Mower

golfers. Mike Koppen, Deere's national sales manager for turf, says the old adage about the greens making the golf course remains as true today as it was in the days of Old Tom Morris. "That's how golfers measure the course, and walk-behind mowers give superintendents a better quality of cut at lower heights," Koppen says.

Sweating the details
So how do manufacturers decide when to pursue new ideas? All three mower companies say they don't reach that step until they've spent extensive time with customers and distributors to find out what niche is missing in the market.

Toro's Ullrich says he's on the road frequently with superintendents and turf professionals to find out the latest challenges in golf course maintenance. That's how some of the latest Toro walk-behind technologies became reality.

"I like to keep in constant touch with our end-users," Ullrich says. "Sometimes we bring people to us to discuss new ideas we have. When I feel there is a market position we can meet, I sit down with our engineers and brainstorm how to meet it."

Daly says he and his colleagues at Jacobsen are always talking to dealers, distributors, end-users and mechanics (from whom Daly insists the company gets some of its most important feedback). The conversations focus on how current Jacobsen walk-behind mower lines are meeting superintendents' needs and to see what the company can do to improve its products. He also says he starts most of his conversations with the unconventional question, "What are we doing right?"

"It's important that we know what we're doing right in addition to what we should change," Daly says. "After all, we don't want to change a feature of our machines just for the sake of changing it. If what we're making is working for the customer, why mess with it?"

Deere's Koppen says his company has formalized programs to bring customers to its Raleigh, N.C., headquarters to talk with them about new products and show them the prototypes. Gorman says Deere strives to have personal relationships with the people it brings in to look at its equipment. The company wants them to feel comfortable criticizing a design if it makes no sense.

"We don't hide our engineers from customers," Gorman says. "We bring the two groups face to face so they can hash out any problems. It's a great exercise that keeps our production people connected with the market."

The manufacturers agree the time frame on bringing a new walk-behind mower from the drawing board to the market is between two and

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Walk-Behind Mowers

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three years. Toro’s Ullrich was the only one to reveal how long it usually takes before the company sees a full return on investment, putting it at between five to seven years. “For some of our products, the payoff takes longer,” Ullrich adds. “For others, it’s shorter.”

But how well a walk-behind mower performs on greens is what ultimately determines its success, Ullrich says. “It all depends on how well you know your customers and how well your products fit the niche,” he adds. “It takes time, but it can make or break your product line, so you’d better do it right the first time.”

The Toro Co. expects its investments in walk-behind mowers to pay off in five to seven years.

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The hardest part of controlling moss on greens is that there’s no sure-fire way to eradicate it. Some superintendents use iron sulfate. Others swear by ammonium sulfate or copper sulfate. The use of Ultra Dawn (the dishwashing soap) has spread quickly to many parts of the country. Unfortunately, there’s no one method that works perfectly for all superintendents.

That’s what spurred superintendents Tom Vogel and Rob Miller to try a radical solution as moss populations expanded on their course’s greens.

Vogel, certified superintendent at Portage CC in Akron, Ohio, had persistent moss problems on about six greens. His treatments ran the entire gamut of the methods mentioned earlier, and he still couldn’t get a consistent kill that would leave the greens undamaged.

“I wasn’t getting as much control as I needed, and the members were starting to ask questions,” Vogel says. “After having met with limited success with other methods, I decided I needed a new solution.”

Down the road at Glenmoor CC in Canton, Ohio, superintendent Rob Miller came to the same conclusion about the hard-to-eradicate moss on two of his greens. “We could see the moss starting to expand, and we knew we needed to stop it in its tracks,” Miller says.

The problem
Moss poses a complex problem for superintendents because it can live under duress for long periods of time, according to Tony Koski, an extension turf specialist at Colorado State University in Fort Collins, Colo. Moss is a bryophyte, meaning that unlike turfgrass it has no roots or vascular system, reproduces vegetatively or by spores, and can survive long periods of desiccation. These factors taken together make it hard to design a fungicide to eradicate it.

At the same time, the problem has reached epidemic proportions in recent years because more intense turf management has created perfect conditions for moss survival, Koski says. These practices include low mowing heights, lower nitrogen rates on greens, discontinued use of mercury-based fungicides and use of finer topdressing sand, which inhibits good drainage by creating a perched water table.

Koski says his research shows that the Ultra Dawn was the most effective of the several methods he tested. (Ultra Dawn is most commonly applied in a spray form at a ratio of 4 ounces/gallon of water, and superintendents should drench the moss with the solution.)

But Vogel, who tried the Ultra Dawn treatment on his problem greens, says it’s tricky to apply.

