TourTurf FDC to Enhance Turfgrass Colour and Health

a proposal submitted to E. Marker A/S

by

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Background: Maintaining a quality putting green surface requires sound management practices such as proper fertility, irrigation, cultivation, mowing, and pest management. Northern European golf courses benefit from the proper implementation of the aforementioned management practices; however, fungal diseases like Fusarium patch are a common problem on northern golf courses. TourTurf FDC is a product that has demonstrated potential for enhancing turfgrass colour and health by decreasing the occurrence of Fusarium patch incidence. The likelihood of German greenkeepers adopting TourTurf FDC technology would increase if a study were conducted on a German golf course that demonstrated its potential benefits.

Objectives: To improve turfgrass colour from sequential fall applications.

To improve turfgrass health by lessoning the occurrence of Fusarium patch.

Methods: ***Experimental area.*** The proposed study was conducted at Golf Club Hittfeld E.V. in Hamburg, Germany, on a sand based putting green in a 1,000 m^2 nursery. Treatments were applied to individual 1 x 1 m plots with four replicates. Treatments were initiated in early fall 2011 with 28 days separating follow up applications for a total of five applications. Treatments included TourTurf FDC, a commercial fungicide, and an untreated control for comparison.

Evaluations. Evaluations were made from digital images taken of the plots at regular intervals. Digital images were acquired using a standard camera and lighting system to ensure the images are of high quality and are unaffected by ambient light. The images were analyzed using SigmaScan software for: 1) percent green coverage and density, are used as an estimate of field safety, 2) turf colour is used to estimate treatment residual and efficiency 3) Fusarium patch incidence was visually estimated on a percent scale (0-100%) and compared to digital image analysis percent green cover ratings.

Data analysis. For each evaluation, a one-way analysis of variance was computed to determine if the effect of fertilizer source is significant ($P < 0.05$).

Results: ***Turf color.*** After the first treatment application the Dark Green Color Index (DGCI) was greater for the TourTurf FDC plots than the control plots on three of the five rating dates (Fig. 1). The DGCI ratings for the TourTurf FDC plots were significantly greater than the Stratego plots on the last two rating dates. These findings are very encouraging in that the increased DGCI ratings were greatest for the TourTurf FDC plots later into the fall (21 November – 9 December) when cooler winter temperatures increase turfgrass dormancy.

