- A 100-gallon Toro sprayer with a handboom for herbicides.
- A 20-year-old John Deere sprayer similar to the Toro 1150.

"We mainly use the Airtec for spraying fungicides on green surrounds and fairways," Biggers says. "It's fast and easy, and we're able to use less product. We cut our rates when we use the Airtec. I have a lot of experience with the Airtec, probably as much as anybody in the U.S., because we've used it for five or six years. We can use as much as half the rate and get the two weeks of control we want when we spray with the Airtec."

The crews don't spray the fairways as much as they used to partly because Biggers removed bentgrass from nine holes and replaced it with zoysiagrass.

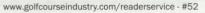
Biggers is fascinated by the technology behind his Airtec sprayer, which deploys electrostatically charged particles into the air at high

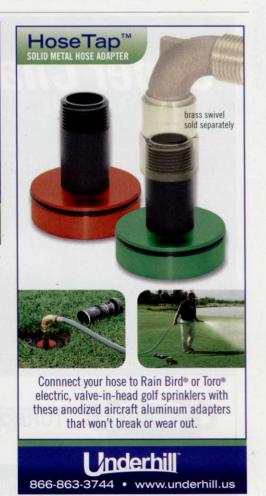


The Wintergreen crews don't spray the fairways as much as they used to partly because zoysiagrass replaced bentgrass on nine holes. Photo: Airtec









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Fred Biggers has a fairly old fleet of equipment, but he credits each machine's longevity to his talented mechanic team. They keep extra pumps, parts, nozzles and fittings around to repair equipment easily. Photo: Airtec

volume and high speed.

"It's unbelievable coverage," he says. "We've had a lot of success with the Airtec. The sprayer paid for itself in two years. I have one of the early ones, and we had to mount it on a pretty large tractor, but it does a great job with fungicide applications."

While Biggers is partial to his Airtec, he prefers to use the Toro 5500 on the fairways. It's much more windproof because of shielded booms.

During the summer, the crew controls weeds monthly with hand sprayers to target areas that can't be reached with the large boom. One application lasts three months and saves labor costs.

The John Deere sprayer also has its own unique purpose: It comes in handy for herbicide applications in tight or sloped areas.

"It stays on the slopes a little bit better because it's lighter," Biggers says. "We've kept the booms on the John Deere. We put a whole new engine on that, a whole new muffler and new controls. It's probably on its fifth



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or sixth pump, but the frame doesn't wear out, and the tank doesn't wear out. It operates well."

Biggers has a fairly old fleet of equipment, but he credits each machine's longevity to his talented mechanic team.

"I've got wonderful mechanics," Biggers says. "We don't think anything of replacing an engine or rebuilding a pump. Everything here works, and works well. We keep extra pumps, parts, nozzles and fittings around so we can fix something without too much drama."

## "If we can do anything to cut costs, we're going to do it. And if we contemplate another sprayer, we're going to look all around." - Fred Biggers

Biggers has been contemplating a new sprayer to replace his Toro 1150, but says that at this point, he might just rebuild the booms (all of Biggers' sprayers have electric booms and T-jet nozzles). The golf courses have a fairly hefty maintenance budget of \$1,575,000 - but considering \$1,025,000 is allocated to Stony Creek and \$550,000 is allocated to Devil's Knob, it's understandable Biggers would rather repair his working machines than shell out the cash for new ones.

"If we can do anything to cut costs, we're going to do it," he says. "And if we contemplate another sprayer, we're going to look all around. We use our sprayers to spray many different things. We spray insecticides and wetting agents one day, and the next day, we spray tees with wetting agents, and the next day, fungicides."

Even with so many operations under way, Biggers manages to keep it all straight.

"It's kind of organizational, but I've been running multiple courses and clubs and resort-type operations since 1988, so it's kind of second nature to me," he says. "It's what I do. I wouldn't know what to do if I went to 18 holes. I guess I'd have to get even more detail-oriented, but you just get used to doing a bunch of different things at once."

