Turfgrass quality has historically been evaluated by visually rating turf plots (Krans and Morris, 2007). Although visual ratings provide quick data acquisition without the need for specialized equipment, they are a subjective measurement that is dependent on human bias. As a result, there are often inconsistencies among raters when they evaluate the same turf plots (Horst et al., 1984; Skogley and Sawyer, 1992). In a study by Horst et al. (1984), 10 trained turfgrass researchers visually rated the same turfgrass stands for quality and density to determine the uniformity of their evaluations. In that study, there was more variability between the ratings of multiple evaluators for the same cultivar than between the ratings of one evaluator for multiple cultivars. Although Horst et al. concluded that subjective evaluations of turfgrass plots were inadequate in many situations, these methods continue to be used extensively more than 25 yr later. Even though the turfgrass research community often receives criticism for its overuse of visual rating data, advancements in turfgrass breeding and management practices have directly resulted from research where visual ratings were the primary evaluation method. In addition, visible quality is a very important characteristic to end users in the turfgrass industry, so its evaluation by visual means may be warranted. Nonetheless, the implementation of objective evaluation tools to either replace or supplement visual ratings would benefit turfgrass researchers.

Digital image analysis (DIA) has been implemented as a research tool across agricultural disciplines in the last few decades (Rohde et al., 1979; Wolfe and Sandler, 1985; Sapirstein et al., 1987). Findings from a recent search of the agricultural scientific literature indicated that 79 papers have been published with “digital image analysis” in the title, and 205 papers used or discuss DIA methods. Digital image analysis techniques offer turfgrass scientists the ability to quantify...