

Real-Life Solutions

■ POND MANAGEMENT

The Proof Is in the Pond

Golfers often see a healthy pond as a reflection of your operation.

Here's how to manage ponds using different solutions

BY PETER BLAIS

Ponds are an essential part of many golf course operations as a source of irrigation water, an aesthetic feature and a hazard to be negotiated by players.

Michael VanErdeWyk, founder of Bioverse, a pond-treatment firm that has used its Healthy Ponds program to treat 200,000 ponds nationwide, writes on the company's Web site, "A thorough understanding of the ecosystem of the pond and the interactions that take place when you treat the water will assist you in successfully managing the pond."

To manage water bodies properly, superintendents need to take into account numerous factors including a pond's age, design, size, shape, location, biology (zones) and water-quality parameters (sunlight, water temperature, nutrients, pH and oxygen levels).

"In summary, balance is critical in the pond," VanErdeWyk writes. "A healthy pond contains balanced amounts of oxygen, nutrients and water clarity."

Unhealthy ponds quickly fill and refill with algae, leading to a variety of water-quality, irrigation, aesthetic and odor problems. Superintendents generally manage their ponds and combat algae using one or a combination of chemical, aeration and bacterial methods.

Chemicals

It's well-documented that copper sulfates and copper chelates are effective in controlling algae, according to Andy Moore, director of business development with Aquatrols in Cherry Hills, N.J. Several companies manufacture copper-based products.

Last year Aquatrols introduced Radiance, a copper-based pre-emergent pond-management tool. Traditional copper-based products tend to stay in the immediate area where they are applied, according to company literature. "To achieve uniform distribution throughout the pond, the application has to be made at all points around and in the pond, adding

MIKE KLEMM

Challenge

Ponds on golf courses just can't be left alone. They need to be maintained. Superintendents need to take into account several factors to maintain a pond successfully.

Solution

A healthy pond contains balanced amounts of oxygen, nutrients and water clarity. Ponds should be managed using one or a combination of chemical, aeration and bacterial methods.

labor and time to the process. Copper used in these products usually settles to the bottom of the pond quickly, where it's relatively ineffective. Additional problems can develop if large amounts of copper settle to the bottom of ponds."

Radiance can be applied in one spot but quickly disperses throughout the entire body of water, according to Aquatrols. The formulation also allows the product to stay dispersed much longer. Radiance can prevent algae blooms for about a month.

Moore says that without a large inflow or outflow of water into the pond, applications are generally made every two weeks. Putting in low levels on a continuous basis prevents large algae outbreaks and places less copper into the ecosystem in the long run.

Applications should start when water temperatures rise above 60 degrees F and algae begins to grow. Treatments should cease when water temperatures cool below that level. Application rates are 1 gallon of Radiance per 1 million gallons of water initially, followed by a half-gallon per 1 million gallons of water every two weeks thereafter. A Northern superintendent may use 12 gallons in a 1 acre pond that is 6 feet deep. At \$30 per gallon, that amounts to \$350 to \$400 per golf season, Moore estimates.

"The preventive approach requires some education because people generally don't think about their ponds until they turn ugly," Moore says. "They are more in tune to doing a preventative fungicide application or pre-emergent herbicide application on turf. People haven't thought about their ponds in the same way."

Aeration

Doug Cramer, president of aeration equipment manufacturer Air-O-Lator, says water quality is dependent primarily on how much oxygen is in the water.

"Oxygen is important because it feeds the microorganisms so they can degrade the solid matter," he says. "Chemicals are fine to treat a symptom [algae], but they don't treat the cause."

Fountains, aerators and diffused air systems are common ways superintendents artificially introduce oxygen into their ponds.

"Mother Nature tries to get oxygen into

the water naturally through sun, wind and babbling brooks," Cramer says. "On a golf course, that balance is upset because the ponds are containment basins with high volumes of organic matter, low oxygen and occasionally some runoff from nitrogen fertilizers.

"Most of our products ride on a flotation platform, and the modular unit sits down inside the float, making it more user-friendly to service," he adds. "People frequently go out in a row boat, lift the unit out of the flotation device and service it. It's designed to be worked on easily."

Superintendent Nels Lindgren has installed one Air-O-Lator unit and plans to add three more at Loch Loyd GC in Kansas City, Mo.

"We have a water feature that has aerated itself over the past 13 years," he says. "Water went over a series of waterfalls, and the ponds stayed aerated. But we got into a water-restriction deal, and the residents came into control of our 100-acre lake. So now we run less water through the water feature, meaning less aeration, which is why we are going with the aeration equipment."

Bacteria

Bacteria, enzymes and other microorganisms are becoming an increasingly popular way to manage ponds. Bioverse's Healthy Ponds program is a good example. It's an all-season system that incorporates testing, balancing and treating, according to VanErdewyk.

"We have a patented dispensing system that meters bacteria and enzymes into the pond to break down the organic waste and nutrients, consume the nutrients, reduce sludge and odors, and improve the water quality and clarity," the Bioverse CEO says. "We offer cold- and warm-water formulas. We also offer a mosquito-control formula, a biolarvicide that kills mosquito larvae in the pond."

