Evaluation of Environmental Impacts Through Phosphorus Sorption Capacities of Soils. (S11-mylavarapu163327-Poster)

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Abstract:

Previous research has shown that certain Oxisols have a strong affinity for retaining phosphorus (P). In some cases, this retention is so strong that the soil actually becomes phosphorus deficient for plant growth even when high levels of P fertilizer are applied. It is therefore important that the phosphorus sorption/desorption characteristics of Oxisols be determined and indices developed to estimate environmental impact from agricultural use of these soils. These indices are important in evaluating the soil both for plant available nutrients and for potential P loss to runoff and leaching. The objective of this study was to develop phosphorus sorption/desorption characteristics for 6 tropical Oxisol soils (4 from Puerto Rico and 2 from Florida). Dilute salt extraction followed by colorimetric analysis was used to determine each soil's phosphorus sorption capacity over a range of from 0 to 150 mg/L added P. From a comparison between this data and data on other Oxisols listed in the literature, we hope to develop a series of predictive indices that will provide useful information in developing guidelines for the agricultural management of tropical Oxisols and aid growers in selecting the best management practices (BMPs) for phosphorus in these types of soils.

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