

Interactive comment on “Evidence of old soil carbon in grass biosilica particles” by P. E. Reyerson et al.

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We thank the anonymous reviewer#3. We truly appreciate his/her time and expertise in critically reviewing our article and for those valuable suggestions. We will make all the possible changes requested by this reviewer.

It may seem confusing the use of phytC (term used in all the following publications - Santos et al. 2010, 2012a,b, 2016; Corbineau et al. 2013, Alexandre et al. 2015a,b) instead of phytOC, which was born based on the assumption that carbon embedded in phytoliths is from a CO₂ photosynthetic origin. Moreover, the term phytOC implies that all the carbon embedded in phytoliths must be organic-based, a fact not yet established. At the present study, just one amendment (in planter B) contained inorganic-

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carbon from a natural deposit (greensand) as well as competing amounts of organic carbon of similar ¹⁴C ages. PhytC stable isotope results suggested that the amendment inorganic-carbon contribution (if any) was undetectable. As yet, and based on one single amendment, we do not have other ways to infer if "inorganic carbon-containing compounds" cannot be encapsulated by phytoliths.

In response to reviewer comments#2 and 3, we will re-organize the manuscript to provide more clarity for the results and discussion sections. We believe that the recently developments in this field, especially in regard to extra phytC anomalous ¹⁴C data from independent authors (e.g. Piperno 2015 and Santos et al. 2016), plus the evidence of direct uptake of C by roots in Alexandre et al. (2015b) will help us to provide those necessary clarifications.

References cited here:

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Santos et al. (2012b) Interactive comment on "Comment on: "Possible source of ancient carbon in phytolith concentrates from harvested grasses" by G. M. Santos et al. (2012)" by L. A. Sullivan and J. F. Parr. *Biogeosci. Discuss.* 9, C6114 e C6124. www.biogeosciences-discuss.net/9/C6114/2012/bgd-9-C6114-2012.pdf.

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