And when all else fails, Biggers reminds others you can't always win. "Sometimes you just prevent the worst loss," he says. GCI

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BY MARGARET HEPP

## Spray it right

Opening his fifth golf course, Danny Gwyn relies on two intelligent machines — a turf sprayer and the human brain

anny Gwyn speaks about The Club at Twelve Oaks, just outside Raleigh, N.C., with an easy confidence, but it's not the course's longstanding tradition that gives Gwyn his self-assurance. Twelve Oaks is a new, 18-hole private golf club that opened this month. But Gwyn has 25 years in the industry under his belt. Currently, he's the course's superintendent and regional director of agronomy for ClubCorp, the company that manages Twelve Oaks. In true veteran fashion, he's about to deliver the club's inaugural golf season without a hitch.

There's a lot of pressure that's part of the grow-in process at a new course, but Gwyn kept a cool head when it was time to bring in equipment and supplies. For his sprayers, he went straight to Smith Turf and Irrigation, the Toro distributor that has served him for more than 20 years.

In June 2007, Gwyn purchased a four-year lease on two Toro sprayers – a Multi Pro 5700D for large turf areas and a Multi Pro 1250, which he uses predominately for greens. The leases cost about \$35,000 and \$25,000 respectively, and were part of a \$950,000 new equipment purchase to supply the course and crew.

The decision to lease was based on the developers' needs, not ClubCorp's needs, Gwyn says.

"It spreads out capital dollars further," he says.

The decision to invest in Toro was based on loyalty and past experience.

"In this region of the country, our Toro distributor is solid," Gwyn says. "I've been in the business for 25 years, and it seems like it's been this way for the most part. They're consistent."

With 15 golf courses under his direction, consistency is a crucial element of Gwyn's life and practice as a superintendent. His grow-in was regulated carefully.

In June 2007, Danny Gwyn purchased a four-year lease on two Toro sprayers – a Multi Pro 5700D and a Multi Pro 1250 (pictured). Photo: Toro



"We used the 5700 once a week for various growth regulation applications," he says. "A lot of herbicide sprays were conducted during the grow-in. The 1250 was used at least once a week."

Gwyn anticipates he'll continue to use his 1250 greens sprayer weekly during the rest of the year, but he'll use his 5700 less frequently, perhaps once every two weeks.

"Once we get a more established turf here, we'll probably be doing more growth regulations of the lower-cut grass than herbicide sprays with the 5700," he says. "We'll continue to spray herbicides, but growth regulation will be a big part of our practice."

Gwyn's crew sprayed three fungicide applications in the spring, about six months after the greens were established. Last fall, they sprayed for fall army worms. No insecticides have been applied in 2008. The 5700 was used for both the fungicide and insecticide applications.

The 5700 and 1250 are equipped with T-jet nozzles, each with a triple adapter on the nozzle station. With the help of a \$900,000 maintenance budget, Gywn and his crew are prepared to troubleshoot any sprayer problems as they arise, but the equipment is so new they have yet to run into any malfunctions.

When the four-year leases on the sprayers end, Gwyn predicts he'll stay with Toro for his next sprayers.

"I've been a customer for 20 years, and I've been in the business for 25," he says. "Customer service, from my standpoint, is one of the most critical things when deciding on a piece of equipment. Obviously we want the best equipment, but we also want somebody to stand behind it. Toro, as well as our distributor, has always done an exceptional job in servicing its customers."

