Mapping soil pH buffering capacity with remote sensing. (S04-chen162257-Poster)

Authors:

- W.Weaver - *University of Georgia*
- F.Chen - *University of Georgia*
- D.Kissel - *University of Georgia*

Abstract:

The pH buffering capacity resists changes in soil pH when anthropogenic or natural sources of acids or bases are introduced. It varies spatially within crop production fields, and can be used for estimating the amount of lime needed and for modeling the drop in soil pH when acids are added to a field. Our objective was to find a way to map this soil property. Soil pH buffering can be predicted from surface soil organic carbon and texture. Representative samples of surface soils were titrated to determine the buffer slope of pH vs. base added, and the organic C and texture of these samples was measured. Data of soil pH buffer slope was regressed on % soil organic C and % clay using multiple linear regressions. The equation that best fit the data was applied in geographic information system (GIS) software to create maps of the soil pH buffer capacity for three fields in the Coastal plain of Georgia.

Corresponding Author Information:

Feng Chen
University of Georgia
Dept. of Crop and Soil Sci., University of Georgia
Athens, GA 30602

phone: 706-542-0892
fax: 706-542-0914
e-mail: fchen@arches.uga.edu

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