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PII: S0375-6742(17)30418-1
DOI: doi:10.1016/j.gexplo.2018.04.006
Reference: GEXPLO 6138

To appear in: *Journal of Geochemical Exploration*

Received date: 16 June 2017
Revised date: 15 March 2018
Accepted date: 15 April 2018

Please cite this article as: Ru-hai Wang, Xiao-fang Zhu, Wei Qian, Hao-ye Tang, Jun Jiang, Yuan-chun Yu, Ren-Kou Xu , Effect of tea polyphenols on copper adsorption and manganese release in two variable-charge soils. The address for the corresponding author was captured as affiliation for all authors. Please check if appropriate. Gexplo(2017), doi:10.1016/j.gexplo.2018.04.006

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 Mn^{2+} 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 Mn^{2+} 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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