

The Bridges at Santa Fe features G6 putting greens.

# Tried and True

Newer bentgrass varieties boast lower inputs than older types

BY DAVID FRABOTTA, SENIOR EDITOR

**S**peculation that newer bentgrasses could require more intense maintenance practices might have slowed early adoption, but those who ventured into the A and G varieties appear pleased with their performance, and so are their members.

"They're a lot easier to maintain than people would have you believe," seasoned superintendent Mike Hathaway says about his G6 putting greens at The Bridges at Santa Fe in California.

The As and Gs emerged through natural selection on Augusta, Ga., golf courses. (Many speculate they came from the par-3 course at Augusta National, hence their names, A for Augusta and G for Georgia.) They've evolved presumably from Penncross, the 62-year-old variety that spawned many new cultivars and is still the most widely used bentgrass today. The specific details on where and how they came to exist are trade secrets.

But there's no secrecy surrounding their development. Dr. Joe Duich of the Pennsylvania State Turfgrass Research Center and

breeding program collected samples and brought them back to his experimental putting green in University Park, Pa. Once he tested them there, he conducted field tests at Pinehurst Golf Club (which eventually selected G2 on all its courses) and the cultivars became commercially available to superintendents in 1997, a full 10 years after Duich began gathering samples from around Augusta, says Bill Rose, president of Tee-2-Green, which markets and distributes the Penn As and Penn Gs.

Today, hundreds of courses don A and G varieties, which were ultimately selected from trials for their canopy density, color, disease resistance, heat tolerance, upright growth and tolerance to low mowing heights.

"There is no doubt that the new bentgrasses, with the density of the turf and the ability to mow them lower, has brought a higher quality to putting surfaces," says Steve Merkel, agronomy manager for Landscapes Unlimited.

Some of the maintenance hallmarks for the As and Gs include lower fertility requirements, less-frequent irrigation and lower overall water

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Equipment advances supplement traditional cultural practices to help control thatch.



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consumption. Many superintendents also cite fewer disease problems, partly due to better disease resistance compared to older bentgrasses and partly due to maintenance practices.

Cultural practices, mainly topdressing and aerification, haven't posed the challenge that skeptics thought they would, either. For the most part, managing organic matter is similar to older bents despite the denser canopy of

the As and Gs. And some of the early problems reported in these varieties likely stemmed from cultural practices held over from the older bents.

"The perception used to be that they were high maintenance, but all the problems people were having were being created by what they were doing," says Chris Gray, director of golf course operations at The Marvel Golf Club at Kentucky Lake.

### Foliar feeding

As many in the turf maintenance industry continue to debate benefits of granular or root feeding versus liquid feeding, most A and G turf managers gravitate toward spoon-feeding foliar nutrients.

Denser canopies, lower mowing heights and desires to maintain consistent growth all contribute to the liquid feeding frenzy, says Cale Bigelow, Ph.D., a professor with Purdue University.

"It all comes back to trying to manage those growth flushes with the topdressing,"

PHOTOS BY: TIM CARPENTER



he says. "Matching those up is pretty critical."

By and large, superintendents are feeding A and G putting greens every seven to 10 days with low rates.

"I've broken it down to about 1/10 of a pound a week," Gray says.

His 3-year-old A1/A2 greens get about 4 pounds of nitrogen a year, compared to 6 pounds to 7 pounds with older varieties. He says the lower rates, in conjunction with more frequent applications, allows him to coordinate growing rates with his topdressing program and keep turf plants healthy while keeping stress levels low.

"It's lean and mean. You have a leaf blade that is substantially thinner than the older bents, so they really don't need the amount of nutrients like older bents," Gray says. "If you overfeed, then you are going to get a lot of thatch and you are going to get a puffy look to them because now you have a fat little grass plant that needs to go on the Atkins diet."