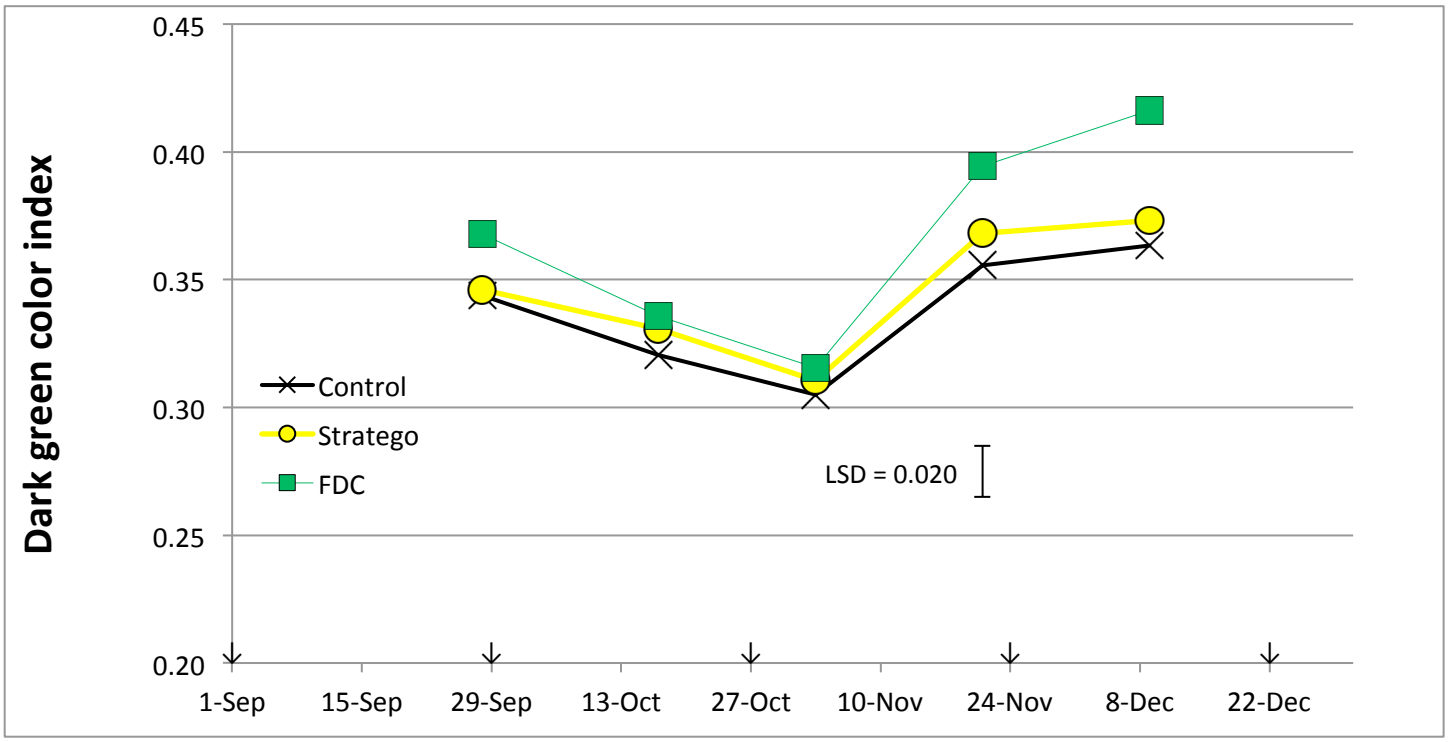

Figure 1. Dark Green Color Index for TourTurf FDC Turfgrass Colour and Health Study, Hamburger Land and Golf Club, Fall 2011.

Turf coverage. After two treatment applications, both the TourTurf FDC and the Stratego plots had significantly greater percent green cover then the control plots (Fig. 2). Although these percentages are between 99 and 100 %, the slight differences may be a result of the subtle differences caused by Fusarium Patch.

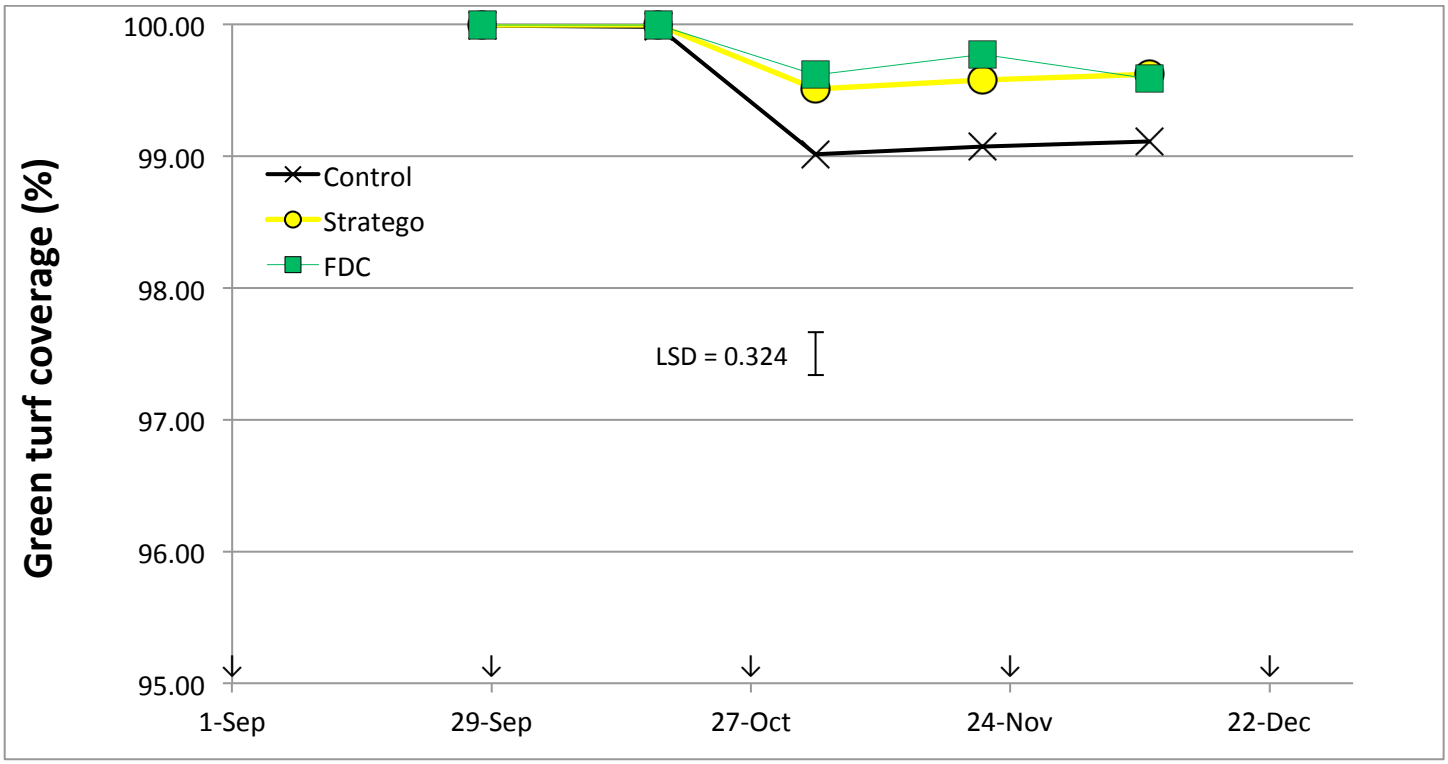

Figure 2. Percent Green Cover for TourTurf FDC Turfgrass Colour and Health Study, Hamburger Land and Golf Club, Fall 2011.

Conclusions: The TourTurf FDC treatment provided darker green color and greater turf cover then the Stratego and control plots. In addition, there were no occurrences of Fusarium on either the TourTurf FDC plots or the control plots; however, two of the Stratego plots showed minor incidence of Fusarium.