“You have to get the timing exactly
right, and the weather conditions have to be ideal for it to work properly," Vogel says. "It has to be a completely sunny day, but it can't be too hot [Editor's note: Koski says that Ultra Dawn should be applied between 55 degrees F and 80 degrees F in full sunlight.] For some of us, that makes it tricky to do in the summer."

Miller hoped to burn his moss out of his greens and tried the Ultra Dawn and hydrogen peroxide treatments, but neither gave him the control he wanted.

"You'd make the application, and it looked like it worked," Miller says. "It would turn the moss brown, and it would appear to be dead. But two weeks later, it would be back, and it was stronger than it was before you tried to kill it."

Vogel was nearing his wits' end when a salesman from J.R. Simplot came to visit. As they sat in his office discussing the salesman's products, Vogel mentioned his moss problem. The salesman paused for a moment, and then told Vogel he'd heard that some superintendents were having success with an entirely new method of moss control: baking soda. Though he wasn't sure how he was going to get it out on his greens, Vogel thought to himself, "This idea is so crazy, it just might work."

Less than 25 miles away, Miller was also coming to the same conclusion.

"It kind of came to me happenstance when I was talking it over with my assistant, Jerry Cox," Miller says. "He had heard about the baking soda idea, and suggested we try it. It couldn't work any worse than anything else we'd tried."

**The solution**

Vogel says he played around with the right amount of baking soda to apply during last summer's brutal heat. Since he didn't have any details about an appropriate rate, he experimented with it.

"I was excited, but I was scared at the same time," Vogel says. "The biggest question I had to answer was how to get the baking soda from the box to my greens."

First, Vogel tried to use a saltshaker, but the holes were too small. Then one day while Vogel watched the cook in the course's restaurant shake powdered sugar on to each delectable order, an inspiration came to him.

Vogel took one of the myriad powdered-

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"After having met with limited success with other methods, I decided I needed a new solution."

TOM VOGEL
CERTIFIED SUPERINTENDENT
PORTAGE CC
AKRON, OHIO

Read another Real-Life Solutions on page 88.
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sugar shakers from the kitchen, filled it with baking soda and covered 90 percent of the holes. Then he took it out to his greens and shook it twice. The baking soda landed on the moss, but also landed on the turf surrounding it, causing some phytotoxicity. "Two shakes was far too much," Vogel says.

After more trial and error, Vogel learned the best way to apply the baking soda is to put the powdered-sugar shaker on its side next to the moss patch and gently tap the shaker, allowing a puff of baking soda to land gently on its surface. "It sucks the moisture right out of the moss," Vogel says. "We had what we considered a severe problem, and we got 100-percent control with a little bit of product."

Miller, on the other hand, applies his baking soda two ways. First, he uses a saltshaker for smaller moss spots the size of a quarter or less. For larger moss patches that are inextricably intertwined in the turf, Miller concocts a less "hot" application by mixing 6 ounces of baking soda per gallon of water and applies it with a backpack sprayer.

"It took us a while to figure out what rate worked best for us, but more than 6 ounces was too hot," Miller says. "On the other hand, if you go any lower than that, you won't have the desired effect."

Miller says he also does spot applications with spray bottles, but he warns that the mixture must be shaken periodically to keep the baking soda in suspension. He also raves about the length of control, which can be anywhere from two to four months. "Compared to some of the other products I've used, the control is amazing," he adds.

Outcome
Vogel says he was so pleased with his experiment last summer that he's planning on doing it again this year, possibly suspending it in water like his colleague Miller did. The two downsides — that baking soda is not labeled for turf and the mild phytotoxicity it causes — are outweighed by the positives, which include no weather restrictions on its application and the long-term moss control it provides.

"Once I told my members not to worry about the slight yellowing of the turf in the patches where the moss had been, they were delighted we were controlling the problem," Vogel says. "You're not handcuffed by the calendar anymore."

Miller adds that he plans to apply baking soda to problem greens in the spring and fall this year.

"You always see complete control when you put it out," Miller says. "It's the consistency of the process that I like. My comfort level with baking soda is high."

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Superintendent says he's up to the peculiar turf task presented to him at Las Vegas putting complex  By Doug Cantor

The scene is the 17th green at Augusta National GC, where a mere 8-foot putt will mean the Masters championship. The speed is perfect, the ball breaks just right and the crowd goes wild. One more hole and the green jacket is in the bag.

Suddenly, the roar of a jet engine interrupts your round . . . and your fantasy. Yeah, it's the world-famous green (sort of). But this isn't Augusta, and it surely isn't Sunday afternoon at the Masters.

