MOWER MAINTENANCE STUDIES – 2006

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All of us in this industry have probably heard and prescribe to the notion that as the quality of cut decreases turfgrass color and quality decreases, potential for disease increases and in the case of the putting surface playability also decrease. In response to this turfgrass professionals spend a great deal of time on mower maintenance. However, there is very little data to help guide us towards what the best mower maintenance practices might be.

To help address these concerns two mower maintenance studies were held at the Hancock Turfgrass Research Center during the growing season of 2006. The studies were held on a "Crenshaw" creeping bentgrass green that measured 120' x 120'. "Crenshaw" was the chosen bentgrass cultivar due to its susceptibility to dollar spot in our region.

Study number 1 ran for three weeks and was used to compare three different bedknife thicknesses and the effect they had on playability. Nine John Deere 220B walk-mowers were utilized during this part of the study (three each with the different bedknifes). Plots we mowed six days per week at 0.150 bench setting and data was collected with a Stimpmeter, Pelzmeter, and by visual quality ranking at the end of the three week period.

Results (Table 1 below) indicated the green speed increased by approximately 1-foot by using the thinnest bedknife as compared to the thickest bedknife. Additionally, there was no statistical decrease in quality between any of the bedknifes, in fact the lots mowed with the thickest bedknife resulted in the poorest numerical quality.

Table 1.

PGA TOUR Bedknife Study 2006 Season Average Green Speed Measurements		
	Season Average Pelzmeter Measurements	Season Average Stimpmeter Measurements
	Significant Data*	Significant Data**
Thinnest	107.44 a	110.83 a
Medium	103.11 a	104.17 a
Thickest	95.89 b	98.00 b
Probability	0.00	0.10

*Average of four Pelzmeter measurements statistically significant within a probability of 0.05.
** Average of two Stimpmeter measurements statistically significant within a probability of 0.10.

At the conclusion of Study I the bedknives were removed from each mower and identical bedknives were placed on all nine mowers. Three mowers were set-up to mow with no contact and the other six were set-up with more relief (as recommended by John Deere) and to mow with contact. Furthermore, three of the six that have the relief grind and contact were back-lapped periodically throughout the study (every two-three weeks) while the other three were never backlapped.

Data collection included: green speed measurements, clipping collection, weekly quality ratings, and dollar spot counts on one occasion (so far). We would very much appreciate participants' rate each of the nine plots on a scale of 1-9 prior to discussing the current results of this portion of the study.

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