

Authors of the manuscript “The impact of combined application of biochar and chemical fertilizer on the biochemical properties of soil in soybean fields” revealed that the combined application of biochar and chemical fertilizers enhanced soil electrical conductivity and cation exchange capacity, the absolute value of soil ZETA potential, surface charge density of soil colloids, soil surface potential and species richness in soil.

It is an interesting study. However, authors need to address the following issues:

1. Why soybean fields? Please provide justification?
2. Please add the implication of this research.
3. Improve language and grammar of the manuscript. e.g. L23 started with “Conducted at the Heshan Farm Science and Technology Park of Beidahuang Group's 24 93rd Subsidiary in Heilongjiang Province”
4. Please add data in results section of abstract.
5. Please arrange keywords alphabetically.
6. **Introduction:** Some modifications must be done like many sentences were 4-6 lines long e.g. one sentence started from L60 and ends at L66 (almost 90 words), similarly another sentence was L72-L79 long. Please reduce the number of words in a sentence so it could be understandable for the readers.
7. **Methodology:** L184 to L187, authors mentioned two plots, one for soybean, and another for maize. But the results were taken only for soybean field. Because the purpose of this study was not to compare both crops, then the author should mention only one plot having the soybean last crop.
8. L188 please provide the preliminary data in supplementary section.
9. Why only soil samples from the R8 stage of the CK, F1+B, and F1 treatments in 2022 were sent for high-throughput sequencing of soil microbial characteristics?
10. Which extraction method was used for DNA extraction? Please provide reference.
11. **Results:** The presentation of the results should be refined. Add data (values or percentages) to validate the results. Remove comments on relevance, and validity of the findings, and focus on a clear and simple description of the results to highlight. For example see L261, L264 etc.

12. Figure 3: Letters indicating significant differences are incorrectly labelled. Please verify the uniformity of formatting throughout the text.
13. Figures should be in High Resolution. Please improve the quality of Fig. 7 and fig. 11.
14. Table 2: CEC (cmol/kg) unit alignment is not centralized.
15. Table 4: in title please replace corn with maize as maize was used in whole manuscript. Please maintain uniformity.
16. Table 5: add a space in Soil electric(ms/m), (please remove this type of typos from whole manuscript) add full word electric conductivity or use EC.
17. Table 7: Effects of fertilizer and carbon application on surface electrochemical properties of soybean and maize varieties (where is data for maize variety?)
18. Please use word “biochar” instead of carbon in title of table 7.
19. **Discussion:** There is a lack of mechanistic approach. Improve discussion with the help of logics and further relevant literature
20. **Conclusions:** The contents of this section are appropriate.
21. **References:** Satisfactory containing sufficient articles published in the last five years. Check the reference formatting manually. Ensure that the formatting is consistent and it does not have formatting errors.
22. Don't use et al. in a reference list, please provide full author list.