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Effect of tea polyphenols on copper adsorption and manganese release in two variable-charge soils

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Abstract

Batch experiments were conducted to investigate the effects of tea polyphenols (TPs) on Cu(II) adsorption and Mn²⁺ released in two variable-charge soils (an Oxisol and an Ultisol). The results confirmed that TPs enhanced Cu(II) adsorption onto and the release of Mn²⁺ from the two soils. The adsorption of TPs decreased the positive charge of soils or made negatively charged soil more negative. TPs can enhance Cu(II) adsorption by the two soils through an electrostatic mechanism, but its effects mainly occur through a non-electrostatic mechanism; namely, formation of soil-tea

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