BY BRUCE ALLAR, CONTRIBUTING EDITOR

Mark Wilson lights up a cigar nearly the size of a dynamite stick. He'll likely strike a match to an even bigger smoke in November, when he celebrates his 20th year as golf course superintendent of Valhalla Golf Club in Louisville, Ky. But Wilson's mind is on something else these days — preparing the course for the Ryder Cup on Sept. 19-21. Wilson's hair shows not a touch of gray and he makes no concessions to the sun as he goes hatless while driving a golf car on a tour of the Jack Nicklaus-designed 18 holes, many of which have been tweaked since the 2004 Senior PGA last brought Valhalla into the spotlight.

"My life's been put on hold for the last three and a half years since we started preparing for the Ryder Cup," Wilson says. "After the 2004 Senior PGA, Jack made a list, and we made a list. I went to the Ryder Cup at Oakland Hills in Detroit (in 2004) and saw how big this tournament has gotten."

It's a Monday morning in late June, 84 days before the big match, and the 52-year-old Wilson is feeling some stress. "Along with having the Ryder Cup, you're in demand right now," he says as he whizzes the golf car to the first tee. "For example, this is the eighth Monday in a row we've had an event."

Wilson had scheduled a mowing crew for 5 p.m. to work around the event, but he's just learned that its start time will be delayed, and he'll have to reschedule his workers.

In its early years, Valhalla's founders — local businessman Dwight Gahm and his sons — opened the checkbook for Wilson to manicure a championship-caliber course, which opened in 1986. When the PGA of America began acquiring a stake in 1993 and after it assumed full ownership in 2000, the emphasis has been on upgrades designed to elevate Valhalla to a ranking among top-tier tournament venues.

Wilson, who is in his 37th year in the business, is asked how he's been able to handle the demands at such an ambitious place.

"Probably in recent years, it's the next tournament that's driven the machine," he responds, chomping on his stogie. "You do get burned out, but adrenaline-wise, when you're hosting the biggest tournament in the world, it pops you.

"And we've had the luxury here of always being able to make this place better. A lot of superintendents are fighting a battle they can't win because they don't have the resources. They're losing ground every day. At least we're in a progressive mode."

Wilson takes a contemplative puff and then offers an afterthought, "I ain't had enough time in the 20 years I've been here to sit down and write a resume, huh?"

He's plainspoken and punctuates many of his comments with an inquisitive "huh," as if he's willing to entertain an alternate explanation but can't imagine what it might be. Other times he ends a point with a staccato "ha-ha-ha," as if he's letting you in on a private joke.

Wilson takes a call on his cell phone and grumbles to the caller that having golfers on the course until 6 p.m. is messing up his maintenance plans. "If you notice," he says when he returns to this interview, "I don't hesitate to tell people how I feel, ha-ha-ha."

Maybe that's a key to your longevity, it is suggested. He agrees. "It don't build up," he says, and there's that short laugh again.

Since 2004, Wilson and crew — along with various subcontractors — have moved and rebuilt four greens and created eight new tees, all after consultations with Nicklaus. The course now has 65 bunkers, where it once had 43. Length, naturally, has been added. Valhalla could play as long as 7,560 yards, according to the superintendent, but he expects hole No. 2, previously a par 5, to be shortened to 505 yards and play as a demanding par 4. Par would then be 71 over 7,496 yards.

Many changes were also made to the grounds to facilitate spectator sight lines, improve corporate hospitality and media areas, and ease access to and from Valhalla. Aesthetics have been improved with the construction of rock walls, installation of water features and other projects.

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"Adrenaline-wise, when you're hosting the biggest tournament in the world, it pops you."

– MARK WILSON

PHOTOS BY: JOHN NATION

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Wilson won't divulge the amount spent since 2004 in preparation for the Ryder Cup. When asked how Valhalla will get its money back, he says, "You didn't buy a tent, did you?" The 100-person corporate hospitality tents sold for about $500,000 and up.

Driving down the first fairway, Wilson notes that after witnessing the energy — and the crowds — on the first tee in 2004 at Oakland Hills, he took out some wooded areas and lowered mounds to make room for huge crowds to witness the opening shots. He points to the intermediate cut, which has been expanded from the uniform 6-foot width he kept for the Senior PGA as well as the 1996 and 2000 PGA Championships, which Valhalla also hosted. It will be as wide as 40 or 50 feet in some places. "It's strategy," Wilson says. "The Americans can pull out their drivers. We think they're longer, so we'll give them more room to hit it."

