

Interactive comment on “Influence of long-term mineral fertilization on metal contents and properties of soil samples taken from different locations in Hesse, Germany” by S. Czarnecki and R.-A. Düring

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Received and published: 14 November 2014

Dear Referee,

Thank you for giving us the opportunity to rearrange and correct our manuscript and we are thankful to your comments that helped us to improve the research article. Here are the details of our responses to the suggestions:

1- Experimental design The explanations about the experimental design are rewritten.

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Please see “Section 2.1 Study area and fertilizer treatments” of the manuscript (please see yellow highlighted lines 73-79, 81, 83-86).

2- Pseudo total The description of “pseudo total metal content” is given in the manuscript (please see lines 220-224 in the revised manuscript- in yellow highlighted).

3- Ni as essential plant nutrient It was a citation from “Raskin, I., Kumar, P. B. A. N., Dushenkov, S., and Salt, D. E.: Bioconcentration of heavy metals by plants. *Current Opinion in Biotechnology*, 5: 285-290, 1994.” Some more recent references about the essentiality of Ni could also be found in the literature: “Chen, C., Huang, D. and Liu, J.: Functions and Toxicity of Nickel in Plants: Recent Advances and Future Prospects. *Clean* 2009, 37 (4-5), 304-313. “López, M. A. and Magnitskiy, S.: Nickel: The last of the essential micronutrients. *Agronomía Colombiana* 29 (1), 49-56, 2011. “Yusuf, M., Fariduddin, Q., Hayat, S. and Ahmad, A.: Nickel: An Overview of Uptake, Essentiality and Toxicity in Plants. *Bull. Environ. Contam. Toxicol.* (2011) 86:1-17. DOI 10.1007/s00128-010-0171-1.

4- Material and Methods (Soil Classification) Soil classification according to WRB 2014 is added to the manuscript. Please see “section 2.1 Study area and fertilizer treatments” of the manuscript (please see lines 83-86) (in yellow highlighted). The reference is also added to the list. [IUSS Working Group WRB. 2014. World Reference Base for Soil Resources 2014. International soil classification system for naming soils and creating legends for soil maps. World Soil Resources Reports No. 106. FAO, Rome] (please see lines 422-424).

5- Results and Discussion: the meaning of “considerable” The word “considerable” is changed to “significant” in the manuscript. Please see “line 133” in the corrected manuscript (in yellow highlighted).

6- “Results” section of the manuscript is revised. A new sentence is added (please see lines 270-272) and between lines 283-293 and 297-322 are rewritten (all is in yellow highlighted). The reference “Golia, E. E., Dimirkou, A., and Mitsios, I. K.: Influence of

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Some Soil Parameters on Heavy Metals Accumulation by Vegetables Grown in Agricultural Soils of Different Soil Orders. *Bull Environ Contam. Toxicol.* (2008) 81:80–84, 2008. doi 10.1007/s00128-008-9416-7” is removed from the manuscript.

Moreover, five new references are added: • Kabata- Pendias, A. and Mukherjee, A. B.: Trace elements from soil to human. Springer-Verlag Berlin Heidelberg, 2007 (lines 427-428). • Alloway, B.J.: Heavy metals in soils (Alloway B.J., ed). Blackie, Glasgow and London, 1990” (lines 364-365). • Abrahams, P. W.: Soils: their implications to human health. *The Science of the Total Environment*, 291, 1 32, 2002 (lines 356-357). • BBodSchV (Bundes-Bodenschutz- und Altlastenverordnung) Bundesgesetzblatt, Bundesanzeigerverlagsgesellschaft mbH, Köln, Germany, 1999 (lines 372-373). • Brevik, E. C. and Sauer, T. J.: The past, present, and future of soils and human health studies. *SOIL Discuss.*, 1, 51–80, 2014, doi:10.5194/soild-1-51-2014 (lines 377-378).

Interactive comment on *SOIL Discuss.*, 1, 239, 2014.