

## Converting Bentgrass Putting Greens To Diamond Zoysiagrass

**The Walker Golf Course at Clemson University**  
**Don Garrett, CGCS, superintendent**

**Clemson, S.C. 29634**

### Issue

The Walker Golf Course at Clemson University had 20-year-old creeping bentgrass putting greens with an excessive thatch layer and significant contamination from bermudagrass and *Poa annua*. Converting the putting greens to an ultradwarf bermudagrass cultivar was not practical due to the amount of shade at several putting green sites. Rebuilding the putting greens and replanting with bentgrass was also impractical because the hot and humid environment made bentgrass management in summer extremely difficult. In addition, bentgrass would have to be planted in the fall. This would put the golf course out of commission during the busiest time of the year, football season. The Walker Course needed putting greens that could tolerate hot, humid weather and shade.

### Action

Superintendent Don Garrett, CGCS, researched the issue and discovered that other golf courses with similar shade issues had installed Diamond zoysiagrass, either on their shadiest putting greens or on all 18 holes. Garrett and his staff converted the ultradwarf bermudagrass chipping green at the Walker Course to Diamond zoysiagrass to test its performance in their environment and to better understand the conversion process. The next step was visiting other golf courses with Diamond zoysiagrass putting greens to study their playing conditions. Garrett also consulted with turf researchers at Clemson University, as well as the general manager and golf professional at the Walker Course. All the key decision-makers agreed to converting all the putting greens to Diamond zoysiagrass in the summer of 2015.

The golf course was closed for eight weeks during the conversion project. The conversion process included the following steps:

- Bentgrass turf was stripped from the putting greens using a specialized machine.
- Approximately 0.5 inches of sand topdressing was rototilled into the upper root zone to a depth of 6 inches to dilute the remaining organic

layer. This process also eliminated collar dams and ensured adequate surface drainage.

- After tilling, the putting greens were fumigated, floated and sodded with Diamond zoysiagrass.

The conversion process took four weeks and the new turf needed an additional four weeks to establish before the putting greens could be opened for play. The project took 54 days from start to finish.



*The new Diamond zoysiagrass putting greens were established with sod. Sand topdressing and rolling helped smooth out the surfaces and eliminate sod seams.*

## Results

Converting the putting greens to Diamond zoysiagrass has been very successful. Year-round playability has improved and there have been significant resource savings. Green speeds were slow initially because the new turf had to be mown at higher cutting heights. However, the putting greens rolled very smoothly due to periodic heavy topdressing and rolling with a 3-ton asphalt roller, even though sod seams were still visible until the greens were fully established.

Annual cost savings have been significant. The new putting greens require less fungicide, fertilizer and hand watering. In addition, approximately \$8,000 in electricity costs is saved annually by not having to operate fans during summer.

While golfers were initially concerned about the conversion, they are now enjoying the benefits of the new putting greens. The putting greens are no

longer aerated in March and September; they are aerated once in the summer. This means more golfing days during the preferred playing seasons. The new putting greens require much less hand watering, which reduces the inconvenience for golfers. In addition, ball marks are virtually non-existent.

The biggest challenge in this project was overcoming golfer concerns about the new turf species. A limited number of courses have Diamond zoysiagrass putting greens in the area, so golfers were unfamiliar with how the new turf would play. Golfers were particularly concerned about the possibility of slower green speeds in the summer months. While it can be difficult to maintain higher green speeds on zoysiagrass putting surfaces, other superintendents with Diamond zoysiagrass have managed speeds of 9 to 10 feet daily during summer. Those speeds are as fast, if not faster than the old bentgrass greens would be during summer, and the zoysiagrass would be much healthier at that time of year. During other seasons, it is possible to maintain faster green speeds; but for the Walker Course, which is open to the public and caters to golfers of all skill levels, speeds of 9 to 11 feet are plenty fast.