in/hr, while the Rotary Nozzle delivers 0.75 in/hr. Check the manufacturer's specifications on each of these products before selecting which one is better-suited for your specific application.

As water purveyors mandate stern watering restrictions and strictly monitor water use on golf courses, several water-efficient technologies have been introduced, in addition to MSMTR sprinklers, being employed by superintendents to save water — and avoid being fined.

"I recently learned that three golf courses in my area were fined \$10,000 each for going over their water-usage allotment," said Wills. "We don't want to find ourselves in that situation."



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USGA Update 'Nobody Knows, How Dry I Am'

By Todd Lowe

Golf courses are singing the blues as the drought continues. In fact, a light haze of smoke has wafted in on TAS visits lately. The smoke is not from roughs burning out, but from multiple wildfires throughout the region. Record low rainfall has caused phase II restrictions (30 percent reduction) throughout most of the region to be in effect, with some areas experiencing Phase III restrictions (45 percent reduction). The water management districts are to be applauded for working with golf course superintendents and allowing them to decide when to irrigate; previous restrictions limited use to certain



Bermudagrass can survive extended periods of drought, but becomes brown as it goes dormant. Photo by Todd Lowe.

week days. After several meetings with concerned golf course superintendents, it was decided to allow courses to irrigate by a reduced percentage than their normal allotment.

Golf courses use a small percentage of water compared to other users, especially homeowners, and can easily monitor and reduce use as needed.

Enforcing restrictions on other groups is much more difficult for the water management districts, as it is difficult to effectively monitor them. Golf courses report monthly on their usage, and restriction enforcement is a much easier task. Most golf courses truly are stewards of natural resources as they are a refuge for a variety of

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The good news for the water reductions is that bermudagrass is drought tolerant and goes dormant until regular rainfall occurs. The bad news is that lush, green playing conditions cannot be sustained in such conditions. Localized dry spots initially occur, causing a leopard-like pattern of brown and green turf and, eventually the entire area becomes brown.

Water restrictions prioritize water use to primary play areas, with putting greens receiving highest priority. Teeing grounds are next, with fairways (particularly landing areas) ranking third. Roughs and non-play areas (like driving ranges) receive lowest priority among playing surfaces and should receive the least amount of water. As a result, many non-play areas and roughs are in various stages of drought dormancy on many golf courses at this time.

Several guidelines for managing drought-stressed turf were listed in the previous regional update and it is recommended to implement these important strategies. Also, normal cultivation practices like core aeration and verticutting on tees, fairways, and roughs may need to be postponed until normal rainfall occurs and water restrictions are lifted. Having some flexibility in scheduling is important to ensure that these necessary cultural practices are implemented at a later date.

Unlike residential properties that are restricted to set times and days of the week for landscape irrigation, golf courses are required to reduce consumption by 15 percent and 30 percent for Phase 1 and Phase 2 restrictions respectively, based on their water-use permits. While warm-season turfgrasses such as bermudagrass and seashore paspalum have very good drought tolerance, having to manage with 30 percent less water will have an impact, especially on aesthetic characteristics. At courses in Central to South Florida where large-acreage, winter-overseeding programs are



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conducted, avoiding a rapid transition also will be a challenge. Appropriate and good quality overall course conditioning can still be provided when Phase 1 and Phase 2 water restrictions are in effect.

The following is a review of some basic agronomic principals for managing turfgrass during a drought:

Control Traffic. Develop a traffic-control program if one is not already in place. Heavy traffic on grass under wilt/drought stress can cause permanent damage. Restrict cart traffic to paths, minimize traffic on roughs to the extent possible, do not allow crossover of the "90 degree rule" and encourage walking. The less traffic, the better. Drought-stressed turf will not tolerate traffic very well.

Raise Mowing Heights and Mow Less Often. After all, the grass should be growing more slowly.

Use Plant Growth Regulators. Where appropriate, apply or continue using growth-regulating chemicals. These products can reduce water use rates by as much as 30 percent. PGR use can improve root development and conserve soil moisture through top growth reduction.

Pest Management. On a positive note, insect (mole crickets) and disease activity is greatly reduced during drought conditions. However, infestations of plant parasitic nematodes can further compound drought-stress problems and the need to conduct nematicide treatments. Herbicide treatments should be performed with extra care anywhere the turf is drought stressed.

Fertility. Defer fertilizer applications, especially granular, readily-available nitrogen materials until the weather moderates. Guard against stimulating too much growth. Sprayable forms of fertilizers can be beneficial when applied in a timely fashion. Maintaining adequate potassium is helpful for increasing the turf's stress tolerance.

Irrigation Water Quality. Regardless of the source, check the irrigation water for sodium/salt buildup. In several locations, salt intrusion is a growing

PLANTS OF THE YEAR

Launched in 1998, the Florida Plants of the Year program links growers with garden enthusiasts by designating plants friendly to each of Florida's three geographic regions as Florida Plants of the Year. For 2007, five plants were selected by a jury representing different facets of the state's diverse nursery and landscape industry. The Florida Nursery, Growers & Landscape Association (FNGLA) is pleased to announce the following plant as one the program's 2007 inductees:

Galphimia gracilis

Common Name: Shower of Gold

Zones: North as a perennial, Central & South

Mature Height and Spread:

Generally 6' x 4', but can vary

Classification: Shrub

Landscape Use: as hedge, mass, accent or foundation plant

Characteristics: A drought-tolerant, evergreen shrub with blue-green foliage, *Galphimia gracilis* is loaded year-round with yellow clustering flowers growing



Use as a hedge, mass planting or accent plant. Photo credit: Grandiflora

up to an inch in diameter.

This plant was formerly assigned the genus *Thryalis* and many times is referred to as such.

The plants are long blooming, easy-to-grow, and fast growing, thrive in full sun, and like ample room to grow. Branches are brittle, so use in areas where traffic is minimal. To maintain a great-looking plant, prune 1-2 times annually.

Possible Insect/Disease Problems:

In south Florida susceptible to powery mildew

Propagation: by cutting or seed

The Florida Plants of the Year program is administered by FNGLA: 800-375-3642; www.fngla.org



concern. Evaluate the irrigation system as inefficient operation wastes water. Evaluate irrigated area and determine which portions of the course are most important to play, i.e. up the middle from tee to green.

Renovation/Reconstruction.

Rethink renovation or reconstruction projects. In general, do not disturb the turf unless you have the ability to irrigate these areas. Be patient, wait for better weather, and monitor district and local regulations covering renovation and turf establishment.

Landscaping. Trees and other plantings also need attention during drought. Some tree species require considerable amounts of water and may slowly go into decline during drought. Assess tree conditions regularly. Periodic deep soaking may be necessary

to save desirable trees.

Remember that all golf courses represent the turfgrass industry and the game of golf. Respect irrigation regulations and requests for voluntary conservation. While individual conditions vary, we are in a serious drought, and unfortunately, no relief is in sight. Good luck and let's pray for rain.

EDITOR'S NOTE: *These guidelines are excerpted from John Foy, USGA Florida Region Director's USGA April Florida Regional Update mentioned by Lowe. Tropical Storm Barry which grazed Florida June 1-2 seems to have kicked off our traditional summer "wet" season. The moral of the story is that droughts will come again, so learn how to prepare for the next time and don't forget the lessons of the recent past.*