

From: Romkens, Paul <[REDACTED]>

Sent: 06 February 2018 15:07

To: [REDACTED]@eea.europa.eu; [REDACTED]

Subject: abstract FAO Soil Pollution Rome May

Dear [REDACTED]

As it is the deadline for submission of the abstract is rapidly approaching. To my surprise (but not really) the abstracts should be paper-like (3000 words). As it is my time this week and next week is limited so we have to see how to proceed. Below you can find the abstract for the abstract.....this more or less summarizes the work we did looking both into impact on soil, from there to crops and on to exposure. I tried to keep it as 'neutral' as possible not stating whether such changes are small, large, acceptable or unacceptable (to avoid new discussions).

Since I most likely am not able to fully finalize this paper (after today there is no time left to work on the paper and next week only Monday/tuesday) I was hoping to send just this abstract to see if they like it (session 2.1 Soil Pollution and food safety seems pretty appropriate) so that, hopefully we can submit a full abstract later. If not, too bad, we perhaps can use it as a follow-up of the soil focussed paper we will discuss soon anyhow.

Please let me know what you think!

Best regards

Paul

PS I will also send this to [REDACTED] who already asked me if they could send my name to the organizers. Clearly we are not working their case but if we can use this to present something, why not.

Impact of cadmium in soil and mineral P-fertilizers on cadmium uptake by crops and human exposure: a spatially explicit assessment at EU-25 level

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Abstract

Human exposure to cadmium (Cd) occurs among other via intake of food. The relation between Cd in soil and food crops, however, depends on a large array of factors including soil type, degree of pollution, crop type and supply of Cd to soil. Current levels in soil and crops are such that intake via food for children already is close to or in excess of the revised EFSA TDI of xx ug Cd.kg bw.day. At present it is unclear how soil Cd levels will develop in the near future considering the spatial variability of soils in the EU, current levels of inputs to soil and removal rates from soil including those via leaching and crop uptake. Hence it is unclear how current proposal regarding maximum levels of Cd in mineral P fertilizer will affect soil Cd levels and hence levels of Cd in important food crops like wheat, potato and vegetables. In this paper we present a recently developed spatially explicit model to predict changes of Cd in soil and crops at a spatial resolution of 1 x 1 km at a time scale of 100 years. Model results indicate that average soil Cd levels in arable and grassland soils will continue to increase if levels of Cd in P fertilizers exceed 20 mg Cd kg P₂O₅. For arable land and grassland soils stand still is achieved if Cd levels in P fertilizers are reduced to 0 and 60 mg Cd kg P₂O₅ respectively. Based on the current soil to plant model applied, levels of Cd in food crops are predicted to increase in 100 years between 1.5% and 16% for wheat, lettuce and potato depending on the level of Cd in mineral P fertilizers. Based on EU-wide average consumption patterns it is estimated that approx. 50% of the total intake via food is directly related to the Cd content in arable soils in the EU, the remainder either is from imported food or from non-soil related products like fish. Predicted changes in soil and crop Cd hence would lead to an increase intake of Cd via food between 4.1% and 9.5% based on an average consumption pattern for the three crops considered here

maximum 2000 characters, including spaces and summarise the main points of the paper.

Keywords: cadmium, fertilizers, soil, uptake, exposure

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