

Response to Editor comments

We provide the Editor's comments and critique in blue and provide our response in black. All pages and lines are from the revised manuscript unless otherwise stated.

While reading your manuscript, it was not 100% clear to me how you dealt with observed changes in bulk density while calculating soil C stocks.

As described on P. 7, l. 28-32 (in first submission manuscript P. 8, l. 4-5), the C densities were calculated for both years (2004 and 2017) by multiplying the average C concentration of a depth layer by the corresponding measured average bulk density. The C densities for the different layers were then multiplied by the layer thickness and summed up to determine the C stock.

Another aspect that I think deserves more discussion is why this site accumulated the soil C before 2003, that it is apparently losing since then? Are there potential legacy effects?

We added a sentence to the discussion that the preconditions of the field likely enhanced the C losses:

"The loss strength, however, was likely influenced by the arable-ley rotation, which was used at the field until the late 1990s and which is expected to reach a higher soil C stock than the crop rotation that was used afterwards." (P.11, l. 10-11)