

Interactive comment on “Linking dissolved organic matter composition to metal bioavailability in agricultural soils: effect of anionic surfactants” by M. C. Hernandez-Soriano and J. C. Jimenez-Lopez

Anonymous Referee #1

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This paper presents a controlled experiment designed to assess the effects of two commercially available surfactants added to three different soils under two different moisture regimes. Fundamentally, the experimental design is flawed in that there are not enough replicates ($N=2$) of each treatment \times soil \times moisture combination. The results have therefore been over-analysed and it is not surprising that few statistically significant effects were detected either between treatments or between moisture regimes. The conclusions are therefore not sustainable. There is reference to bioavailability in the aims and results, but as far as I can tell no assays for bioavailability were per-

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formed and the term is never really defined in the context of this work. There is some value in the analyses conducted using WHAM VI and fluorescence. However the various ways that solutions have been characterized (UV-VIS absorbance, fluorescence, speciation using WHAM VI) have received rather superficial attention to detail. For example, WHAM requires many inputs and there is no information on how the model was parameterized. Considering the flaws in experimental design I think these results would be better placed as a much more focussed technical note in a discipline-specific journal. There are shortfalls in the way that the literature has been reviewed particularly with respect to what is known about metal-organic matter speciation and bioavailability. Data in tables is rather confusingly presented. It would be much better to have separate tables for soil characterisation and experimental results (solution characterisation).

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