

# West Nile

**About one in 150 persons infected with the West Nile virus will develop a more severe form of the disease.**



ing confusion in educating the golfing community. Golfers are starting to ask questions.”

Hindahl says Oregon superintendents are mainly addressing standing water issues where they can. They also are keeping an eye out for dead birds, often the first sentinels of the disease. No one that he knows of is spraying pesticides, he says.

At Westfield Companies CC in Westfield Township, Ohio, about an hour south of Cleveland, the grounds team takes the threat seriously. West Nile virus has been present in Northeast Ohio for the past few years.

“We are in a rural area,” says superintendent Steve Numbers. “A health threat is a health threat. We have an obligation to be proactive. The safety and well-being of our members and guests are important to us.”

Numbers says he and his crew have found dead birds on the course. Dead birds also have turned up in neighboring Westfield Village. “We know there can be exposure,” he says.

While the Westfield course doesn't have any swampy or wetland-type areas, it does have small areas of woods and longer grasses that Numbers says the crew will mow down once or twice during the season. The courses' lakes and ponds are rather large and generally have a lot of air movement over them. Nine of the lakes have aerators that not only reduce algae but would prevent the occurrence of a mosquito breeding site. Standing water is not an issue, Numbers notes.

## West Nile at a Glance

According to the Center for Disease Control (CDC), West Nile virus has been commonly found in humans and birds and other vertebrates in Africa, Eastern Europe, West Asia and the Middle East. It had not been documented in the Western Hemisphere until 1999. It is not known where the U.S. virus originated, but it's most closely related genetically to strains found in the Middle East. The virus can infect humans, birds, mosquitoes, horses and some other mammals.

Most people infected with the West Nile virus (WNV) will not have any type of illness. The CDC estimates that

20 percent of people infected will develop West Nile fever, which has such mild symptoms as fever, headache, body aches and, occasionally, a skin rash on the trunk of the body and swollen lymph glands.

Symptoms of severe infection (West Nile encephalitis or meningitis) include headache, high fever, neck stiffness, stupor, disorientation, coma, tremors, convulsions, muscle weakness and paralysis. It's estimated that one in 150 people infected with the West Nile virus will develop a more severe form of disease.

Statistically, a person's risk of contracting WNV is low. In most areas where the virus is established, only 1 percent of the areas mosquitoes carry the virus. Less than 1 percent of people bitten by these infected carriers develop serious complications. The remainder exhibit flu-like symptoms or no symptoms at all.

Those at highest risk are the elderly and people with weakened immune systems. However, the CDC cautions that it's important for all people to protect themselves from mosquito bites to minimize the risk of infection.

For more information, contact [www.westnilevirusfacts.org](http://www.westnilevirusfacts.org).

The course did spray once last year prior to a junior tournament. The course contracted with the same company that sprays the Westfield Village to “fog” the South course where the event was played. “We felt that because of the high profile event and the timing of last year's outbreak that it would be money well spent,” Numbers says.

The issue of spraying pesticides vs. not spraying is a tricky one, particularly for courses where environmental and/or natural resource issues come into play.

At Sparrows Point CC in Baltimore, the grounds crew does what it can to eliminate

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**“There’s a great deal of sensitivity about the ability to treat waterways or anything near waterways with any sort of pesticide.”**

MICHAEL HINDAHL  
OREGON GCSA

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standing water and prevent mosquito infestation. However, because of the course’s proximity to the protected areas of the Chesapeake Bay, superintendent John Denholm does not want to put insecticides in water that could run off into the bay.

“I have one hole that is near sea level,” he says. “We are very flat here. We have water that attaches itself to the golf course and feeds into the Chesapeake Bay, and we have some tidal water areas that surround the golf course. If I put insecticides in standing water in the flat areas, they could move.”

Superintendents might face similar issues in environmentally conscious Oregon, Hindahl says.

“There’s a great deal of sensitivity about the ability to treat waterways or anything near waterways with any sort of pesticide,” he says. “There’s a limit to treatments that can be done under the law. There’s a real hesitancy to treat for fear of breaking the law.”