Similarly, Tim Carpenter, superintendent

at the Gaston Country Club in Gastonia, N.C., has pulled back to about 4 pounds to 4.5 pounds of nitrogen a year on his 3-year-old A4 greens. In addition, he uses about 2.5 pounds of phosphorous, 14 pounds of potassium and 24 pounds of calcium.

"Sand-based greens have prompted calcium to get a lot of attention for the overall vitality of the soil and nutrient exchange between the plant and the soil," Merkel says.

Potash gets its fair shake, too. At The Bridges at Santa Fe, Hathaway uses a 1-2-4 ratio, he estimates.

If nutrients are best used a little at a time, irrigation is just the opposite.

### Water analysis

In an era where news crews conduct live broadcasts about freshwater conservation in front of water-spewing golf properties, superintendents will be happy to know that weekly deep irrigation works well with the As and Gs.

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**Tim Carpenter's weekly deep irrigation at Gaston Country Club forces roots deep into the soil profile in search of water.**

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## Tried and True

Core harvesting two to three times a year manages the thatch layer of As and Gs successfully despite their denser canopies.



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"If I had to pick just one major difference, then I'd have to say it's with the irrigation practices because the As and Gs don't like to be watered nightly," Gray says.

Superintendents are giving newer bents a good soak, between 30 minutes to 90 minutes, generally one day a week. Then as dry spots appear toward the end of the week during hot months, hand watering with wetting agents is enough to maintain them until the next flush.

With that protocol, roots systems reach well into the 12-inch sand profile for the necessary root development that helps them thrive in hotter months. Also, disease occurrence falls due to limiting excessive moisture that might attract pathogens.

"Whenever you can only put down water that you absolutely need, then that's your best-case scenario," Gray says.

As a cumulative result of closely managing growth flushes, less-frequent watering and perhaps heightened disease resistance, Gray eliminated two to three fungicide applications.

"I really saved more money because I didn't need to go out there and spray because I wasn't putting the water on that would really bring the dollar spot, brown patch and, in the worst-case scenario, the pythium," he says.

### **Cultural practices**

Managing organic matter was an early concern for many of the newer, denser bentgrass varieties, so many early adopters augmented topdressing and aeration programs to combat suspected thatch layers.

"Some people were so scared that they got real aggressive and ended up shooting themselves in the foot," Bigelow says. "They were topdressing too much during stressful times of the year and maybe dragging it in and causing some mechanical damage."

So as it turns out, the thatch hasn't developed measurably faster than older varieties, and the layer that has developed has been minimized by slightly more-frequent topdressing.

"Now we're throwing topdressing on so much more often and so lightly that you don't need to brush it in; you can just water it in," Merkel says. "So the maintenance arsenal is about the same, superintendents are just doing it differently."

Carpenter says the greens at Gaston regularly test between .3 percent and 1.5 percent organic matter.

"We had pretty high organic matter before we rebuilt the greens (in 2004) — up around 5 percent on some," he says.

Part of the reason, Carpenter says, was that his predecessor reduced the size of aeration tines to quarter-inch pegs because golfers were complaining about play disruptions. But Carpenter went back to a larger tine to control the course's thatch layer, and he punches the greens twice in the spring and once in the fall, which was the same protocol he used with PennLinks, the previous putting surface at Gaston.

"I have stepped up my topdressing program a bit," he says. "Last year I put down about 35 cubic feet of sand per 1,000 (square feet) on my green. And that was basically 10 to 11 cubic feet from three aerifications. The rest was bi-weekly 1 to 2 cubic feet (per 1,000 square feet) topdressing to make up the difference."

Now that agronomists have wrapped their brains around the best maintenance practices with some of the 10-year-old cultivars, the industry prepares for a whole new guessing game with the newest cultivars that inevitably will make their way to a golf course near you soon.

Among the most promising for putting greens are Declaration for its dollar spot resistance, Alpha for its genetic color and LS-44 for its overall visual quality and heat tolerance, according to results from the National Turfgrass Evaluation Program. ■

Weekly deep irrigation can limit disease occurrence by limiting excessive moisture that can attract pathogens.