



EGUsphere, author comment AC1
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Reply on RC1

Britta Greenshields et al.

Author comment on "Oil-palm management alters the spatial distribution of amorphous silica and mobile silicon in topsoils" by Britta Greenshields et al., EGU sphere, <https://doi.org/10.5194/egusphere-2022-281-AC1>, 2022

Egusphere-2022-281

Author's response for reviewer #1

Dear reviewer,

Thank you for your positive feedback and for your valuable comments that help us to improve the manuscript. Below we respond to your comments and explain how we plan to revise the manuscript.

Reviewer's remarks are highlighted in bold:

General response:

General comment:

I recommend that the manuscript be accepted with some revision. The topic clearly fits into the scope of SOIL and is of multidisciplinary interest as it aims to increase the sustainability of oil-palm plantations. The study design and methods are clear and could be reproduced. The results are fully explained and the discussion references relevant literature. Based on the results, the conclusions are warranted. However, there could be some discussion about how the soil type and characteristics might affect Si cycling in these systems. And while pedogenic Si might be a less substantial source in topsoils, the mineralogy of the underlying geology could be expanded upon in Lines 112-114.

Thank you for this comment. We agree that it will be useful to include some additional information in section 4.1, ll 281-285 on how soil type and soil characteristics might affect Si cycling in oil-palm systems. We will do this in a revised manuscript. Furthermore, in section 2.1, l 114, we will provide some information on the mineralogy of the soils, quartz, kaolinite, and Fe-Al oxides being the most abundant minerals.

To reinforce the interdisciplinary nature of the work, the discussion/conclusion might include reference to any planned outreach and whether the recommendations listed would be likely to be adopted by small plantations in the area.

In the conclusion, we will include a finalizing sentence, describing which conditions would be necessary for smallholder farmers to implement the suggested measures, e.g., that the costs to implement these measures would have to be affordable.

Finally, in the interest of completeness, all of the data from the topsoil samples should be reported in the Appendix, not just the means.

Yes, we agree. In a revised manuscript, we will report not only the means but also the data prior to the calculation of means, so that an interested reader can also look at the variability.

Specific response:

Specific comments:

Line 70: Should be "contribute to a lesser extent"

Thank you. We will rephrase the sentence accordingly.

Line 200: Provide the citations for the R packages.

Yes, sorry and thank you for this remark. We will cite the R packages we used.

Figure 2: Indicate specifically what an a and b mean regarding the significant differences.

Thank you for pointing this out. We will add it to Figure 2 accordingly.

In the revised manuscript, we will highlight all changes by reviewer #1 in yellow, all changes by reviewer #2 in green, and all general comments to improve the readability and completeness of this study in grey.