The cone-shaped dispenser is 12 inches in diameter at the top and 18 inches in height. Into the dispenser goes a mixture of different strains of bacteria as well as micronutrients, vitamins, minerals and buffers that make the conditions right for microorganisms to thrive, along with a time-released gel that

"Chemicals are fine to treat a symptom [algae], but they don't treat the cause."

DOUG CRAMER
AIR-O-LATOR

**Read another
Real-Life Solutions
on page 86**

Continued on page 70

Real-Life Solutions

Continued from page 69

holds those vitamins and nutrients in place while creating a large surface on which the bacteria can grow. The dispenser needs to be refilled every 30 days. One dispenser treats one surface acre of water.

The expense varies depending on the climate, VanErdewyk says. On average, the cost is about \$1,000 per surface acre during the first year. The cost goes down roughly 30 percent in the second year because the polypropylene dispensing system does not have to be purchased again.

Bacteria and enzymes are permanent, long-term solutions to algae problems, VanErdewyk says.

"You may not get the immediate results [like with copper products] and have your pond clear in a few days," he says. "It may take four to six weeks before you see substantial results."

But the wait is worth it, according



A healthy pond contains little algae and appears picturesque on a golf course.

MIKE KLEMM

to superintendents who have used the product.

"We use it in conjunction with aeration, which adds to its success," reports Drew Annan, who employs the system on his 11 ponds at Forest Highlands GC in Flagstaff, Ariz. "It has reduced our weed growth moderately and our algae growth severely."

Bob Schneiderhan, superintendent at Chalk Mountain GC in Atascadero, Calif., is in his third year with the Bioverse program, and says it is an environmentally responsible solution.

"In our case, the algae was regenerat-

ing every five to seven days when I was treating it with copper," he recalls. "If you knocked it down every time it bloomed, that would have been even more costly than the bacteria system."

"Our pond is next to a fresh-water runoff pond that runs into the Salinas aquifer," Schneiderhan adds. "When I realized the copper sulfate would require repeated applications, that's when I became concerned enough to find an alternative." ■

Blais is a free-lance writer from North Yarmouth, Maine.

Filling a Radiator with Diesel Fuel...

\$299.00

Diesel Fuel

Using SVW To Train Your Crew...

\$95.00

"We Teach Common Sense!"

Superintendent's Video Workshop: Helps reduce risk of personal injury and maintenance mishaps • Teaches personal responsibility
Promotes professionalism • Provides written documentation of training
Choose from 26 titles – most also available in Spanish.

Order online at www.svwonline.com
or call 800-938-4330

SVW/EPIC of Wisconsin, Inc. • 3014 E. Progress Drive • West Bend, WI

Real-Life Solutions

■ CONTROLLING *POA ANNUA* DURING OVERSEEDING

Puttin' on a Show . . .

... with a little help from pre-emergent herbicide and other cultural practices

BY DEBBIE CLAYTON



PHOTOS BY TODD HIMELBERGER

When John Anderson quit farming in Iowa 15 years ago and moved to Florida when he was 40, he wasn't sure what he would do for the rest of his life. He found his answer after starting to work on the crew at his neighborhood golf course.

But Anderson's neighborhood course wasn't your typical golf course — it was Arnold Palmer's Bay Hill Club in Orlando, host of the nationally televised Bay Hill Invitational each March. Anderson took to golf course life easily.

"I love getting up early and being out on the course in time to see the sunrise," he says. "There are a lot of similarities between farming and golf course maintenance — in both cases you are acting as a steward of the land."

At Bay Hill, Anderson worked his way up to assistant superintendent, taking classes in turf management on the side. Two years ago, he succeeded Dwight Kummer as head superintendent of the 27-hole facility. With 39 employees, including the grounds crew, landscaping crew, greenhouse manager, mechanics, two assistants and an administrative assistant, Anderson strives to keep the high-profile course in immaculate shape.

"Making sure the course is in great condition for the tournament each year is our biggest challenge," Anderson says. "We're open for

John Anderson retired from farming in Iowa and moved to Florida at age 40. He then worked his way up to superintendent at Arnold Palmer's Bay Hill Club in Orlando.

year-round play, only closing the course for one day — the Sunday before the tournament starts each year. We want our members to have use of the course right up until tournament time because they can't play on it that week. But it's difficult to keep up with the ball marks and wear-and-tear before the tournament."

A few weeks before the tournament, Anderson weans his greens off fertilizer and verticuts them ag-

Continued on page 86

Challenge

To make sure the course is in great condition for one of the PGA Tour's most popular tournaments. In this case, the superintendent must deal with a timely transition of bermudagrass and a battle with *Poa annua*.

Solution

The superintendent is skilled in the art of overseeding and other cultural practices. Using a popular pre-emergent herbicide helped him control *Poa annua*.

Continued from page 85

gressively. He also cuts them lower and rolls them to get green speeds up to 11 or 12 on the Stimpmeter. In addition, he grows roughs taller — up to 4 inches — and restricts traffic to cart paths.

