

Interactive comment on “Biochar as growing media additive and peat substitute” by C. Steiner and T. Harttung

Anonymous Referee #1

Received and published: 23 April 2014

The novelty of the paper is the use of biochar as growing media is very interesting and there are not too much information about it. I consider that the paper is very interesting but some points must be improved before to be published:

1. Introduction:

1.1. I know that there is not too much information about this topic, but authors must include more references about the topic, for example:

Dumroese RK, Heiskanen J, Englund K, Tervahauta A. Pelleted biochar: Chemical and physical properties show potential use as a substrate in container nurseries. *Biomass Bioenerg* 2011; 35: 2018-2027.

1.2. Explain better why the properties of biochar can be positive to make growing

C328

media. For example, biochar can have positive effect in water retention properties, improve pH, low salinity with respect to other materials. . .

2. Materials and methods:

You should explain in these section all the methods used for example how do you measure “Moisture uptake and drying of different growing media”

3. Results and discussions

The discussion is very simple and you must try to improve it as follow:

1. Authors should explain why the different effects occur in the growing media, for example why “Surprisingly, biochar reduced (25% addition) and increased the pH in mixtures with peat at higher concentration compared to peat” or “Six weeks after planting the growing media clay granules, biochar, biochar+HA and perlite had the same pH and EC (means, 7.7 and 827 μScm^{-1} , respectively)”.

Try to justify all the results.

2. To justify all the results, it would be convenient to add a table with the properties of the raw materials and the mixtures, for example, pH, EC, nutrients content. . . It can help

3. You should explain the methods in the section materials and methods.

4. Conclusions

You must add it this section in the paper.

Questions:

Why did you decide the next preparation conditions “The biomass was heated to a maximum temperature of 600 C? To obtain a similar material to peat will not be better a lower temperature?

Why did you not determine hydrophysical properties of substrates

C329