In reality, it's 3 a.m. and this is Las Vegas, City of Illusion, where the Eiffel Tower, the Great Pyramid and the Empire State Building meet. This latest illusion comes courtesy of The Greens of Las Vegas, a unique putting complex currently under construction near McCarran Airport in Sin City. Slated to open this fall, the 23-acre facility features authentic recreations of the greens from 24 of the most celebrated golf holes in the world.

Even more than it is for golfers, the layout of The Greens is a change of pace for its superintendent, Kent McCutcheon. With its desert location, lack of fairways and four sets of six greens inspired by courses as disparate as Medinah CC and St. Andrews, the complex has significantly different construction and maintenance issues from more traditional courses.

"I don't know of any superintendent who's had to do something like this," says McCutcheon, The Greens' director of agronomy. Formerly the director of golf course operations at Las Vegas Paiute Golf Resort, the 31-year-old McCutcheon is now responsible for maintaining the 24 "inspired by" greens, complete with bunkers and water hazards, as well as two other 18-hole putting courses. In case that were not enough, one of the courses is modeled after Japanese-style greens with a wide variety of vegetation not normally found in the United States.

According to Brent Harvey of San Diego’s Harvey Mills Design, the arid climate poses the biggest challenge to maintaining the greens.

"The Greens of Las Vegas is about 20 acres of turf compared to 90 acres we normally see in the desert," says Harvey, whose golf course irrigation consultancy worked closely with McCutcheon to develop the irrigation system.

"But it is probably equal in terms of the effort."

Fortunately for McCutcheon, the plan is to use the same type of grass for every green. Still, he is going to have his hands full maintaining that much manicured turf.

"We have six acres of bentgrass," he explains. "It's the same as two golf

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Continued from page 78
courses. The greens will get
85 percent of the focus.”

The experienced
McCutcheon, who just
completed his term as presi-
dent of the Southern
Nevada Superintendents
Association, has his own
gallery of supporters.

“He's the best,” says
Eddie Heinen, an amateur
golfer who got the idea for
The Greens of Las Vegas
while playing in Canada
with recent Masters winner
Mike Weir, his old team-
mate from Brigham Young
University. The original
plan was just to hold a series
of putting tournaments.
But over four years of rais-
ing capital, securing govern-
ment approvals and scout-
ing locations, it evolved into
the present project.

"Eddie's added new fea-
tures to make it not so one-
dimensional," says Weir,
who regularly talks with
Heinen over the phone
about the progress of the
project. "It will really work
well in Vegas."

When it opens its doors in November, The Greens will offer free instructional
clinics, a golf camp for kids
and daily putting competi-
tions with sizable cash
prizes. It also will have a pro
shop, a sports bar and a
radio broadcast studio, as
well as the four signature
six-green courses.

Architects from the
renowned Dye Design
Group assisted Heinen with
selection of the greens.
Heinen admits he has
played only two of the origi-
nal holes, Castle Pines
No. 12 and Shinnecock
Hills No. 18. But for him,
that's the beauty of the pro-
ject — now anyone can
take aim at greens that oth-
erwise might never be
accessible.

"Within an hour after
Tiger Woods makes a long
putt at Sawgrass, we can set
it up so anyone can try that
putt," he says.

 McCutcheon will have
to stay on his toes to accom-
modate all of Heinen's big
ideas. Besides all the other
maintenance demands, the
course will be open around
the clock.

"It's a 24/7 town," Mc-
cutcheon says. "You have a
lot of people who get off
work at 2 a.m., and they're
not ready to go to bed."

So far, McCutcheon has
not had much trouble with
the course’s lighting system,
but he is a bit worried it
might create a problem by
attracting cutworms.

Given the never-ending
schedule, it will be hard to
predict when the course will
experience the greatest
amount of traffic or just
how heavy it will be. Mc-
cutcheon has not yet de-
cided when his eight-person
crew will do the bulk of the
prep work, though he says it
could, in fact, begin in the
wee hours of the morning.
In Vegas, there's just no rest
for the weary.

One saving grace unlike
traditional courses: There is
not a first tee that must be
ready in the morning. If
need be, the crew can work
on one set of greens while
people play on the others.

Though he does not
expect to put in too much
overtime, McCutcheon says
the complex will require a
lot of hand-work and atten-
tion-to-detail. Indeed, he
may need to increase the
size of his crew to handle
landscaping after the facility
opens for business. He's also
keeping his fingers crossed
that the once-a-decade
flood Las Vegas is due for
won't come anytime soon.

But with all these con-
cerns, the veteran superin-
tendent remains un-
daunted. Even when
working on a standard
course, he says: "I always
focus on greens first. If
there's anything I want, it's
good greens.

"And," he adds confi-
dently, "we're going to have
the best greens in town."

Cantor is a free-lance writer
from Chicago.