Tony Lasher, certified superintendent of The Resort in Welches, Ore., is facing such a problem. While the virus hasn’t struck the state, he wants to be prepared. But he admits he and his staff are “waffling” with respect to what kind of measures to take. They have expanded buffer/riparian zones that help with preservation of wild Coho salmon and steelhead (both

### Keeping Golfers in the Know

Superintendents across the country know the importance of making golfers aware of the hazards of West Nile virus and also the steps necessary to properly protect themselves.

“The educational component, trying to get the same set of information out to every golfer, is important for managing the situation,” says Michael Hindahl, an Estacada, Ore., golf course industry consultant and affiliate board member of the Oregon GCSA.

Many superintendents have included articles about the virus in monthly newsletters that go out to club members. Other courses offer literature in the clubhouse detailing the disease and prevention measures or post signs reminding them to frequently apply insect repellent.

“I think they are aware of the risk in general,” says Steve Numbers of Westfield Companies CC in Westfield Township, Ohio. “All we can do is educate them and seek to address what may be a potential hazard on the course.”

Numbers suggests that superintendents visit the Centers for Disease Control and Prevention’s West Nile virus information Web site where they can get reliable information about the mosquito life cycle and what they and their golfing clients can do to protect themselves.

And for golfers who don’t remember to take care of their own protection, the Westfield clubhouse does offer complimentary insect repellent for their use.

— Robin Suttell

### Mosquito Control

#### Tips to avoid mosquito bites

- Wear light-colored, long-sleeved shirts and pants, as well as covered shoes and socks.
- Use a mosquito repellent containing DET when outdoors. Look for “DEET,” “N, N-diethyl-m-toluamide” or “N,N-diethyl-3-methylbenamide” on the product label.
- If possible, limit outdoor activities at dawn, dusk and early evening when mosquitoes are most active.

#### Tips to discourage mosquito infestations

- Eliminate sources of standing water where mosquitoes will lay eggs. Remove, cover or drill drainage holes in items that can trap water. Common standing water areas/mosquito breeding grounds include:
  - flower pots
  - ponds
  - trash cans and recycling bins
  - holes or reservoirs in trees or stumps
  - puddles and ditches; and
  - bird baths
- Trim grass regularly.

SOURCE: CENTERS FOR DISEASE CONTROL & PREVENTION

endangered fish) habitats on the golf course.

“Unfortunately, this is also good habitat for the mosquitoes,” he says. But because of the endangered status of those fish, chemical pesticide treatments are out of the question. It leaves Lasher walking a fine line. The sensitivity regarding endangered steelhead and salmon tempers treatment options because of worries about potential runoff into the streams.

