In-field Variation for Corn Emergence and Development. (C03-wiebold103053-Poster)

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Abstract:

Variations in landscape and soil properties may impact corn (Zea mays) emergence and development. Our objective was to determine the effectiveness of using soil electrical conductivity (EC) and topographical data for predicting emergence and final yield. The experiment was conducted near Columbia, MO on a Mexico silt loam soil in 2001. A randomized complete block design was used with a factorial arrangement of two planting dates and two seed treatments. Four sub-samples (3m x 6m) were placed at varying landscape positions within each treatment combination. Sub-samples were monitored daily until 80% total emergence was established. Yields were calculated for each sub-sample and adjusted for 15g/kg grain moisture. A Veris 3100 and a Geonics EM-38 were used to collect soil EC measurements. A Real Time Kinematic (RTK) GPS system provided topography data. Planting date and seed treatment had a significant effect on yield. Planting date also affected emergence timing, while seed treatment affected initial and final corn populations. Correlations between landscape and soil properties with planting date and seed treatment effects will be discussed.

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