Sensing Turfgrass Carbohydrate and Nitrogen Status with NIRS. (C05-fermanian191711-Oral)

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Abstract:

Several investigators have successfully used Near Infrared Spectrophotometry (NIRS) as a rapid means to determine tissue nitrogen in turf. This technique involves correlating nitrogen quantities of known samples with their infrared reflectance values across a wide band of wavelengths, generally from 1100 to 2498 nm. This regression or calibration equation has been used to successfully predict tissue nitrogen in unknown samples. A similar process has been used to develop a calibration equation for a range of tissue carbohydrate compounds. Limitations and procedural differences between the developments of these two equations will be presented. The size and shape of scanned turfgrass tissue influences the intensity of reflected near infrared light so sample processing can be critical. While the accuracy of calibration equations can reach an R-square of 0.98 for some components, the predictability of unknown samples is still variable.

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