Behavior of Heavy Metals in Raw and Partially Acidulated Phosphate Rock-Amended Soils. (S02-etsujac145620-Poster)

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Abstract:

A laboratory test was conducted on soil samples collected fron three sites irrigated with wastewater in the Mexican Valley of Mezquital polluted with heavy metals. The soils (Typic Calciorthids) were incubated for six weeks with four treatments of phosphate rock (PR): (raw, partially acidulated at 25 and 50% and untreated control). A sequential fractionation was carried out on the incubated soils to assess metal mobility. Results were quite variable. There was, in general, a decrease in soluble and exchangeable soil Pb and Zn fractions, while Cu, Cd and Ni in deionized water were below the analytical detection limits in treatments. Soluble Pb and Zn in amended soils were not substantially different from those of the control treatment. Partial acidulation at the lowest percent and raw PR were not as effective

in controlling metal mobility in soils as the 50% acidulated PR treatment, suggesting that water soluble P in the former treatments, by reacting with calcium carbonate of the soils, was unlikely to influence significantly metal stabilization in these soils.

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