Phosphorus adsorption and desorption characteristics of selected calcareous soils. (S02-wang172603-Poster)

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Abstract:

An understanding of adsorption and desorption characteristics of phosphorous in calcareous soils is imperative to assessing soil fertility and environmental concerns on agriculture fields. Adsorpion- and precipitation-driven reactions in the calcareous soil often serve as a sink for applied P making it and the native P in the soil unavailable for plant uptake. To investigate the extent of this P sink, an adsorption/desorption investigation was undertaken on several calcareous and high-P soils of different parent origins in Louisiana. Adsorption of P was attained using a batch method by equilibrating 6 rates of P (0, 5, 25, 50, 100, 300, 600, 1200 mg L-1) in a 0.01 M KCl salt solution for 24 hours. Desorption of P was investigated using the 600 and 1200 mg L-1 P rates for 24, 48, 72, 96, and 120 hours. Adsorption/desorption data was analyzed using the Langmuir and Freundlich equations. The implication of the results on P availability will be discussed.

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