Effect of pH on Copper Complexation by Fulvic Acid. (S02-howe125737-Poster)

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Abstract:

Binding of copper(II) to dissolved soil fulvic acid was investigated using the Donnan Membrane Equilibrium (DME) technique. A soil II fulvic acid standard from the International Humic Substances Society was used at concentrations in the range of natural systems (10 to 100 mg/L). Copper complexes were made at pH 4 and 6 with a range of metal concentrations (0.01 to 17 mg/L). Unbound Cu was distinguished from total Cu by the DME technique and both free and total Cu were measured by graphite furnace atomic absorption spectroscopy (GF-AAS). A computer simulation based on a Gaussian distribution model was used to calculate formation constants for Cu and fulvic acid. Results indicate that binding of Cu at pH 4 is less than at pH 6, presumably due to the effect of pH on the hydrolysis of Cu binding functional groups.

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