At the greens, the grass will be left a little longer. The thinking is that U.S. players are better at lobbing with wedges, while the Europeans' bump-and-run strength from shorter grass will be neutralized. The new green on No. 2 is actually smaller at 4,000 square feet and narrower, with two new front bunkers on the left added to an existing one on the right — making a long and exacting par 4. But Wilson feels no guilt.

"One thing I've learned from my experiences," the certified superintendent says, "is never underestimate how good these guys are."

He's learned about managing people as well during his two decades at one course — lessons like learning to delegate and expecting some hires to fail. "No matter what, it's a numbers game," Wilson says. "Every time I hire five people, I know one of them is not going to work out. You know what I'm saying?"

He no longer orders employees to do extra or overtime work. "We have a volunteer sign-up, and the overachievers always sign up and the underachievers don't. Somehow it always works," he says. "That's why I pay everybody by the hour. Everybody who works more I pay more, huh?"

Another key: Promote from within. All of Wilson's assistants have come from within the staff, and he's seldom gone outside to bring in anyone above existing workers. "The ladder is right here," he says.

The expanded 120-person Ryder Cup staff will include more than 45 former Valhalla crew members — many now superintendents themselves — returning to help groom the course. "They just want to be part of this,"

Wilson says. "They've put their sweat, blisters and blood in this place already."

Valhalla General Manager Mike Montague, who has been at the club for more than 20 years as well, says Wilson's longevity can be attributed partially to the fact that there are always new levels to achieve in the quest to develop a renowned championship venue.

"He's being constantly challenged, so he doesn't have to look someplace else," Montague says.

Wilson also carries out the overall mission while not straying too far from his troops. "Being willing to do what's asked of him and lead at the same time — that's the challenge," the GM says. "Mark is a team player, and that's what he expects of his crew."

Wilson's mantra is, "No problems, only solutions."

Hole No. 7, a fascinating par 5 with two fairways (one for eagle hunters), had exposed quarry rock between the landing areas four years ago. It is now a 6-acre waterscape with the ability to pump 5,000 gallons per minute. A new rock wall separates the green's edge from water, and a new bunker guards the safe route to the right.

"I don't really want to give you the number, but we've taken down a lot of trees" to improve sightlines, Wilson says, driving along No. 10. "You see this? Seven thousand people could be in there — and that used to be all woods."

Wilson has two sons in their early 20s and a 12-year-old daughter. The oldest, Dane, works for him, and it's made Wilson think more about his mentoring role. "It's fun teaching," he says.

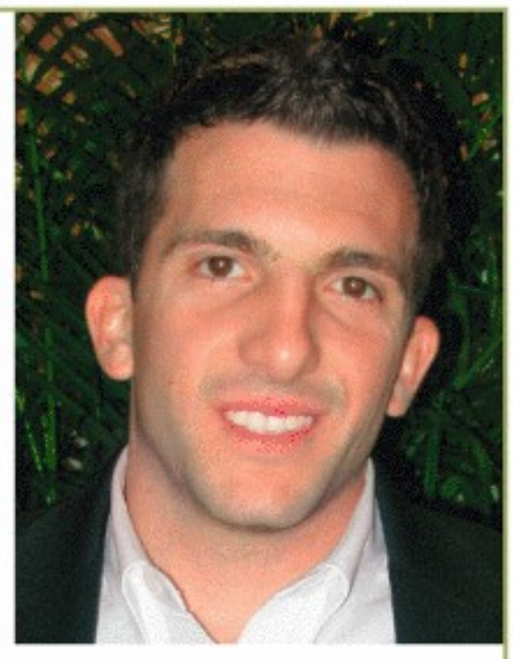
His mantra: No problems, only solutions.

"To me," Wilson says, "it's turning that doggone thing from a problem to a solution and moving on — taking a negative and saying, 'OK, now it's a positive. Let's move on.' " ■

Allar is a contributing editor to Golfdom.

