Associations among Soil Properties and Site Variables of Alfisols in Ohio. (S05-tan092421-Poster)

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Abstract:

Alfisols are the predominant soil resource in Ohio. An understanding of the relationships among their soil properties and site variables is helpful to judiciously plan future land uses for maintaining soil quality. This study was conducted to identify associations and their significances among top soil attributes of Alfisols (consisting of bulk density, BS, CEC, clay, pH, sand, SOC, Value and Chroma in Munsell notation) and site variables (including drainage class, elevation, slope) using canonical correlation analysis. SOC concentration and its association with bulk density were revealed playing the most important role in all relations among the selected variables. The association of soil clay content with CEC and its significance were observed secondly. The association between drainage class and soil color was identified dominant and significant from the third canonical variate. Despite pronounced variations in the means of all selected variables with land uses, these basic associations and their significances were confirmed standing consistently under all land uses. They were responsible for about 60% of variation from each set of variables. Further associations identified from the other canonical variates likely became less explicit and varied largely with land use.

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