

Dear Editor of Solid Earth

Please find attached a revised version of the manuscript entitled "*Methodological interference of biochar in the determination of extracellular enzyme activities in composting samples*".

First of all, I would like to thank the referees and Chief Editor whose suggestions have definitely improved the paper. Mainly, discussion part has been also improved with adding some references. Also, the additional table for biochar property as the first referee's suggestion improved the paper. All comments and corrections have been added with blue colours.

Thank you very much,

Best regards,

KEIJI JINDO

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Dear Chief Editor

Thank you very much for your comments and suggestions, all of them have been considered in order to improve the quality of this paper. The comments of chief editor are relevant and reasonable. We amended the recommended references to improve the manuscript.

Reviewer 1

Dear reviewer 1,

Thank you very much for your suggestions, all of them have been taken into consideration in order to improve this paper. All our response for your comments was described with blue colour as following:

1. Introduction can be improved adding references about the positive aspects of use of biochar in composting processes. Also, information about the influence of the application of biochar and compost with biochar in soil must should be added.

As the referee suggestion, several references about the biochar in composting process and soil application were added.

2. Materials and methods

2.1. It would be better to introduce a table with biochar properties instead of the description between lines 12 and 16. You can add this properties on a new table.

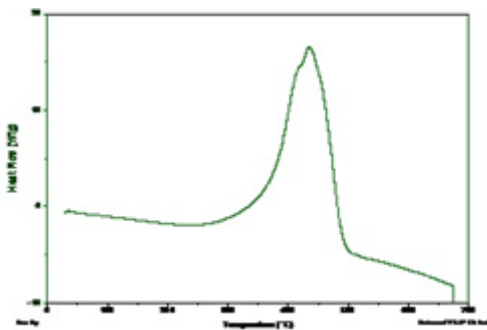
According to referee's suggestion, we amended additional Figure.

2.2. Also, the different methods pH, elemental analysis, N, P, ash ...should must be described.

The description was added in the manuscript.

2.3. The temperature and heating rate are very important parameters with a great influence in biochar surface properties. The range of temperatures between 400-600 is wide. Could you specify better the final temperature?

The final temperature was around 550, which is reflected also in TGS file (in the attachment file).



3. Results and discussion

3.1. the surface properties as you wrote (line 26) has a great importance in sorption.

It should be a good idea to relate with iodine number and MB adsorption capacity.

Perhaps, it could be interesting to determine these parameters in the final compost.

The details about the surface area and absorption parameters were added. Unfortunately, the determination of these parameters in the final compost was not evaluated.

Questions:

1. Do you think that the same effect about the PNP determination could be observed in soils amended with these compost?

The effect could be slightly appeared in the PNP determination, since these composts contain small amount (two percent of total volume). Also, the type of soil should be taken into the consideration for the absorption. Our study was focused on the composting process, which the biochar presence plays great role on improving the compost quality.

Regarding the sole biochar application to soil, the interference of biochar with biochemical analysis was already reported (Liang et al., 2010).

Liang, B, et al., 2010. "Black carbon affects the cycling of non-black carbon in soil." *Organic Chemistry* 41, 206–213

Reviewer 2

Dear reviewer 2,

Thank you very much for your comments, corrections and suggestions. We have taken into consideration all of them in order to improve the quality of this paper. All our response for your comments was described with blue colour as following:

The paper deals with a significant problem in the determination of enzymatic activity.

There are some language errors highlighted in the attached file. It is imperative to specify the exact procedure used for performing the PNP adsorption experiments. In particular it is not specified whether the PNP was extracted with the same procedure as for enzyme assay (i.e. with NaOH/THAM).

We have included the description of the procedure, which is the same way as the Referee pointed out.

Please also note the supplement to this comment:

<http://www.solid-earth-discuss.net/6/C346/2014/sed-6-C346-2014-supplement.pdf>

The orthography error, highlighted by the referee was modified.