TOP Assistants

David Delsandro is one driven dude



Editor's note: Top Assistants will feature a question-and-answer session with an assistant superintendent every month. If you'd like to nominate someone for the feature, please send an e-mail to Larry Aylward at laylward@questex.com.

David Delsandro, assistant grounds superintendent at Oakmont Country Club in Oakmont, Pa., was happy to see his beloved Pittsburgh Penguins make the Stanley Cup finals this year, even though they lost to the Detroit Red Wings. Delsandro is also happy in his job at Oakmont, where he has worked for five years. *Golfdom* caught up with Delsandro recently to ask him a few questions about his livelihood and his life.

Golfdom: What's your favorite part of the job?
Delsandro: My favorite part of the job is the ever-changing challenges it presents, whether it involves staff, conditions, equipment, weather, etc. It seems as if there are always new challenges to address and overcome.

Golfdom: Who has been the biggest influence on your career and why?
Delsandro: John Zimmers Jr., the superintendent at Oakmont Country Club. He is a great leader and mentor in all arenas of turf and life. I'm lucky to have the privilege of working with him.

Golfdom: What's your favorite product or piece of equipment and why?
Delsandro: My favorite piece of equipment is the Toro ProCore 648. I love it because of its versatility, technology and soundly engineered design.

Golfdom: How many years have you worked in the golf industry?
Delsandro: The 2008 season is my ninth year in the golf industry. I worked four years at Cedarbrook Golf Course under John Stawovy, and this is my fifth year working for Zimmers at Oakmont.

Golfdom: If you could change something about the industry right now, what would you change?
Delsandro: I would increase the amount of rounds played. This would drive revenue and help create growth for the industry as a whole.

Golfdom: Describe yourself in one word:
Delsandro: Driven.

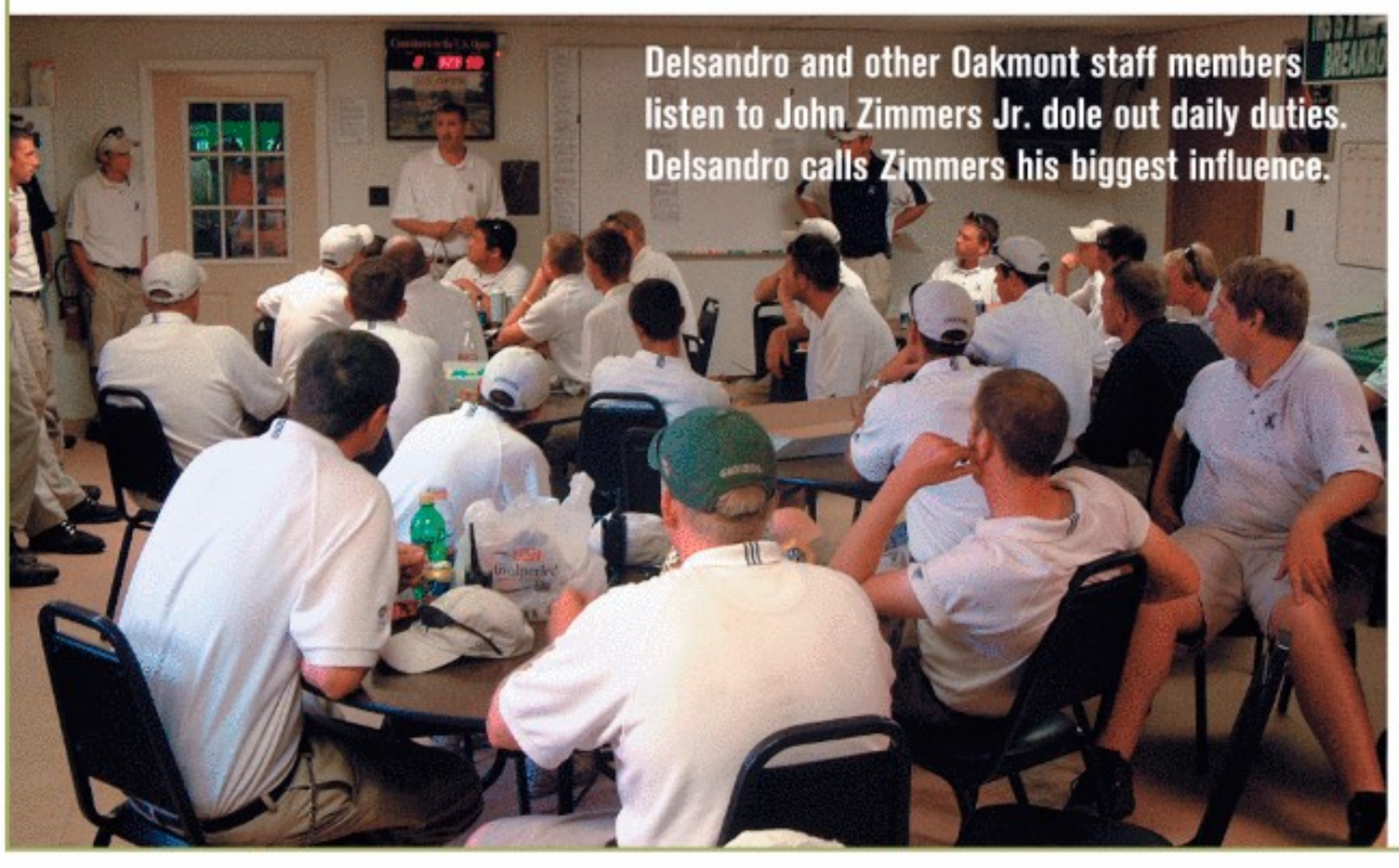
Golfdom: What is your favorite hobby and why?
Delsandro: I enjoy working out, spending time with my friends and following the Pittsburgh Penguins. These hobbies allow me to relax and stay focused.