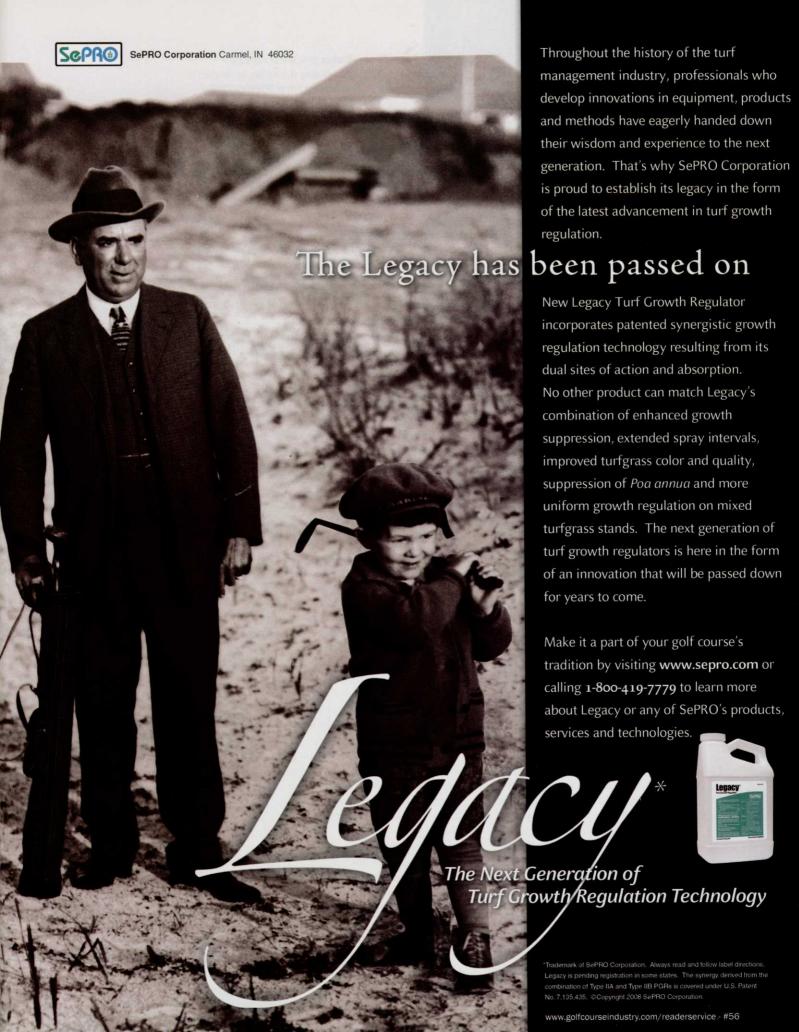
In addition to the Toro sprayers, Gwyn also uses four Shindaiwa SP415 backpack sprayers, as well as several hand sprayers from local hardware stores. During the grow-in process, Gwyn's team used the Shindaiwa sprayers frequently.

"If we have isolated areas for weed control, we'll actually spot spray," he says. "It's labor intensive, but it works well for us."

Even as Gwyn considers the future, he also takes time to appreciate – and apply – the skills he's learned along the way.

"People rely too much on the sprayers' computer technology to make some basic calibration decisions," he says. "To me, the old-fashioned way of calibrating a sprayer is still the most accurate and dependable. The computerized systems are good, but they're not foolproof. That's the biggest thing I tend to see."

Both Gwyn's sprayers have calibration systems, but, as with his course, he takes nothing for granted. He and his crew constantly double-check the computerized calibration against their own basic calibration techniques. But Gwyn will have to wait until he gets through his first season at Twelve Oaks to find out how well his team measured up. GCI





Tim Moraghan is principal of Aspire Golf Consulting in Long Valley, N.J. He can be reached at tmoraghan11@comcast.net or 908-635-7978.

## **RULES FOR SUPERINTENDENTS**

he golf season is in full swing, and televised events have been broadcast weekly since January. For professional golfers, every shot counts, and millions of dollars are at stake. Decisions and disputes about the Rules of Golf are handled by qualified officials using Decisions on the Rules of Golf.

There are numerous rules-related details golf course superintendents must attend to when preparing for tournaments or daily play. Consider the following.

#### **PUTTING GREENS**

There's a single Rule (16) for the putting green. Keep these decisions in mind when placing the final touches on the putting greens:

- 16/4 A hole liner must be sunk deep enough. When setting the hole liner into the green, it should be at least one inch below the surface of the turf. If it's not, there can be added rules issues such as a ball striking the edge and bouncing out of the hole or the ball striking the hole liner when the flagstick is being removed from the hole.
- · 16-1a/6 If a hole liner isn't set correctly and the dimensions of the hole become damaged, the hole might need to be changed, delaying play. This isn't ideal once you've headed home or returned to the maintenance area while the event is under
- · 16-1c This part of the Rule allows for the repair of hole plugs, ball marks and other damage, whereby a competitor may repair a high or low hole plug, ball marks and even a spike mark if it's within the hole plug, ball mark or other damage. An easyto-remember adage in reference to hole plugs: "When they're high, they die, and when they're low, they show."

