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Addition/Correction

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Corrections to Lignite Reduces the Solubility and Plant Uptake of Cadmium in Pasturelands

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The authors regret that in our article[1] Figure 1 is lacking the dashed lines described in the figure caption and there is some confusion in one paragraph of the results and discussion section, namely there are references to nonexisting figures, some results are incorrectly summarized and the structure and typesetting is unfortunate. The needed corrections are given here.

Correction 1. The following Figure 1 replaces Figure 1 in Simmler et al.[1]

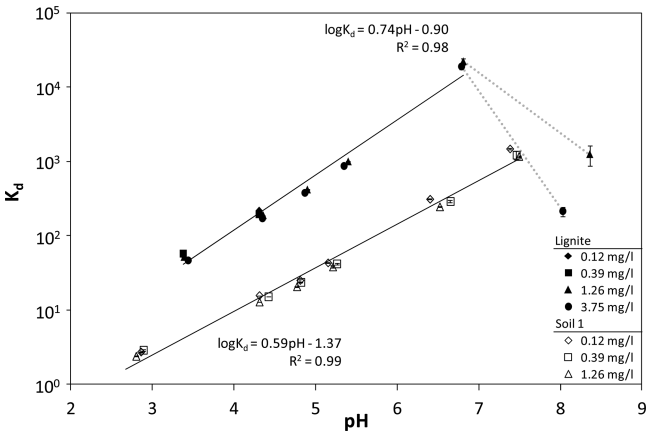

Figure 1.

Correction 2. The following paragraph replaces the paragraph **"Effect of Lignite on the Concentrations of Other Elements in Pasture"** in the results and discussion section of Simmler et al.[1]

Table S4 and S5 show the plant concentrations of macro- and micronutrients as a function of the lignite addition. The concentrations of Ca, Zn, Cu, and Mo were not significantly altered for 1 wt % lignite addition. For 3.4 wt % lignite addition, the plant concentrations of Ca, Cu, and Mo were significantly reduced in most of the treatments and plant Zn uptake was significantly reduced in the biosolids treatments. Plant B concentrations were significantly increased with increasing lignite addition.

In the unlimed soil, the reduction in Cd concentration was greater than the reduction in plant concentration of other elements measured (Figure 5 and Figure S2). Assuming that the bioavailability of Cd, Zn, and Cu is a function of their solubility in soil, this observation is surprising as Zn and especially Cu are often cited to show higher affinity to organic matter than Cd.[2] This may further indicate the importance of S groups in complexation of Cd by lignite at biologically relevant concentrations. In contrast to sorption on carboxylic groups, Cd is usually more competitive than Zn in binding to reduced sulfur groups.[3] Martinez et al.[3] found that peat had a higher affinity for Cd than for Zn and concluded that this might indicate high importance of sulfur groups in the binding of Cd in peat.

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REFERENCES

(1) Simmler, M.; Ciadamidaro, L.; Schulin, R.; Madejón, P.; Reiser, R.; Clucas, L.; Weber, P.; Robinson, B. Lignite reduces the solubility and plant uptake of cadmium in pasturelands. *Environ. Sci. Technol.* **2013**, DOI: 10.1021/es303118a.

(2) Scheffer, F.; Schachtschabel, P.; Blume, H.-P.; Thiele-Bruhn, S., *Lehrbuch der Bodenkunde*; Spektrum Akademischer Verlag: Heidelberg, 2010.

(3) Martinez, C. E.; McBride, M. B.; Kandianis, M. T.; Duxbury, J. M.; Yoon, S. J.; Bleam, W. F. Zinc-sulfur and cadmium-sulfur association in metalliferous peats evidence from spectroscopy, distribution coefficients, and phytoavailability. *Environ. Sci. Technol.* **2002**, *36* (17), 3683−3689.

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