Use of Multispectral Radiometry in Turfgrass Research. (C05-trenholm153812-Oral)

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Abstract:

Turfgrass research has traditionally used visual qualitative data for analyzing plant responses to treatments. These measurements, however, are subjective and therefore may be less reliable than quantitative analysis. Multispectral radiometry provides a method for assessing plant light reflectance in the visible and near-infrared ranges. Reflectance of narrow wavelength ranges as well as ratios of different ranges has been highly correlated with absorbency of photosynthetically active radiation and leaf area index in numerous agronomic crops. In turfgrass research, reflectance at certain wavelengths (661 and 813 nm) and ratios of certain wavelengths has been correlated with visual quality and color ratings as well as plant response to drought, herbicide damage, disease incidence, and fertility status. Although further refinement of the use of multispectral reflectance is needed for turfgrass research, the technology holds promise for providing reliable and consistent data by providing quantitative measurements of turfgrass responses.

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