Golfdom: What's your favorite vacation spot?
Delsandro: I enjoy vacationing at the beach with my friends.

Golfdom: What's your favorite golf course besides your own?
Delsandro: I really like visiting all classic courses that are rich in history and tradition.

Golfdom: If a movie were made about your life, what famous actor would play you?
Delsandro: Brad Pitt.

Golfdom: It's your last day on Earth. What would you do?
Delsandro: Spend time with family and friends. ■



Delsandro and other Oakmont staff members listen to John Zimmers Jr. dole out daily duties. Delsandro calls Zimmers his biggest influence.

PHOTOS BY: LARRY AYLWARD

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Golfdom'S PRACTICAL RESEARCH DIGEST FOR TURF MANAGERS

TURFGRASS TRENDS

RAPID BLIGHT

Timely Fungicide Applications, Salinity Reduction Help Control Rapid Blight

By Mary W. Olsen

Rapid blight is a relatively new turfgrass disease (Stowell et al., 2005). It was first described in 1995 when microscopic football-shaped structures were routinely observed within leaf cells in symptomatic cool-season turfgrasses, but their identity and relevance to disease remained a mystery for several years.

The causal organism, *Labyrinthula terrestris*, was identified in 2003 (Olsen et al., 2003). Rapid blight occurs on golf courses, commercial lawns and sports turf that use irrigation water with moderate to high salinity. Generally, it appears on cool-season turfgrasses irrigated with water at electrical conductivity greater than 2 deci-Siemens per meter (EC >2.0 dS/m) over 1,300 total dissolved salts (TDS). It is most severe on rough and annual bluegrasses, perennial ryegrasses, and colonial and velvet bentgrasses. Early symptoms of disease include patches of turf that appear water soaked and slightly sunken. Infected patches in *Poa trivialis* are first appear orange to golden (Photo 1), and large areas of straw-colored dead turf develop quickly in bentgrasses (Photo 2, p. 48).

PHOTO 1

A common symptom of rapid blight in rough bluegrass (Poa trivialis) is the development of orange- to gold-colored sunken patches of turfgrass.

Characteristics of the pathogen

Understanding the nature of the pathogen that causes rapid blight is the first major step in developing control measures.

Early attempts to identify the pathogen led to the disease mistakenly being associated with a chytrid fungus. However, *Labyrinthula terrestris* belongs to a unique group that is not a

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fungus, oomycete or a bacterium. It is difficult to place it neatly among other turfgrass pathogens. *Labyrinthula* species are often referred to as marine net slime molds, but they are not related to true slime molds at all. Their most prominent features are the microscopic football-shaped vegetative cells and networks of tubes in which the cells "glide." *Labyrinthula* cells can move more than 0.5 inches per hour in lab cultures and are found on all plant parts.