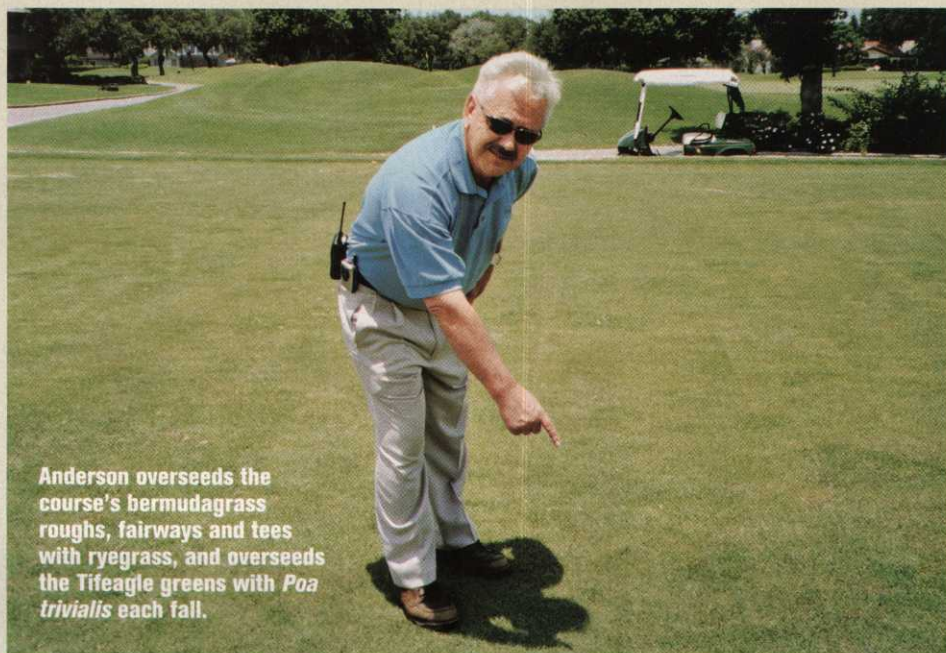
The timing of the tournament means transition is a major challenge each year for Anderson and his crew. Anderson overseeds the course's 419 bermudagrass roughs, fairways and tees with Palmer III Perennial 3 ryegrass, and overseeds the Tifeagle greens with *Poa trivialis*. "Our overseeding is a little heavier than most Florida golf courses because we're on national television," Anderson says.

He overseeds the first week of November each year, reseeding wear areas and ball marks several times

To ease transition from winter grass back to bermudagrass each spring, Anderson scalps the perennial ryegrass to allow bermudagrass a better chance to grow.

during the winter. Prior to overseeding, Anderson makes an application of Ronstar herbicide at the rate of 2 pounds active ingredient per acre impregnated into dry fertilizer on all fairways and roughs. He uses the Bayer Environmental Science product specifically for control of *Poa annua*, which is typically visible in January or February.

"If we don't apply Ronstar as a pre-emergent, *Poa*



Anderson overseeds the course's bermudagrass roughs, fairways and tees with ryegrass, and overseeds the Tifeagle greens with *Poa trivialis* each fall.

shows up so close to the tournament that it's too late to go out with herbicides," Anderson explains. "We've used Ronstar for many years, and it provides 90-percent control or better."

Howard Fertilizer, Anderson's blender, makes fertilizer recommendations based on soil tests and impregnates Ronstar in the

blend. Generally, Anderson puts down 15-3-15 in three separate applications each year. "We use Ronstar in the spring and summer applications for effective pre-emergent control of goosegrass," Anderson says.

To ease transition from winter grass back to bermudagrass each spring, Anderson scalps the perennial ryegrass to allow bermudagrass a better chance to grow. "Most

Florida courses are halfway transitioned back to bermudagrass by the time of the Bay Hill Invitational the third week of March," he says. "We have a difficult time keeping the winter grass going through the tournament and then trying to speed up the transition afterward."

Though the course goes through tremendous stress during the week of the tournament, Anderson credits his crew with bringing the course back to normal in record time each year.

"A televised tournament is a fun thing to focus on, and it gets the entire crew excited," he notes. "They really pull together and work hard before and after the tournament. It's gratifying for them to see the results of their work on TV."

Last March, Bay Hill experienced extremely warm, windy weather for the first day of the tournament, and the greens dried out and hardened. "We had to adjust our water to soften up greens," Anderson says. "Then the last day of the

tournament, it rained the entire day. The tour officials kept play going and our greens took the water fairly well. There were spots of standing water on some of the fairways, but these players are so good, they played amazingly well despite the weather."

With an average of 50,000 rounds per year, Bay Hill stays just as busy through the warm summer months as it does when the snow birds arrive in the fall. The course's three nine holes, the Championship, the Charger and the Challenger, have all been reshaped and redesigned since Anderson started working there in 1988.

"The course has come a long way since Arnold Palmer purchased it in 1970," says Anderson. "And I've come a long way since arriving in Florida as a retired farmer. I like to think we've progressed together." ■

Clayton is a writer from Tierney Communications, which represents Bayer Environmental Science.