

Interactive comment on “Greater soil carbon stocks and faster turnover rates with increasing agricultural productivity” by Jonathan Sanderman et al.

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Dear authors:

Congratulations for your manuscript. I just would like to make some comments on figures that, in my opinion, may help you to improve the manuscript.

Figures and tables should be completely understood when read independently of text. This means that abbreviations (although obvious or explained in the main text) should be explained again in captions. Some other changes may contribute to improve the layout. So, I kindly suggest making the following changes:

Figure A1. Substitute the caption with "Relationship between organic carbon content
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(%OC) and bulk density for the 0-10 and 10-20 cm soil layers collected in 1997 from all trial plots". Also, use capital letter for the Y axis title: "Bulk density..." and superscript for "-3". I suggest removing the gray pattern.

Figure B1 and C1. You can use different symbols, different symbol colors, different line patterns and different line colors, but not all together. I suggest using one of these alternatives: [i] Different line colors with no symbols (the best option) or [ii] the same line color and pattern with different symbols, but the same color for each symbol.

Figure C1. "SOC" needs to be defined, but it is not used in the graph, so better substituting it with "soil organic carbon". Check the last sentence if you decide changing the layout according to the last comment.

Table 1. I strongly suggest using mean \pm standard deviation instead of parentheses for the last. I like it much more when all information is in the caption and there are not footnotes.

Table 2. See previous comment and avoid the excessive use of symbols in tables. All footnotes may be moved to the caption: Soil carbon data summary. Mean across time and standard deviation (in parentheses) given for each rotation. Significant differences (one-way repeated measured ANOVA, $\text{t} < 0.05$) between rotations are indicated with different letters in each column. Pa = permanent pasture, 2W4Pa = 2 years wheat followed by 4 pasture years, WW = continuous wheat, WOF = wheat-oat-fallow rotation, WF = wheat-fallow rotation. POC = particulate organic carbon, HOC = humic organic carbon, ROC = resistant organic carbon. f(POC), f(HOC) and f(ROC) are expressed as a proportion of bulk soil carbon.

Tables 3 and 5. You can make this table simpler. F-statistics may be deleted, but keep ANOVA p-values. Also, you can display only $p > 0.005$ (explaining it in the caption).

Table 4. See comment for Table 2.

Table 6. Non-significant correlation coefficients are not necessary in the table. You

can simply delete them (for example, column A/O-A may be removed). In the caption, tell the reader that only significant coefficients are shown.

For the rest of figure, comments above are applicable. In my opinion, figures 2, 4 and 5 are perfect! Even better if colour is added to Fig. 5.

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