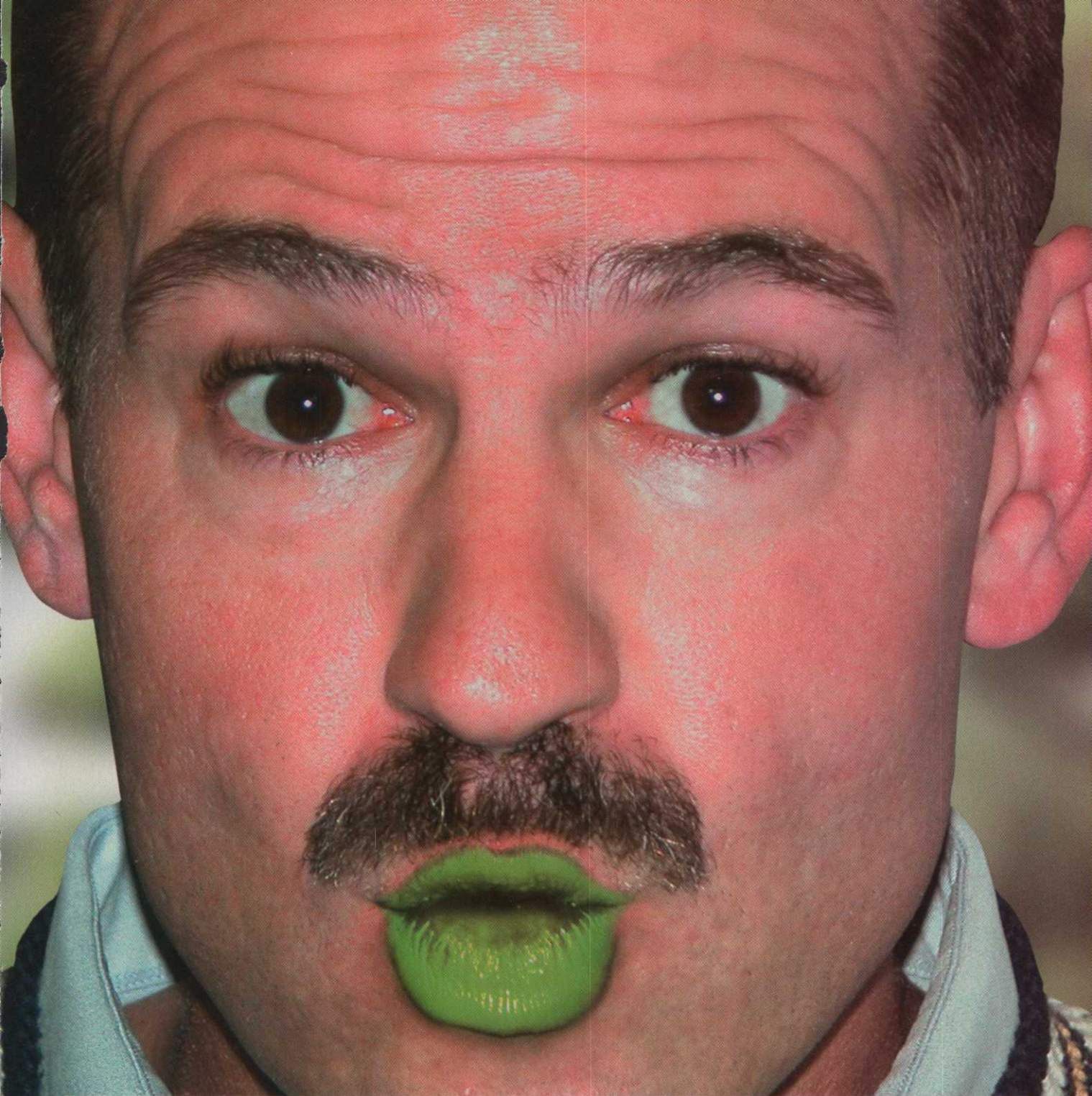
“We have not changed our practices, except to prevent standing water around our wash area and similar things,” he admits.

Balis says there are a number of organic or low-impact ways to eliminate mosquitoes, including bacterial larvicides, mosquito fish or natural pyrethrin, an organic compound taken from the chrysanthemum plant. “All of these can minimize the mosquito population,” he says.

Environmental restrictions might change the way superintendents approach prevention, but it certainly doesn’t mean they should ignore it, Hindahl says. ■

*Suttell is a free-lance writer from Cleveland.*





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# Hold Water

Superintendents conserve more water through wise irrigation

BY ANTHONY PIOPPI



**W**ell before the first bulldozer put its blade into the ground for the construction of Bay Club Mattapoisett, superintendent Jon O'Connor and the course's owners were thinking about water conservation for the private club.

It's not that Bay Club, located in the southeast corner of Massachusetts, has an irrigation supply problem. There is plenty of water. But O'Connor and the owners have still put a premium on conservation that will not only extend to the private golf course but also to the housing unit of the project.

With so many areas of the country either in a drought or having suffered through drought conditions the past few years, how to make the most of water is a priority. And with water shortages in many parts of the country

expected to worsen in ensuing years, learning how to do the most with the least is a talent almost every superintendent will need.

