

Interactive comment on “Adsorption, desorption and fractionation of As(V) on untreated and mussel shell-treated granitic material” by N. Seco-Reigosa et al.

Anonymous Referee #2

Received and published: 8 February 2015

The paper submitted by Seco-Reigosa is interesting and under the scope of Solid Earth. However some speculations of the authors, beyond the scope of the paper should be consider carefully. I think that they should show the implications, but also show evidences or data that can prove it. I think that the paper needs a minor revision previous to be accepted to publication in solid earth

Page 2

Abstract Line 17-19: This is a very strong affirmation. Despite As be a toxic element classify, say that granite material (which is natural and abundant in NW Spain) is a potential risk to water pollution and food chain is too strong. Please rephrase this or

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delete it.

Introduction

Line 1-2: If granite has low As, how can be considered a problem to environment?

Page 3 Line 2-3: Please show at which levels, As can be considered a risk to environment an human health? Line 4-6: In which situation As based products are spread on soil. Please explain clearly with facts and previous works that the usage of As products have a potential risk to environment and human health.

Page 4 Line 2: Here the authors have to show a better justification and novelty of their work.

Materials and Methods Line 12: Please show the coordinates and altitude of the palce where the material was collected. Line 15: Do you have any evidence that the C horizon studied is similar to granitic mine spoils?

Page 5 Line 2: Show the amount of sample used to measure the pH and all the other studied elements. Line 22: Change “pollutant” by “element”

Results and discussion

Page 8: Line 23-24: Please show the influence of the surface area in As adsorption

Page 9: Line 10-13: Do you have some explanation for the increase in the adsorption between 0.5 and 5 in in the granitic material and granitic material + + 12 t/ha shell. Line 21: Increase to which pH level. Line 22: Can you show some explanation for this irreversibility? Line 25: Do you have some explanation for the fact that coarse mussel shell only fits the Freundlich model.

Page 10: Line 20: It is possible to provide some more explanations about the effect of the addition of fine and coarse mussel shell in the natural relation of As(v) with pH.

Page11: Line 4-6: In these correlations you did not show the p value, please show

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it and proof that the correlations are statistical significant. Please do it here and in the other correlation coefficients calculated in the paper. I suggest the authors to describe in the materials and methods the statistical analysis carried out, the correlation coefficients used and if the data followed the normal distribution.

Page 12: Line 18: To identify if there important changes in the three measurement periods and among the different treatments, it would be important to carry out some statistical tests, in order to know if differences were significant.

Conclusions Line 16-19: Do your data show this evidence? Adsorption capacity of coarse mussel shell is not so high. I suggest the authors to not speculate about these impacts, or present studies in the discussions that confirm this argument. Line 24-26: Please see the previous comment

Tables

Table 1 and 2. Please show the SD.

Interactive comment on Solid Earth Discuss., 6, 3419, 2014.