

Review Form 1.7

Journal Name:	International Journal of Plant & Soil Science
Manuscript Number:	Ms_IJPSS_105251
Title of the Manuscript:	Effect of bamboo biochar on growth and morphological traits of Bambusa balcooa under Copper contaminated soil: A pot-culture study
Type of the Article	

General guideline for Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound. To know the complete guideline for Peer Review process, reviewers are requested to visit this link:

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PART 1: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
<p>Compulsory REVISION comments</p> <ol style="list-style-type: none"> 1. Is the manuscript important for scientific community? (Please write few sentences on this manuscript) 2. Is the title of the article suitable? (If not please suggest an alternative title) 3. Is the abstract of the article comprehensive? 4. Are subsections and structure of the manuscript appropriate? 5. Do you think the manuscript is scientifically correct? 6. Are the references sufficient and recent? If you have suggestion of additional references, please mention in the review form. <p><u>(Apart from above mentioned 6 points, reviewers are free to provide additional suggestions/comments)</u></p>	<ol style="list-style-type: none"> 1. Yes, the manuscript appears to be important for the scientific community. This research could contribute to the development of sustainable and eco-friendly strategies for remediating metal-contaminated soils, which is a significant concern globally. Additionally, the findings of the study, if properly presented and discussed, could inspire further research and applications in the area of biochar-based soil improvement and heavy metal remediation 2. "Impacts of Bamboo Biochar Amendment on Growth, Morphological Traits, and Biomass Allocation of <i>Bambusa balcooa</i> Under Copper-Contaminated Soil Conditions" will be more apt. 3. An abstract should be concise, it should also provide enough information for readers to understand the study's scope, approach, key findings, and potential implications. 4. No. But need more sections like the characterization studies of biochar 5. To say the manuscript scientifically correct it should include the biochar characteristic properties in details and also the removal mechanism of heavy metal based on the properties of biochar. 6. Reference is insufficient. <p>The study conducted by the authors on the use of bamboo biochar for mitigating the impact of copper contamination on <i>Bamboosa balcooa</i> growth is commendable. The research provides valuable insights into the potential of biochar as a remediation strategy for heavy metal-contaminated soil. The experimental design appears robust, with a clear outline of the pot-trial study involving different copper concentrations and biochar amendment.</p> <p>However, there are a few aspects that could be further addressed or clarified in the manuscript:</p> <p>Biochar Composition and Properties: Providing information about the properties of the bamboo biochar used in the experiment would strengthen the study. Details of biochar characterisation studies including the details of functional groups, surface morphology, thermogravimetric properties, other information like pyrolysis temperature, surface area, and pH of the biochar could help in understanding its interactions with copper and its impact on plant growth.</p> <p><u>While your study focuses primarily on the impact of bamboo biochar on <i>Bambusa balcooa</i> growth under copper-contaminated soil, not including detailed characteristics of the biochar could be a potential limitation. The properties of the biochar, such as its pyrolysis temperature, surface area, pH, and elemental composition, can significantly influence its interactions with both the soil and the plant. Including some basic information about the biochar's properties, even if it's limited, could provide more context for your results and help readers understand the mechanisms at play. If detailed characteristics of the biochar are not available, you could still consider mentioning the general source of the bamboo biochar and briefly acknowledging that its properties could have implications on its interactions with the soil and plant. Remember, while your primary focus is on the growth of <i>Bambusa balcooa</i> and the impact of copper and biochar, providing some information about the biochar's properties can help strengthen the scientific rigor and understanding of your study.</u></p> <p>Discussion of Results: While the results section highlights the impact of copper contamination and the mitigating effects of bamboo biochar on various growth parameters, the discussion could delve deeper into the underlying mechanisms. Exploring the possible reasons behind the observed increase in root, shoot, and leaf biomass with biochar amendment under higher copper concentrations would enhance the understanding of the study's findings.</p>	

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	<p>Ecological Implications: It could be worthwhile to touch upon the broader ecological implications of using bamboo biochar for soil remediation. Discussing potential effects on soil microorganisms, nutrient cycling, and other ecosystem services could provide a more holistic perspective.</p> <p>Addressing the above points would further enhance the clarity and depth of the manuscript, making it a stronger contribution to the field of environmental remediation.</p>	
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<p>Minor REVISION comments</p> <p>1. Is language/English quality of the article suitable for scholarly communications?</p>	<p>Need improvement. It is advisable to use some grammar checking apps.</p>	
<p>Optional/General comments</p>	<p>Include the biochar characterisation studies and also the possible mechanism of biochar impact. The present content seems just a superficial appraisal only, as several works are being published with hard core biochar characterisation studies when using as soil amendment. Another major concern is the basic heavy metal content in the biochar itself.</p> <p>The characterization of biochar is crucial for studies like yours that investigate its effects on plant growth and soil remediation, especially when dealing with heavy metal contamination. Here's why biochar characterization is important in your work:</p> <ul style="list-style-type: none"> • Understanding Mechanisms: The properties of biochar, such as surface area, porosity, pH, and elemental composition, influence its interactions with soil, contaminants, and plants. Characterization provides insights into how biochar might adsorb or immobilize heavy metals, affect nutrient availability, alter soil pH, and impact water-holding capacity. These mechanisms underpin the observed effects on plant growth and contamination reduction. • Detailed biochar characterization enhances the reproducibility of your study. If other researchers aim to replicate or build upon your work, they need to know precisely what type of biochar was used. This includes its source, production conditions, and specific properties. Reproducibility is fundamental to the scientific process. • Different types of biochar may have varying effects on plant growth and metal remediation. Characterization data can guide future research by helping researchers select biochars with properties that are best suited for specific applications. Optimization of biochar type and application rate becomes more informed with proper characterization. • Including biochar characterization enhances the scientific validity of your study. It demonstrates a comprehensive approach and reinforces the credibility of your findings. The absence of characterization data could leave questions about the biochar's role and its specific impact on the observed outcomes. • Characterization data can provide insight into the mechanisms driving your results. If certain properties of the biochar align with specific observations, this connection can be discussed in greater depth, strengthening the discussion section of your paper. <p>Since your study's main focus is on plant growth under copper contamination with biochar amendment, providing at least some basic biochar characterization information strengthens the scientific foundation of your work, enables informed interpretations, and contributes to the overall credibility and impact of your findings.</p> <p>Since our group is working on the impact of biochar application on soil I can strongly and confidently suggest you to refer one of our paper : <i>Invasive Wetland Weeds Derived Biochar Properties Affecting Soil Carbon Dynamics of South Indian Tropical Ultisol.</i> You will get a clear picture of biochar characterization studies and its implication on soil application Without this section the work is scientifically incomplete. Kindly incorporate the portion.</p>	

PART 2:

	<p>Reviewer's comment</p>	<p>Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</p>
<p>Are there ethical issues in this manuscript?</p>	<p><i>(If yes, Kindly please write down the ethical issues here in details)</i></p>	

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