

# FEEDING THE GREEN



Fertility practices throughout the country vary greatly. Though many superintendents still use granular products, the distribution of the product across the surface is the focus. Photo: LESCO

BY T.R. MASSEY

## STEADY GROWTH AND FOLIAR APPLICATIONS ARE KEY TO MOST FERTILITY PROGRAMS

**A**mong the multitude of tasks any golf course superintendent must perform, maintaining a nutrition program is among the most important.

Throughout the years, golfers have come to expect lush, highly manicured turf conditions. Though vegetation varies throughout the United States, green is synonymous with golf.

Giving plants what they need to stay healthy and lush isn't easy, and when it comes to turfgrass on golf courses, there's a thin line to walk.

"What we do for the health of the turf is at odds with what we do to make a great playing surface," says Todd Lowe, an agronomist for the Florida region of the U.S. Golf Association's Green Section.

Among the 16 or so nutrients needed by plants like turfgrass, the most important three are nitrogen, phosphorous and potassium (NPK). Secondary elements such as calcium, sulfur and magnesium, as well as other trace elements, are needed for specific circumstances depending on climate and soil.

Man-made or organic fertilizers are compounds that help turfgrass grow and are applied in granular form or sprayed on the plant. But turfgrass doesn't know the difference between fertilizers that have been manufactured or come from natural sources such as peat.

### SLOW, STEADY GROWTH

Pat Gross, the USGA Green Section's Southwest director who's based in Santa Ana, Calif., has seen trends in golf course fertility programs throughout the past decade.

"Nearly all golf courses spray fertilizers on greens now," he says. "They premix fertilizer the night before, fill the tanks and get it done faster."

Fertility practices vary greatly throughout the country. Though many superintendents still use granular products, the distribution of the product across the turf surface is the focus. It's easier to use liquid when microapplying fertilizers, Gross says. The reason for liquid fertilizer use is the heightened expectations of putting surfaces, the area of a golf course that receives special focus regarding fertility programs.

"They're spoon-feeding," Gross says about superintendents. "Instead of a half-pound once a month on the greens, they'll apply a tenth of a pound once a week. Light, frequent applications are what's known as spoon-feeding."

The turf must have what it needs to remain healthy and grow.

"You don't want spikes in growth because that slows down greens and creates more clippings," Gross says. "Spoon-feeding lets you maintain steady growth. Of course, lots of things go into the speed of a green, but fertilizer is one aspect of it."

Even though fertility programs vary throughout the country, spraying is the biggest trend, Gross says.

"In the Southwest, salinity and sand issues come into the management of the fertility program, but overall, spray equipment has gotten

more sophisticated," he says. "Also people see their neighbors doing it, and they have to keep up with the Joneses."

Dedicated sprayers allow superintendents to apply fertilizer at low rates. And fertigation – the practice of injecting fertilizers through the irrigation system at low rates – helps keep turf growing at slow and steady rates, especially on fairways, tees and roughs. This mechanical evolution has allowed fertility programs intended for greens to expand.

"Putting green aprons are now getting attention," Gross says. "They're extending these programs away from the greens."

### TWEAK THE PROGRAM

Across the country in Arundel, Maine, the course at Dutch Elm Golf Club features bentgrass and *Poa annua* on the greens, tees and fairways, and ryegrass and bluegrass in the rough. Golf course superintendent Jeff Hevey, who's been at Dutch Elm for 15 years, has noticed the same trend of using liquid fertilizers.

"The biggest change I've noticed is that I've started using liquids," he says. "For our fairways, we used to do three applications a year, and for the first time, one of those applications will be a liquid. We do it in June, July and August, and the first week of September is liquid for the greens."

Hevey always uses a granular fertilizer on his tees, which are cut at higher heights than the rest of the course.

"The only problem with granular is that we have a bit of a problem with people mashing it into the ground when we have a lot of play, but it does OK," he says.



Todd Lowe (wearing the white shirt) of the USGA holds a soil sample while discussing nutrient management with a golf course superintendent and green committee. Photo: USGA

Like most superintendents, Hevey is constantly tinkering with his fertility program. Last year, for instance, he used Polyon time-release fertilizer to make it last longer.

"They say you can put it down at a high rate and have it last all year, but there's not enough research yet," he says. "It will be great for baseball fields, college areas, maybe roughs. I'm not sure about closely mowed areas. We put it in the fairways and roughs, and it worked well. It's pretty expensive. That's one of the drawbacks."

Although fertigation is becoming a big deal, Hevey doesn't use it.

"It's a little expensive, and I don't think my irrigation system is good enough for it," he says, noting the system was installed in 1987. "I have a lot of heavy clay soils, so I don't have to water as much as other people; but it doesn't take as much water to get the ground where I want it to be," he says.