#### TEEING GROUND

Several items should be considered when preparing teeing grounds:

· Avoid stretching the yardages on golf holes by placing the tee markers a few feet from the back edge of the tee. This doesn't meet the two club lengths required to meet the definition and shortchanges the player's stance if one foot is off the back in the rough.

- · There should be no surrounding obstructions or other plant growth compromising the setup of the teeing ground.
- · Incorrect tee marker alignment can cause player and Rules issues such as play outside the teeing ground, out-of bounds concerns (Rule 27) or a missing tee marker where a player would need to estimate the area for play.
- · Teeing grounds should be smooth, level and firm.
  - · Always consider left-handed players.

#### BUNKERS

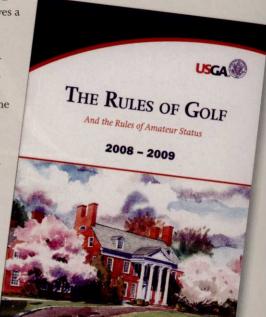
Unfortunately, bunkers have become a favorite place to be, but fundamentally, it's wrong if you're spending more time, and money on sand than turf.

- · When using a mechanical bunker rake, don't leave any ridge or raised sand bank where a player could touch the sand during his backswing (13-4/31), causing a penalty for testing the condition of the hazard.
- · If the wind picks up during an event, remove any debris, such as leaves, twigs or grass, which fall into the bunker. If a player touches any debris, he receives a penalty, according to 13-4/33.
- · Ensure there's no functioning drainage within the bunker. If, during or following a heavy downpour, pumping water is required, then 25-1b/8 will cover the options for the player.
- · To meet tournament-level expectations of bunker preparation, the hazard must have a clearly defined margin. No rocks or stones should be within the hazard, and sand should be the proper depth.
- · Miscellaneous decision (Misc./2) suggests bunker rakes should be left outside bunkers in

areas where they're least likely to affect ball movement.

#### MISCELLANEOUS PREPARATION DECISIONS

- · If you have a problem with fire ants, Rule 33 and its decision 33-8/22 allow you to treat ant hills as ground under repair, and the appropriate relief would follow.
- · If your staff misses a pile of clippings, then decision 25/11 indicates the clippings are loose impediments, whether or not they're piled for removal, and may be removed by the player - then Rule 23-1
- · The Tournament Players Championship, which was contested in May at Ponte Vedra, allows for the marking of the famous island green (17th hole, par 3) under decision 33-2a/10. The committee may mark the water behind the hole a lateral water hazard for daily play. For the championship, they may mark it as a regular water hazard and establish a dropping zone, giving the player whose ball is in the hazard an option for where to play his next stroke.
- · Finally, for those who chew tobacco and occasionally miss the target, Rule 25 and decision 25/6 provides the status of saliva, and in equity (Rule 1-4), saliva can be treated as an abnormal ground condition (Rule 25-1) or as a loose impediment (Rule 23-1) at the player's option. It's nasty, but it's the rules. GCI





**EQUIPMENT IDEAS** 



**Terry Buchen**, CGCS, MG, is president of Golf Agronomy International. He's a 38-year, life member of the GCSAA. He can be reached at terrybuchen@earthlink.net.



## Travels With **Terry**

Globetrotting consulting agronomist. Terry Buchen visits many golf courses annually with his digital camera in hand. He will share helpful ideas relating to maintenance equipment from the golf course superintendents he visits — as well as a few ideas of his own — with timely photos and captions that explore the changing world of golf course management.

