Relationship Between Soil Properties and Productivity Level Management Zones. (S06-mzuku161901-Oral)

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Abstract:

Soil productivity is influenced by soil physical and chemical properties. Therefore, if soil productivity varies across a field, a corresponding variation in certain soil properties would be expected. The objectives of this study were to determine: (i) whether measured soil properties were significantly different among management zones delineated with bare soil imagery, and (ii) the amount of variability in bare soil reflectance that could be explained by measured soil properties. The study was conducted on 3 farm fields in northeastern Colorado. The soil properties measured were bulk density, penetration resistance, surface soil color, sorptivity, organic carbon, porosity, texture, and water content. Results of this study indicate that various soil properties are significantly different among management zones. Some soil properties were significantly related to bare soil reflectance. The amount of variability in soil reflectance that was described by each of the properties ranged from 12-73% across the field sites. Detailed results of this study will be presented at the annual meeting.

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