Until identified as a pathogen of turfgrass, *Labyrinthula* species were thought to be associated only with marine systems, but *L. terrestris* grows best in culture at salt-adjusted salinity of 2.0 dS/m to 10.0 dS/m.

Long-term survival mechanisms of *L. terrestris* are not well known. It survives over the summer in the absence of its cool-season turfgrass hosts either on dry plant tissue or non-symptomatic warm season turfgrasses. In Arizona, *L. terrestris* has been isolated from non-symptomatic bermudagrasses and non-symptomatic *Poa trivialis* irrigated with recycled water (EC 0.8 dS/m) indicating that it probably has a wide distribution but causes disease only under certain conditions. Genetic studies indicate that *Labyrinthula terrestris* may have originated from a marine species (Craven et al., 2005), but the rapidity with which it apparently spread is still a mystery.

Labyrinthula terrestris and rapid blight disease

Diseased turf is frequently associated with suboptimal irrigation water. Incidence varies, but disease severity increases as salinity of irrigation water increases above 1.5 dS/m (about 1,000 ppm).

In our greenhouse experiments at the University of Arizona, inoculated perennial ryegrass irrigated at EC 0.5 dS/m to 1.0 dS/m never developed symptoms, but *L. terrestris* was re-isolated from plants. Increased salinity (EC 1.5 dS/m to 8.0 dS/m) was directly correlated to increased disease severity. Soil salinity also is a factor, and when elevated because of incomplete leaching and/or depleted soil moisture, rapid blight may appear when salinity of irrigation water seemingly is not a problem. In either case, disease disappears after substantial rainfall.

Non-symptomatic warm-season turfgrasses such as bermudagrasses are reservoirs of *L. terrestris* that infects susceptible cool-season turfgrasses after overseeding. Susceptibility of cool-season varieties varies, and more salt-tolerant varieties are often more tolerant to rapid blight (Camberato, et al., 2006). In field trials in Arizona (Kopec et al., 2004), several varieties of creeping bentgrasses and red fescues were very tolerant to rapid blight. Most perennial rye varieties tested to date show moderate to low tolerance, and all varieties of velvet

PHOTO 2

In susceptible bentgrasses, large areas of straw-colored dying turfgrass develop quickly, often in discrete areas with both heavy traffic and elevated salinity.

bentgrass, colonial bent and rough bluegrass tested have been very susceptible.

Disease control

Control of rapid blight depends on the integration of cultural practices that reduce salinity in irrigation water and soil, use of tolerant varieties and timely fungicide applications.

Where disease occurs in cool-season grasses used for overseeding, choices in overseeding protocol are critical. In severe situations, the choice is whether to overseed at all if salinity of irrigation water or soil salinity cannot be alleviated adequately. In more moderate situations where disease is manageable, tolerant turfgrass varieties should be used for overseeding (Photo 3). Using tolerant varieties for overseeding can reduce the need for salinity remediation and also decrease dependence on fungicides.

In areas where susceptible perennial turfgrasses such as *Poa annua* or colonial/velvet bentgrasses are used, cultural practices that reduce salinity, specifically sodium chloride, must be used in conjunction with fungicide applications.

The only highly effective fungicide for rapid blight control is pyraclostrobin. Other fungicides with moderate efficacy are trifloxystrobin and mancozeb. Because of the repeated use of the strobilurin fungicides, pyraclostrobin and trifloxystrobin, it is highly recommended that they be tank mixed with mancozeb to help prevent development of fungicide resistance. At this time, fungicide resistance has not been detected.

Under severe salinity conditions, rapid blight is very difficult to control with any combination of fungicides, and aggressive cultural practices to reduce salinity must be employed as well. Early disease diagnosis is critical for control since effective fungicides are so limited.

PHOTO 3

Differences in tolerance to rapid blight are demonstrated on a putting green that was overseeded on one side with Laser Poa trivialis and was severely affected by rapid blight and on the other side with Seaside II bentgrass that never developed symptoms.

Current conclusions

It is likely that *Labyrinthula terrestris* is well established in turfgrasses but has been overlooked, probably because of difficulty in isolating it and the similarity of rapid blight to other diseases such as salt damage and *Pythium* blight.

