## Effect of Organic and Inorganic Ligands on the Sorption/Desorption of Arsenate on/from Soil Components. (S02-violante083659-Oral)

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## Abstract:

We studied the sorption of As on selected phyllosilicates, metal oxides and synthetic organo-mineral complexes in the presence of P, malate, oxalate, citrate and sulfate as affected by pH, ligands concentration, surface coverage of As on the samples and the residence time. Phosphate was more effective in preventing As sorption than citrate, malate, oxalate and sulphate (in the order listed). The efficiency of organic and inorganic ligands in preventing As sorption was influenced by pH and the nature and surface properties of the sorbents. By adding As and P as a mixture more As than P was sorbed on birnessite, ferrihydrite and goethite, but more P than As was sorbed on gibbsite, allophane, and kaolinite. Organic ligands inhibited As sorption mainly at ligand/As molar ratio greater than 1, when added before As and more in acidic than in neutral or alkaline environments. In fact, oxalate and malate poorly prevented As sorption on pyrolusite, ferrihydrite and goethite, but strongly inhibited As fixation on gibbsite, kaolinite and allophane. Sulfate showed a poor influence in preventing As sorption, particularly at pH greater than 5.0.

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