#### STICK TO THE BASICS

Experimentation with fertility programs can be good and bad. Bud White, the mid-continent region director for the USGA Green Section who's based in Carrollton, Texas, says superintendents need to be educated.

"Guys need to do regular soil tests," he says. "They need to have that as a part of their program

— how they build their fertility. Some companies have alternative fertility programs, but they don't base them on sound soil tests all the time. That's a mistake. Their claims are made about different products, and there's no university research. There's no proof they're beneficial. Testimonials aren't the same as university research about a product."

Every fertility program has its basis in NPK, a necessary fundamental.

"A lot of people have gotten away from a basic sound nutritional program," White says. "Many alternative programs don't have a basis in science. It's been happening throughout the last four or five years, and they've started to spread. NPK is still the best program."

For young people coming into the profession, White stresses focusing on the basics.

Superintendents also should stay mindful of the fact that fertility programs go hand-in-hand

with water management.

"Too much water can move phosphorous and nitrogen to ground water," White says. "Those are the main polluters of fertility. A modest amount of fertilizer can run off when a guy is overwatering. You have to manage your water programs as well as fertility for environmental concerns and good turf management."

#### A GOOD MIX

An example of experimentation and region-specific practices can be found in Florida. Bill Brousseau, the director of golf course maintenance at The Club at Admiral's Cove in Jupiter for 18 years, and his two superintendents, Steve Judd and Shannon Wheeler, have concocted a special fertility program that works well at his 45-hole facility. "What we're doing is working for us," he says. "I don't know if it would apply to someone else. It's a different ball game everywhere you go."

The Bermudagrass courses Brousseau maintains lie on sandy soil, of which he takes samples twice a year. The results provide a benchmark for his applications even though there are separate programs for the greens and the rest of the course.

"We go out on a monthly basis with a granular fertilizer, and depending on the time of year, what we want to achieve and weather conditions, that will pretty much dictate what fertilizer we put out each month," he says about areas other than the greens.

On the TifEagle greens, Brousseau uses a granular fertilizer two or three times a year.

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**— BUD WHITE**

After the granular applications, he sprays the greens to maintain a constant, manageable growth.

"Generally, we use a granular when we're going into our aerification program," he says. "We do a lot of aerifying, verticutting and topdressing. We manage to keep an 18-hole course closed for 30 days so it's healed like nothing ever happened."

Because the turf grows aggressively, Brousseau must closely monitor his fertility program. For foliar applications on greens, he uses various products in his spray tanks.

"We've got our secret recipe that we would never divulge," he says with a laugh, adding that he truly would be happy to share with his peers who are interested.

Rainfall and the time of year also factor into Brousseau's program.



Corcoran

"When we get into periods of large rainfall, it could leach our soils," he says. "We like to keep the turf lean and hungry. Keeping thatch levels down helps keep out disease."

Lowey sees many superintendents in Florida using



Hevey

sprays and special mixtures.

"Because our standards are increasing, the goal is to maintain a consistent putting surface, so light, frequent applications are the trend," he says. "Because our greens drain well, they lose nutrients quickly. It's in constant flux. In the Southwest, the program will be different because they get less rain."

**PLAN AHEAD**

At Oak Hill Country Club in Rochester, N.Y., superintendent Jeff Corcoran must work diligently to maintain his mix of the right amount of fertilizer for the time of year and soil conditions. During the winter months, he doesn't have to worry as much as superintendents in the South. He uses the time to plan.

"We go through agronomic planning every year, in February and March," he says. "We take our fertility plan and agronomic issues and do a rough layout for the course for the year. We talk about the products we might use. It's a base

plan, a projection."

Corcoran evaluates his fertility program every year and tweaks it a bit. His base program stays the same every year, but there are always new products or technology or formulations that he might want to try.

"Seldom do we go wholesale with a new product," he says. "We do a test mode and slowly incorporate it into our program."

Unlike Hevey, Corcoran uses his irrigation system to augment his fertility program. He uses fertigation primarily on tees, fairways and rough. "But there are times of the year when you get lots of rainfall and can't rely on fertigation as a primary resource," he says.

Oak Hill has hosted several major tournaments throughout the years and is viewed as one of the country's best courses. Therefore, Corcoran does his best to stay on the cutting edge, which, at the moment, means sticking with the program he's developed throughout

the years.

"Nothing at the moment strikes me as real innovative," he says. "We've always stuck with a foliar program on the greens. We spoon-feed. We're about 90-percent foliar on our greens."

Throughout the golf season, Corcoran applies foliar fertilizer, then granular fertilizer. He also uses organic fertilizer lightly in coordination with aerification and tries to go lightly with nitrogen, especially on the greens.

"You have to get the right combination, not too light or heavy," he says. "It's being out there and observing the clipping yields we get off the greens. You get a real feel after a while from a visual inspection. A lot of it is experience and being out there every day. Some of it's intuitive." **GCI**

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