The increase in rapid blight coincides with increases in turf acreage, increased use of relatively high salinity water or recycled water for irrigation, and increased frequency of mowing combined with decreased mowing heights. It is a potential problem in susceptible turfgrass varieties wherever soil salinity increases as a result of using suboptimal irrigation water and where restrictions on water use reduce leaching capabilities. The limitation of effective fungicides makes cultural decisions for reducing salinity and overseeding with tolerant varieties all the more important for disease control.

Mary W. Olsen is an extension specialist and professor in the department of plant sciences at the University of Arizona, Tucson. She provides information on the identification, prevention and control of plant diseases in Arizona and conducts research on important diseases of cotton, grains, forage, vegetables, turf and ornamental plants.

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Fryer Fat as Fuel

Straight vegetable oil can be a viable fuel with equipment modifications

By Christopher S. Gray Sr.

Part 1 of this series published in August explained how to produce biodiesel from vegetable oil at your golf facility. But some people aren't big fans of handling all the necessary chemicals necessary to induce the transesterfication process, which converts the raw vegetable oil into a usable diesel fuel by lowering its viscosity through replacing the glycerol bond with an alcohol bond. Don't worry if you fall among this group, there is another option: straight and waste vegetable oil. Using straight vegetable oil in your diesel equipment poses no more risk to the machinery than regular biodiesel and is actually more environmentally responsible and cost effective.

Vegetable oil is an easily obtainable and cheap resource that a lot of us already have available in the kitchen at our golf facility. Last year alone, the United States generated more than 9 billion gallons of waste vegetable oil. So it's available in mass quantities across the country. The really cool part about using waste vegetable oil as an alternative fuel is that we are taking a by-product that restaurants would normally have to pay to have discarded, and we are making it productive and valuable. With diesel fuel prices at an all-time high, exploring this alternative fuel option makes economic sense in addition to the environmental benefits it offers.

It's not too difficult to sell this idea to your general manager, board of directors or course owner. Here's a little history lesson: This concept is, in fact, the original concept Dr. Rudolf Diesel had in mind when he first developed his engine. He demonstrated his first engine at the 1900 World's Fair using peanut oil as the fuel. His futuristic vision was that biofuels would become the dominant fuel due to the lack of sustainable petroleum supply. He certainly was ahead of his time. After his untimely death in 1913, the Cummins Corp. altered the fuel intake to accept less viscous fuels than his biomass fuels. Thus the new diesel engine was born with a modified fuel intake, but the underlying principle of using biomass fuels in the engine remained possible.

Vegetable oil has many properties that make it an attractive substitute for diesel fuel, except for one: It has a much higher viscosity. The vegetable oil must be made thinner to make this system work. This is accomplished by applying enough heat to the vegetable oil to reduce its viscosity to pass into a diesel engine with no problems. That principle is the basis for the rest of the processes discussed in this article.

What temperature is that exactly? There is no precise answer, but the generally accepted minimum range is between 140 degrees Fahrenheit to 180 F. With this temperature, the viscosity of the vegetable oil is reduced to resemble that of petroleum diesel, which will allow it to atomize properly and operate the engine. We will not be able to ever match the exact viscosity because that would require heating the vegetable oil to 302 degrees F, which is too hot for an equipment application.

There are two types of conversion systems that allow you operate diesel equipment with straight and waste vegetable oil. Both of these systems have been used extensively for the past 30 years in the automotive industry without major incidents. These systems have proved themselves reliable and economical over the past three decades. All I have done is borrow the technology and apply the component modification to turf equipment. These two systems are simply referred to as a "two-tank conversion system" and a "one-tank conversion system."

Choosing a system

As you might have guessed, the two-tank system employs two separate tanks in the system: one for the vegetable oil and one for petroleum diesel. Each tank has a separate fuel line and return line that converge at one point where a fuel-line

Continued on page 52

JOHN DEERE

QUICK TIP

If you aerate and verticut your course, each separate process can be quite time consuming. To free up time for other course responsibilities, try an aerator with a verticutter, such as the John Deere Aercore 800 with verticutter attachment. This accessory allows you to aerate only, verticut only, or simultaneously aerate and verticut. For more information on labor-saving equipment, please visit www.johndeere.com.