Binding Energy (BE) and Maximum Phosphorus Adsorption Capacity (MPAC) in a Toposequence of Soils Derived from Basalts South of Brazil. (S02-costa075355-Poster)

Authors:

- J.A.Sambatti* - *UEM,Maringa-PR, Brazil*
- A.C.S.Costa. - *UEM,Maringa-PR,Brazil*
- I.G.Souza Junior - *UEM-Maringa-PR,Brazil*
- J.M.Bigham. - *OSU,Columbus-OH,USA*
- W.S.Peternele. - *UEM,Maringa-PR,Brazil*
- C.A.Tormena - *UEM,Maringa-PR,Brazil*

Abstract:

Tropical soils present high phosphorus adsorption capacity mostly due to the accumulation of Fe and Al oxi-hydroxides in the clay size fraction. Surface and subsurface samples of 4 soils derived from a toposequence south of Brazil (Oxisols, Ultisols, Mollisols and Vertisols) received increasing doses of P (0 200 mg L-1) in a soil/solution ratio of 20/1 in KCl 0.01 mol L-1. The Langmuir adsorption model was used for the adjustment of the adsorption data and to calculate the Bound Energy (BE) and the Maximum Phosphorus Adsorption Capacity (MPAC), in 3 regions of the isotherm. In three of the soils (Oxisols, Ultisols, Mollisols) the soil surface samples presented MACP slightly lower than the subsurface horizons. The BE of each one of the 3 regions decreased from the first to the last, and from the surface samples to the subsurface ones, for all the samples, probably due to the competing effect of the organic matter with the P-adsorption sites. In the

Vertisol the MACP and the BE were smaller in the subsurface samples, probably due to the presence of a gley horizon where most of the iron oxides components, mostly responsible for the P-adsorption, were removed.

Corresponding Author Information:

Antonio C.S. Costa
Universidade Estadual de Maringa
UEM-Departamento de Agronomia
Maringa, PR 87020-190
Brazil

phone: 55-44-2614407
fax: 55-44-2614407
e-mail: acscosta@uem.br

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