

# Review of: "Analyzing the Effects of Organic Amendments on Soil Erosion Dynamics: A Comprehensive Study on Application Methods and Timing"

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Potential competing interests: No potential competing interests to declare.

The manuscript by Vahidi et al. explores the impact of various organic amendments on soil properties, with a specific focus on barberry biochar in the South Khorasan Province, Iran. The use of such materials, particularly biochar, is a widely studied and relevant topic, especially in the context of global climate mitigation. However, this paper requires extensive revision, with particular emphasis on refining the introduction and discussion sections, addressing some methodological gaps, and incorporating more quantitative statements in the text, abstract, and conclusion.

Here are my suggestions/comments:

## 1. Abstract Section:

Remove redundant information such as "The investigation focused on soil texture changes, runoff volume, and sediment rate. Ensure clarity and coherence throughout the abstract.

## 2. Introduction Section:

Provide a more in-depth presentation of recent literature relevant to soil amendments, specifically targeting parameters under scrutiny in this study (e.g., erosion, sedimentation, and runoff volume).

## 3. Figure 1:

Enhance the resolution of Figure 1 to improve readability.

## 4. Soil Analysis:

Include details on how soil analysis was performed in the manuscript.

## 5. Taxonomic Name:

Italicize "*Eisenia fetida*."

## 6. Particle Size Distribution:

Provide information on the average particle size/particle size distribution of each amendment, especially considering the

potential smaller particle size of biochar.

**7. Figure 4:**

Remove the red underline with "biochar" and "Vermicompost" in Figure 4.

**8. "Biochar Efficiency":**

Elaborate on the meaning of "Biochar Efficiency" in the text.

**9. Section 3.2.3:**

There is redundant information in section 3.2.3, namely: "The highest and lowest clay percentages were observed in the wheat straw treatment before the rainfall simulator's application and after the simulator application of a mixture of wheat straw.", and later: "The highest and lowest percentages of clay were obtained from the wheat straw treatment before the rainfall simulator's application and from the use of a mixture of straw and wheat stubble after the application of the rainfall simulator". Please remove redundant information and add "respectively" at the end of one of the sentences.

**10. Consistency in Sectioning:**

Maintain consistency in discussing changes in silt, sand, and clay percentages across sections.

**11. Quantitative Results:**

Augment qualitative descriptions with quantitative results for a more comprehensive analysis.

**12. Significant Figures in Tables:**

Ensure proper use of significant figures in the tables.

**13. Table 2 and 3 Analysis:**

Specify the type of analysis performed to obtain the results depicted in Tables 2 and 3.

**14. Error Bars:**

Add error bars to the figures to represent the experimental variability mentioned in the abstract (all experiments have been performed 4 times).

**15. Section 3.3:**

Clarify the meaning of the "1% level" in Section 3.3.

**16. Units in Tables:**

Use SI units in tables and correct any abbreviations of units in Tables 5 to 10.

**17. Reference Section Mention:**

What do the authors mean with “As discussed in the reference section” in section 4.6.1.? Should it be introduction section?

**18. Discussion Section:**

Compare key findings of the study with relevant literature for a more focused and insightful discussion.

**19. Conclusion Section:**

Extend the conclusion section with quantitative statements based on the experimental data obtained.