

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.

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

General

This is a very insightful study that highlights the prospects of a locally available material, barberry biochar, in mitigating soil erosion, which also can help sequester carbon and increase soil fertility in the region. However, the work needs some improvement, especially in the results and discussion, which are not in tandem with the title. Also, the authors need to be consistent in their choice of terms used throughout the paper. Using such terms as mulching, surface spreading, and/or complete mixing to refer to one and the same method is confusing and misleading. Other specific comments are in the manuscript.

Title

Using "dynamics" in the title does not describe the study. Soil erosion dynamics suggests a work that studies the rates at different time intervals over a period of time to be able to understand the patterns of soil erosion, and this was not the case in this study. That could be modified or deleted completely. Also, this work was a laboratory study; using the term "comprehensive" in the title does not quite fit, as the work is more of a comparative study.

Abstract

The abstract is concise and representative of the results obtained from the study. Although it seems rather biased, highlighting barberry biochar only in the abstract, if soil texture was assessed before and after application of amendments, there is no result to show a change in the texture from the preliminary silt loam. Other specific comments are in the manuscript.

Introduction

The authors did not review the effects of various organic amendments, timing, and application methods on soil erosion. The focus was on organic amendments generally. Hence, the research gap was not clearly identified. The three aims highlighted toward the beginning of the introduction should be rephrased for clarity. The authors should also be consistent

in their choice of terms, e.g., using soil erosion components and soil erosion properties could refer to two different things, especially since these were not established earlier on. Lastly, some ambiguous and repetitive sentences could be removed to make it brief.

Materials and Methods

The authors did not state the way the soil and erosion properties were analyzed and measured. They did not even state the soil properties that were analysed, especially those which significantly influenced soil erosion in the study.

Results

The tables should have been presented in landscape format for ease of reading. The authors presented rainfall as a factor in the study, which is not as presented in the materials and methods. Also, the results were not structured into paragraphs, and relevant tables were referenced to mirror the objectives stated in the introduction. The materials and methods mentioned that soil properties were analysed bi-monthly over the 6-month duration of the study, but there are no results to show the temporal changes in soil properties, if any. I also think the authors should establish the abbreviations and symbols used in the results section before using them throughout this section. Generally, the results section was too verbose and repetitive.

Discussion

Section 4.6 could easily be collapsed into the other sections in the discussion because some sentences are rather repetitive. The authors did not discuss the results in an in-depth manner; therefore, the Discussion needs some improvement.

Conclusion

The authors did relatively well in this section.

References

I did not check if all the cited references were relevant to the study. However, some of the in-text citations are not listed in the references, and vice versa. I also noticed an overall inconsistency in the referencing style.