

Comment on soil-2021-145

Anonymous Referee #1

Referee comment on "The application of biochar and oyster shell reduced cadmium uptake by crops and modified soil fertility and enzyme activities in contaminated soil" by Bin Wu et al., SOIL Discuss., <https://doi.org/10.5194/soil-2021-145-RC1>, 2022

The authors of the manuscript Soil-2021-145 "The cooperative application of oyster shell and biochar efficiently enhanced in-situ remediation of cadmium contaminated soil around intensive industry" addressed an interesting and important topic by using amendments (biochar and oyster shell) to achieve the safe-production of crops in the Cd contaminated soil following the rice-oilseed rape rotation. Indicators reflected soil quality including soil fertility and enzyme activities were also investigated by authors. Cd contaminant in farmland has been causing a great concern on human health. Overall, the authors present a well-designed study with appropriate methods, and this study provided a practical method to reduce the Cd contents in crops and reduce the remediation cost. I think that this study is well-worth to be published. However, some issues should be carefully considered before publication.

Specific comments:

- Introduction: Highlight the advantages of biochar and oyster shell on the immobilization of Cd in soils.
- L70: functional groups, please specify it.
- M&M: L107, I think that there should add a sentence "The main properties of biochar and oyster shell were presented in Table S1."
- M&M: More details should be provided in the experimental setup, such as water management.
- M&M: L133, Full name of the AAS abbreviation should be provided in the first time.
- M&M: L141-142, The format of references was incorrect, please check.
- L175: I think that this part should be "Results" rather than "Results and discussion" because "Results" and "Discussion" in this manuscript were separated.
- Results 3.1: The Cd concentration in farmland soils should be addressed.
- Result 3.5: Why authors determine the dehydrogenase, urease, acid phosphate and β -galactosidase but not other soil enzyme?
- Discussion: The discussion of immobilization mechanisms of Cd can be addressed

according to literatures.

- L325-326: Authors should provide the composition of oyster shell.
- Figure 6a: The SD might be incorrect, please check.
- References: The format of some literature was incorrect. Such as: Line 412; Line 416.