

The authors have appropriately modified their previously submitted draft manuscript as per the reviewers' and editor's comments.

We are very grateful to your comments and we have addressed them below. In black is the Topic Editor's comments and our responses to the comments are in blue. In brief, we agree with the suggested comments and we have addressed them accordingly. The line numbers being referred to in this document corresponds to the new numbering in the manuscript with tracked changes.

Just a few minor changes to be made:

In the revised version now several potential mechanisms are forwarded via which inclusion of a leguminous crop in the rotation could promote storage of SOC. These concern reduced pest damage and N-provision among others. Since these particular effects were not measured in this study it would be better to not use the term 'hypothesize' or 'hypothesis' in L116-L126 as that raises expectations and readers will be searching for a testing of these hypotheses. Also, the first sentence is overly long (L116) and complex. Do rephrase with conditional verbs.

We are grateful to the Topic Editor on the comment and we have edited the section as suggested (Lines 107 – 123) which now reads as follows:

“We hypothesized that the full combination of CA components would be associated with higher increases in SOC stocks than adoption of only one component. This increase in SOC stocks could mainly be due to increased C inputs to the soil, especially under minimum soil disturbance. However, C inputs due to crop rotation could be indirect through increased crop productivity due to reduction on biotic pressure (pests and diseases), and therefore C inputs to the soil might be increased too. Cereals in a cereal-legume rotations may benefit from added soil nitrogen through biological nitrogen fixation from the preceding legume crop enhancing their productivity. Crop diversification, on the other hand, can enhance soil biological processes by increasing the diversity and/or abundance of microfauna like mycorrhizae. This, in turn, improves aggregate stability and offers physical protection for SOC. Lastly, high quality residues (from the legume crop) have been shown to be preferentially stabilized in the soil due to a higher carbon use efficiency of soil microbes (Cotrufo et al., 2013; Kopittke et al., 2018)”.

For the recompiled figures: do not use serif-type fonts (like times new roman) but rather a font like arial or calibri, as you in fact did implement in Fig. 3

We agree to the comment and we have rectified and used Arial font (Lines 287 – 288)

Perhaps moving 4.1 (previously 4.3) forward was not the best choice. By doing so, the discussion now abruptly starts with a general statement on soil texture, then followed by L523-526 stating that soil textural differences between both sites explain the found differences in SOC storage and efficiency of retainment of crop-C inputs. This order is not optimal. Do instead start off by explaining, based on the results, first and foremost that there was a contrast in SOC stock between both sites. Then compare crop residue inputs between the sites and apparent efficiency thereof to form or sustain SOC in topsoil. Then bring in soil texture as likely explanation. Otherwise do perhaps reconsider 4.1s position in the discussion.

We have taken cognisance of the comment and we have reverted to the previous arrangement as suggested by the Topic Editor (Lines 401 – 566).

L568-577, this newly added text will confuse readers and is not needed. Do remove from the manuscript; Your explanation in the response letter sufficed and there was no need to also elaborately comment in the text itself.

We agree to the comment and we have deleted the paragraph (Lines 446 – 455).