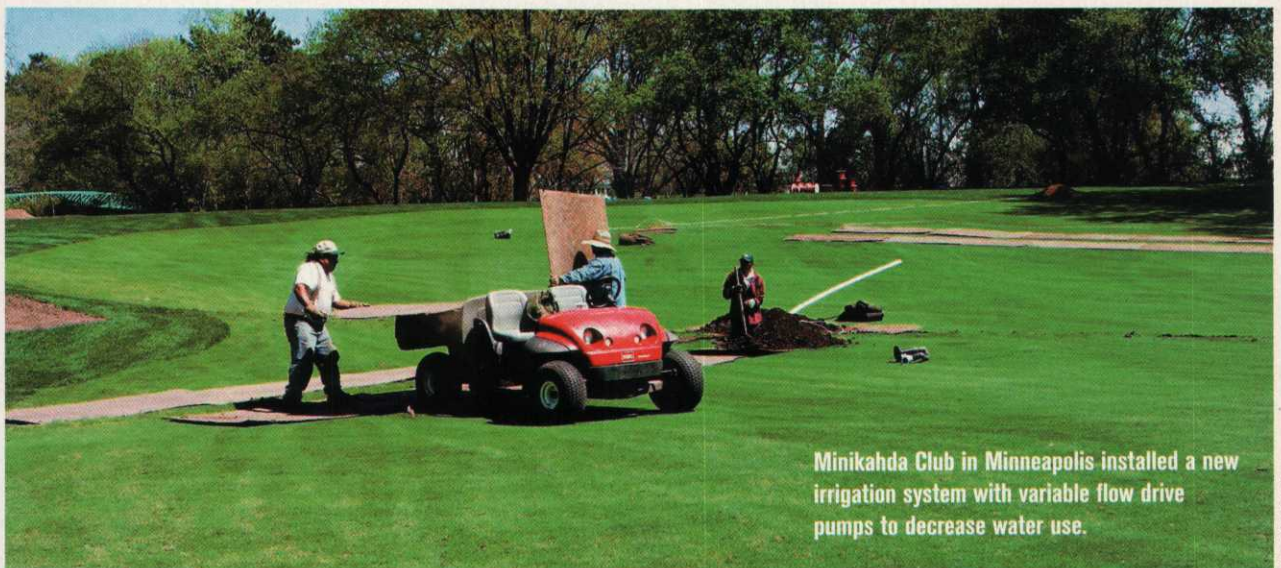
O'Connor is in an enviable position. Bay Club will have a state-of-the-art irrigation system with individually controlled heads and variable flow drive (VFD) pumps so that only the amount of water required is sent out to the golf course.

Ten percent of the greens mix will be of a porous ceramic material that efficiently catches water while allowing excess water to move through. It will also diminish localized dry spots that require hand-watering, according to O'Connor.

Once there is grass, O'Connor will use wetting agents and take advantage of the fertigation capability of the irrigation system.

"The goal is to have a firm, fast track," O'Connor says. "That's the way I've always pre-

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Minikahda Club in Minneapolis installed a new irrigation system with variable flow drive pumps to decrease water use.

THE TORO CO.



## Hold Water

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pared my golf courses. You can't provide that and have healthy turf without proper water management."

O'Connor will also be teaching that trick to the owners of the roughly 160 residential units that are part of the Bay Club. As part of the proactive water management, O'Connor will control when water is available to the homeowners, of which 99 percent are club members.

For instance, irrigation water will not be available during the heat of the day. Instead, home watering will have to occur when O'Connor decides. "It's going to create an inherent proactive water-use program," O'Connor says.

Although superintendent Jeff Johnson is not growing in a golf course, he is also adapting his water usage, thanks to a new irrigation system that also includes VFD pumps. The system was installed as part of the restoration work being done at The Minikahda Club in Minneapolis.

Since opening in the middle of May after a six-month shutdown, Johnson is using less water than before, using 1,200 individually controlled heads. The previous system had 675 sprinklers set up in blocks that created all sorts of problems.

"If we wanted to dry out greens, then tees suffered," says Johnson, who's in his ninth season at Minikahda, third as the superintendent. "Before, we didn't have individual head controls. We ended up having to go out and shut off heads (by hand) in low areas."

Although the area is coming off its second wettest summer on record, Johnson is aware problems could be around the corner. "We were always conscientious of what we put down," he said. "We only water areas that need it."

Some areas of Minikahda that needed water before require less now, and it has nothing to do with the new irrigation system. As part of architect Ron Prichard's restoration of the Donald Ross design, trees that were ill planted or popped up on their own over the years were removed. The result was better turf. "We cut trees down and the rough got thicker on its own," Johnson says.

Like Johnson, superintendent Kevin Stinnett of Heritage GC in Wake Forest, N.C., had enough water. Unlike Johnson, he had ongoing problems due to the dry conditions that ravaged the area.

"We definitely had plenty of water. Our concern was we couldn't get it out there," Stinnett said. The water supply for the 2-year-old Bob Moore Jr. design is a nearby creek.

