

Use of By-Plot CV's for Refining Mid-Season Fertilizer N Rates. (5941)

Authors:

- D. Arnall* - *Oklahoma State University*
- K.W. Freeman - *Oklahoma State University*
- R.K. Teal - *Oklahoma State University*
- J.W. Lawles - *N-Tech Industries*
- J. Mosali - *Noble Foundation*
- K.D. Brixey - *Oklahoma State Univeristy*
- W.R. Raun - *Oklahoma State Univeristy*

Abstract:

The use of by-plot coefficients of variation (CV) has not been used in precision agricultural work. Current methods of predicting mid-season yield potential could be improved if plant stand was included. This study evaluated the use of CV's determined from normalized difference vegetative index (NDVI) sensor readings collected from 1m² areas. Three locations with 25 randomly selected plots, measuring 3m by 1m, at each location were used in this study. Initial investigations indicated that CV was a good predictor of early season plant stand. Each plot was divided into three 1m² sub-plots with N treatments; a check, a 120 kg/ha pre-plant with 0 top-dress, and a 0 pre-plant with 80 kg/ha top-dress. Each plot was sensed at Feekes 5 and Feekes 7 using the Green Seeker® hand held sensor. CV was found to have no correlation with final grain yield. However a relationship between CV and early season plant stand was observed. This work supports the concept that CV could be used to better predict the yield potential obtainable if added fertilizer N is added.

Speaker Information: Daryl Arnall, Oklahoma State University, 044 AG Hall, Stillwater, OK 74078; Phone: 405-744-6418; E-mail: arnall@okstate.edu

Session Information: Tuesday, November 2, 2004, 7:55 AM-10:45 AM

Presentation Start: 9:00 AM

Keywords: Potential Yield; Response Index; Coefficient of variation; Nitrogen Application