

8. Effect of Creeping Bentgrass Seeding Rates and Traffic on Establishment of Putting Greens during Renovation

Thomas O. Green, Eric C. Chestnut, and John N. Rogers, III

Cutting edge advancements in biotechnology and genetic engineering have allowed turf breeders to introduce species and varieties of grasses with outstanding germination rates and physiological characteristics. Depending upon the current demand and limited availability of these improved grasses, turf managers can expect to pay exorbitant prices for such seeds. Generally, renovation entails complete conversion yet very little data exists that identify a cost-effective, optimum creeping bentgrass (*Agrostis stolonifera*) seeding rate. Contrary to popular belief, in an effort to circumvent weed competition and minimize disruption of golf rounds played in the first season following renovation, using higher than recommended seeding rates negatively affects plant health. Although speedy establishment can offset costs and revenue loss, it is uncertain if high shoot density turf can withstand early season traffic. One method that could address these concerns is using improved creeping bentgrass varieties at, or near the lower range of the recommended seeding rates of 0.5 -1.0 lb/1000 ft². The goal of the study was to evaluate the effects of various seeding rates and traffic initiations on the establishment of a sustainable putting surface following renovation. The site was a USGA putting green (0.125-in cut height, 5-d weekly), strip plot, factorial-design (6 x 4) with 8 blocks at Michigan State University. Main plot factor was 'V8' creeping bentgrass rate (0.125, 0.25, 0.5, 0.75, 1.0, and 2.0 lb/1000 ft²) and strip plot factor was traffic initiation (May, June, and July). Plots were seeded in August 2012 and replicated in 2013. Traffic treatments occurred 3x weekly (4 passes) using a Jacobsen® PGM 22 with 116-“Black Widow” Softspikes®. Turf density was rated qualitatively (visual percentage plot area of turf cover), and quantitatively (chlorophyll and NDVI meters, Spectrum Technology). Rooting strength data was collected using a shear vane tester from Turf Tec International. Preliminary results showed no significant difference (rooting strength, chlorophyll index) between 0.75 and 2.0 lb/1000 ft² seeding rates. Data garnered from this experiment will improve upon renovation techniques that both reduce costs without compromising turf quality.

Stop 9. Establishment Studies for Creeping Bentgrass Greens

Eric C. Chestnut, Thomas O. Green, and Dr. John N. Rogers, III

New creeping bentgrass varieties, harsh winters, and a number of other environmental factors are forcing some superintendents to consider renovation of golf course putting greens. The purpose of this study is to find an ideal plan to establish a new creeping bentgrass putting green surface using four different factors. *Agrostis stolonifera* var. Pure Distinction was seeded into a sand-based profile (95/5 root-zone medium) in August of 2013. Two of the factors, mowing height and fertility rate, were started in the fall and the other two factors, verticutting and PRG regimes, were initiated the following summer.

Mowing heights were initially at 0.200” and 0.150” and were reduced by 0.010” and 0.005” each week, respectively, until a height of 0.125” was reached for both treatments. The nitrogen (46-0-0) fertility rates that were used were 0.05 lb N/1000 ft², 0.10 lb N/1000 ft², and 0.15 lb