Like many other superintendents, Stinnett used wetting agents to increase the efficiency of his irrigation, which was

**"I try to give the plant what it needs when it needs it."**

KEVIN STINNETT, HERITAGE GC

mostly done at night. But he also had to hand-water to solve his problems.

"We pulled a lot of hoses. We had two or three guys out there every day," he says. "I try to give the plant what it needs when it needs it. We try to do the right thing for the grass."

At California's Woodland Hills CC, where a restoration project is underway, superintendent Steve Sinclair and some club members also decided to do what's right — and they were rewarded for it. They installed a new irrigation system to water the course more wisely. And because they did, Sinclair says the club received a reimbursement for \$35,000 from the water department.

Sinclair said the Los Angeles Department of Water and Power (LADWP) rewarded the course, not for saving water, but for using it more efficiently through the Water Conservation Technical Assistance Program. He said LADWP members came to the course and conducted a "catch can" test. They placed collection containers at set intervals at about 12 irrigation heads and ran each head for the same amount of time. They then measured the water collected in each catch

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## Hold Water



Minikahda Club installed a new irrigation system with 1,200 individually controlled heads. "We only water areas that need it," says superintendent Jeff Johnson.

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can. When the new system was installed, LADWP conducted the same tests and found the water dispersal was more uniform and thus more efficient. The course was also rewarded because it went to a computer-controlled system.

Sinclair is also a fan of surfactants, but he hopes his biggest tool in conserving water will come through cultural practices.

That program already commenced with the ending of the club's winter overseeding program, greatly reducing water consumption.

Sinclair also wants to restore natural sections of the 1925 Bill Bell design that have evolved into turfed areas that now require water, nutrients and pesticides. As part of a restoration program, Sinclair and some club members hope to turn the barrancas, dry for much of the year, back to natural areas complete with undergrowth. Unfortunately, some members aren't buying into the idea even though Sinclair said the green chairman is on board with the project and has been touting the benefits in the club's newsletter.

"Education is the only way you can do it, but they still aren't buying it," Sinclair says with disappointment coming through in his voice.

Architect Brad Booth who designed the Bay Club with partner PGA Tour pro Brad Faxon says education is a key ingredient to designing, building and maintaining golf courses that are not meant to be lush and green but rather those that change with nature. Those layouts, Booth says, play one way when damp and soft and another when dry and firm. According to Booth, such a course is more interesting and harkens back to golf's roots.

"There is a joy in playing a golf course over and over. It's not the same thing (every time)," he adds.

Courses that use less water may not be a choice but a mandate in the near future. Government agencies on every level have been paying more attention to water issues during permitting in recent years, Booth says. "They are looking hard at how you're acquiring water and how you conserve it," he adds.

Of course, the way to avoid the problem altogether is to get rain when you need it. "It's all timing," says Minikahda's Johnson. ■

*Pioppi is a free-lance writer from Middletown, Conn.*

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## ▼ Aqua-MAXX

**Aqua-Aid** offers Aqua-MAXX, a omni-directional surfactant with enhanced kelp developed to put down water, wetting agent and growth stimulant all in one application. Aqua-Aid also offers its PROportioner System, which allows for effective application of Aqua-Aid products during routine hand watering, by gradually re-

leasing the ingredients from the concentrated pellets into the water stream at just the right rate for optimal performance.

For more information, contact 800-477-8415 or [www.dakotapeat.com](http://www.dakotapeat.com)

## Award

**Precision Laboratories** offers Award, a soil surfactant designed to manage water in both constructed and native soil profiles. Award contains ingredients that optimize soil water management and playability, according to the company.

For more information, contact 800-323-6280 or [www.precisionlab.com](http://www.precisionlab.com)

## Sixteen90

**Aquatrols** offers Sixteen90, a long-term surfactant that remains effective in the soil for up to three months, reduces water repellency and promotes turf uniformity.

The company also offers Caltrisal, a soil amendment that overcomes salinity issues in soils by moving

dessicating salts away from the root zone quickly and efficiently.

For more information, contact 800-257-7797 or [www.aquatrols.com](http://www.aquatrols.com)

## Super Wetting Agent

**JADA Corp.** offers Hydration Super Wetting Agent, which increases the wetting capacity of water in hydrophobic soils and prevents and cures localized dry spots.

