Use of Red and Green NDVI for Yield Prediction in Winter Wheat. (S04-raun111830-Poster)

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Abstract:

Presently, normalized difference vegetative indexes (NDVI) based on red or green reflectance are commonly used to evaluate plant health, biomass, and nutrient content. This study was conducted to determine which of the two indexes is more correlated to biomass, forage N uptake, and final grain yield of winter wheat. Three experimental sites were established in Oklahoma in the fall of 2001 at Stillwater. Spectral reflectance measurements were taken at Feekes growth stage 4, 6, and 10.5 followed by winter wheat forage harvest. Across all cuttings and locations GNDVI was a better predictor of above ground biomass when compared to RNDVI (r2=0.45 and 0.37, respectively). Green NDVI and RNDVI were more highly correlated to forage N uptake than with biomass, with GNDVI being the better index (r2=0.82 and 0.75, respectively). Red NDVI was a slightly better predictor of final grain yield than GNDVI (r2=0.76 and 0.74, respectively).

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