## Roof addition

Steiner four-wheel drive tractor comes equipped with a built-in roll bar. But to protect her workers from sunlight and rainfall, Karla Cora, director of golf course operations at the Palmas del Mar Country Club in Humacao, Puerto Rico, had the equipment manager mount a used roof from an E-Z-GO golf cart to the roll bar. This was done using two 1-inch-square metal tubing brackets, which were bent at one end with a torch and then welded to the roll bar. The rear portion of the roof was mounted to the top of the roll bar with two 3/8-inch-diameter bolts, nuts and lock washers. The front end of the roof was bolted to the square tubing with the same size nuts, bolts and lock washers through 1/4-inch-diameter holes drilled into each angle iron bracket. A 1-inch-diameter PVC pipe coupling was glued underneath the front center portion of the roof using PVC glue. In the underneath rear portion, a 1/16-inch-diameter wire was strung to allow the pointed end of an umbrella to be mounted into the PVC coupling. An umbrella handle can be held in place by the wire.

The square tubing, hardware, flat black enamel paint and umbrella were purchased for about \$40, and the labor time was about two hours.





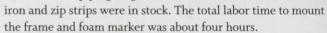
## Spreader protection

he pendulum action spreading unit that distributes granular products on the rear of a Vicon spreader can be damaged when backing into a parking space – especially against a wall – in a turf care center. Karla Cora, director of golf course operations at the Palmas del Mar Country Club in Humacao, Puerto Rico, wanted to prevent this. So one of her staff welded a 2-inch-diameter, hollow steel tubing frame to the frame of the Toro Workman, on which the Vicon is mounted. The metal pipe was welded together and spray painted with a flat black enamel.

One of Cora's staff also mounted a four-gallon Richway Turf-Marker foam marker, which has a single drop nozzle, on the right side of vehicle. Two <sup>3</sup>/<sub>8</sub>-inch-diameter bolts were welded to the bottom of the vehicle's frame. One-inch angle iron, lock washers

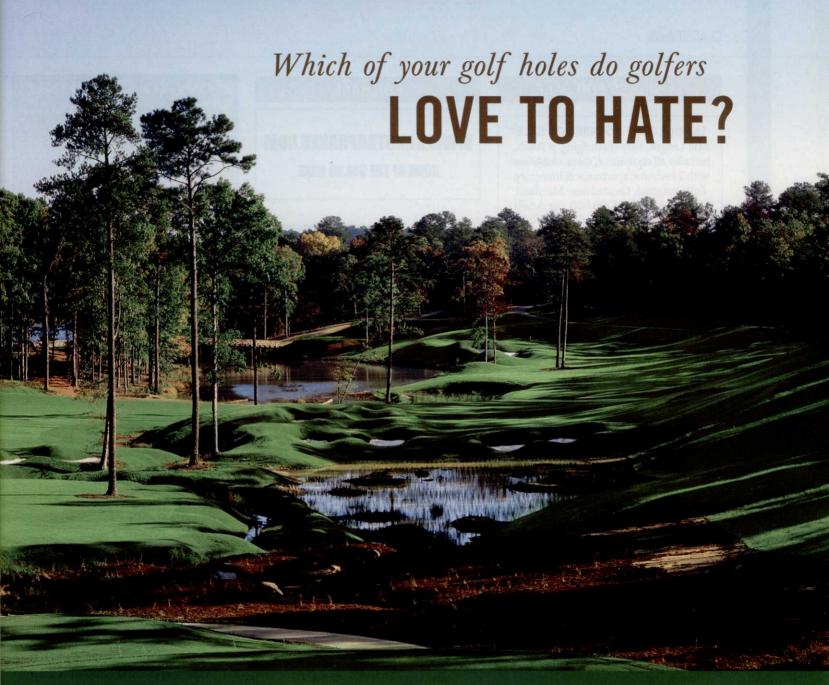
and nuts were placed over the top of the tank to hold the foam marker in place. The single foam marker nozzle was mounted with <sup>3</sup>/<sub>8</sub>-inch-wide zip strips strung through <sup>7</sup>/<sub>32</sub>-inchdiameter holes in the right rear fender.

The foam marker cost \$480, and the piping, angle









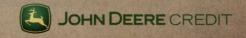
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