For more information, contact 973-762-8002

## Hydrozone

**Advanced Water Management** offers Hydrozone, a water-absorbing polymer that absorbs 30 to 40 times its weight in water and later re-

leases the water to a plant's root zone. Hydrozone, a white free-flowing powder with little or no odor, lessens water loss caused by evaporation and percolation, the company says.

For more information, contact 877-994-3494 or [www.hydrozone.net](http://www.hydrozone.net)

## Surf-Side Pellets

**Montco Products** offers Surf-Side Pellets to control localized dry spot. The pellets are 99 percent active nonionic wetting agent.

One superintendent reports that Surf-Side Pellets help eliminate hard-to-wet areas on his golf course and improved water movement through the soil. The pellets decreased the need for daily irrigation and nearly eliminated the need for daily syringing.

For more information, contact 800-401-0411

## Alleviate

**United Horticultural Supply** offers Alleviate, which cures localized dry spot. The hydrophobe tenside chemistry in Alleviate targets the coating of waxes, lipids, fulvic acids and other materials that make soil unable to re-wet. Alleviate is a blend of organic solvents designed to attack and break down the hydrophobic materials that bind to the sand particles in the soil profile. This action removes the waxy materials and places them in solution, which means they can be flushed from the soil profile.

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## ▲ DGM System

The DGM System, or the Direct underGround Maintenance syringing system for greens, is available from **Reelcraft Industries**. It features a high-quality hose that's spring retractable onto an industrial-grade reel. The unit is encased in a high-quality polyethylene encasement. The hose has a working pressure rating of 250 psi and a burst pressure rating of 1,000 psi.

For more information, contact 800-444-3134 or [www.reelcraft.com](http://www.reelcraft.com)

## Myst and Ratio

**PrimerTurf**, an all-independent green industry purchasing cooperative, announced that its 31 members are the exclusive distributors of two new wetting agent products – Myst Wetting Agent and Ratio Soil Surfactant. The products promote irrigation efficiency by counteracting the effect of hydrophobic soils and relieving problems associated with localized dry spots.

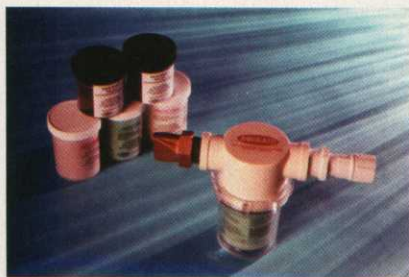
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## Greenwave

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# Syringing with Style

**It requires use of the senses,  
especially sight and feel,  
as well as keen concentration**

**BY LARRY AYLWARD, EDITOR**



**T**here's an art and science to syringing. It's not just spraying water on a green for a few minutes to cool off the turf's canopy, or to prevent wilt and localized dry spot. Syringing has more pizzazz

than that.

One could say that syringing is a lot like cooking. A good cook knows just the right amount of spices to add to a dish. A good syringer knows just the amount of water to spray on a green on a scorching July day.

Syringing is also not a mindless maintenance endeavor. It requires use of the senses, especially sight and feel, as well as keen concentration.

John Denholm, superintendent of Sparrow Point CC in Baltimore, says syringing is a regular part of his water-management plan. The course uses its irrigation system and workers hand-water greens as part of syringing.

Marc Snyder, director of golf course operations for Rio Grande CC in Rio Verde, Ariz., says a good syringing program combines both those methods. "I don't think you can rely on one or the other."

Syringing goes hand in hand with labor. If a course has maintenance workers to spare, the superintendent may be able to disperse a few of them to syringe by hand.



FILE PHOTO

**Marc Snyder, director of golf course operations for Rio Grande CC, says you can never take the human touch out of syringing.**

During the week, Denholm mostly uses a small crew to syringe. But on the weekends, when there aren't as many workers at the course, Denholm turns on the course's irrigation system to syringe for about two

### Issue

How does a superintendent build a solid syringing program? Does he use his irrigation system to syringe, instruct workers to hand-water or both?

### Solution

Syringing is not a mindless endeavor, especially when it comes to hand-watering. A good syringing program is composed of workers who are experienced and have a "feel" for the process.