

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.

It is important to study soil erosion and the possibilities to reduce it. I prefer long-term experiments rather than short-term experiments like this. However, we also need this data to know what to do and reduce soil loss. In this sense, I find this article very interesting.

On page 2, at the end, you can find "significantly reduced soil loss by 45.60%." I am not sure if this is 40-60% or if it is exactly the number 40.60%. In my opinion, it is very difficult to determine a reduction of soil loss with this exactitude. Please check it.

I disagree about considering a gap in the studies regarding soil erosion and the use of organic wastes like those used as the authors indicated on page 3. There are a lot of studies considering the ability of organic wastes to reduce soil loss. Probably, the novelty is about biochar from barberry wastes.

In section 2.3, the wheat straw was chopped, surely to obtain a small size fraction. I do not know the length of the fragments. We know that all of the amendments were under 2 mm because they were sieved. This data is of interest regarding the properties determined. It is a question related to the formation or not of aggregates of different sizes in the soil. As the experimental time was only 180 days, for instance in the case of the wheat straw and probably biochar, it seems difficult for humification and mineralization and, for this reason, difficult to interact with inorganic particles to form aggregates. Unless it would be expected.

As a suggestion, I think that it is better in figure 3 to separate the rainfall simulator from the rest of the pictures (soil air drying and soil texture analysis), or explain them one by one, including this explanation in the footnote of the figure.

Just one suggestion regarding sub-section 2.5. When the treatments were prepared, one of the methods was complete mixing. In this case, the undisturbed soil samples taken, if they were used, were in the same conditions as the disturbed soil samples taken because you have to work with the whole topsoil to mix the amendments and disturb the soil. Only mulching application in undisturbed or disturbed soil samples should give different results.

In the tables, it is not necessary to give two decimal places in the results, for instance in the percentage of the different granulometry fractions. Regarding this, I do not know if you used the international system from IUSS to check the granulometry, so the texture, or the USDA system. This is an important issue because of the differences regarding the

size of the particles (sand, silt, clay) considered in both systems.

In figure 5, more information is needed in the footnote to understand the meaning of the results shown. Does “Before and rainfall” mean from 0 days to 180 days?

Thanks to the authors for the number of results presented in this article. But sometimes it is difficult to have a good discussion, although this section, discussion, is well divided into sub-sections to facilitate understanding of the results.

I agree with the conclusions, but please consider that this is a short experiment done under laboratory conditions. So, the results and conclusions are of interest, but a new step is waiting: applying the conclusions in field conditions. Only after that, the practical implications can be greater than those expected after this work.

It is important to valorize so positively the hard work done by the authors.

In the case of the references given and the citations, I believe that, in some way, they can be improved, as many works have been done by using organic amendments and studying soil loss in many countries.