

Review Form 3

Journal Name:	International Journal of Plant & Soil Science
Manuscript Number:	Ms_IJPSS_124530
Title of the Manuscript:	UTILIZATION OF ARBUSCULAR MYCORRHIZAL FUNGI FOR THE EFFICIENCY OF LEAD METAL ABSORPTION AND YIELD OF HANJUANG PLANTS (<i>Cordyline fruticosa</i>)
Type of the Article	

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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 guidelines for the Peer Review process, reviewers are requested to visit this link:

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Review Form 3

PART 1: Review Comments

Compulsory REVISION comments	Reviewer's comment	Author's Feedback <i>(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i>
<p>Please write a few sentences regarding the importance of this manuscript for the scientific community. Why do you like (or dislike) this manuscript? A minimum of 3-4 sentences may be required for this part.</p>	<p>This manuscript presents an important study on the utilization of Arbuscular Mycorrhizal Fungi (AMF) to enhance the growth and lead (Pb) absorption efficiency in <i>Cordyline fruticosa</i> (Hanjuang plant), a relevant topic in phytoremediation. The research contributes to the growing body of work on environmental biotechnology by addressing heavy metal contamination through plant-fungi symbiosis. This work is valuable as it explores an eco-friendly solution for soil remediation and offers insights that could be applied to other pollutants.</p> <p>However, the study's duration was relatively short (8 weeks), and longer-term studies may provide more robust data, especially for Pb absorption efficiency. The manuscript would benefit from expanded discussions on the potential long-term impacts of AMF on lead translocation to above-ground plant tissues and comparisons with other phytoremediation methods. Additionally, more attention could be given to the molecular or physiological mechanisms involved in Pb uptake by AMF-colonized plants.</p> <ol style="list-style-type: none"> Limited Duration (8 Weeks): Weak Point: The study only lasted for 8 weeks, which may not have provided enough time for the full potential of AMF to manifest in terms of Pb absorption. Modification: Extend the duration of the study to 12–16 weeks to allow AMF to fully establish its symbiotic relationship with plant roots for more accurate data. Focus on Pb Absorption in Roots Only: Weak Point: The study focused only on Pb accumulation in roots, neglecting other parts like stems and leaves. Modification: Measure Pb accumulation in other plant parts (stems, leaves) to provide a comprehensive understanding of AMF's effect on the whole plant. Small Sample Size and Experimental Design: Weak Point: The use of 6 replications per treatment may limit the statistical power of the findings. Modification: Increase the number of replicates or include additional AMF doses for stronger statistical analysis. Non-significant Effect on Pb Absorption Efficiency: Weak Point: The AMF treatment showed no significant effect on Pb absorption efficiency. Modification: Use multiple AMF strains to test for effectiveness in enhancing both growth and Pb absorption. 	
<p>Is the title of the article suitable? (If not please suggest an alternative title)</p>	<p>Yes, the title is suitable, but a minor suggestion could be to make it more specific: "Utilization of Arbuscular Mycorrhizal Fungi for Enhancing Lead Absorption and Growth in Hanjuang Plants (<i>Cordyline fruticosa</i>)"</p>	

Review Form 3

<p>Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here.</p>	<p>The abstract provides a clear summary of the study. However, it could be improved by adding specific data or percentages to highlight the exact impact of AMF on plant growth and Pb absorption. Additionally, a more detailed mention of the statistical significance of results would make the abstract more robust.</p> <p>Suggested changes:</p> <p>Include numerical results, such as the percentage increase in plant biomass or Pb absorption efficiency. Clarify whether the increase in plant growth was statistically significant and at what p-values.</p>	
<p>Are subsections and structure of the manuscript appropriate?</p>	<p>Yes, the subsections and structure are clear and appropriate. The manuscript follows a logical flow, starting with the introduction, methodology, results, and discussion. The authors should ensure all subsections are uniformly formatted, especially tables and figures, for better readability.</p>	
<p>Please write a few sentences regarding the scientific correctness of this manuscript. Why do you think that this manuscript is scientifically robust and technically sound? A minimum of 3-4 sentences may be required for this part.</p>	<p>The manuscript is scientifically sound, with a clear experimental design and appropriate methods for evaluating AMF's effect on plant growth and Pb absorption. The use of a Completely Randomized Block Design (CRBD) is suitable for the study. However, the statistical analysis could be further strengthened by including more detailed results on variance, correlations, and confidence intervals.</p> <p>The findings regarding the non-significant effect of AMF on Pb absorption efficiency are consistent with other literature, but further discussion on the potential reasons behind this result, such as limited interaction time between AMF and roots, would improve the paper.</p>	
<p>Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form. =</p>	<p>The references are generally adequate but could be updated with more recent research on phytoremediation and AMF interactions from the past five years. This would provide more context for the findings and relevance to current environmental concerns.</p> <p>Suggested additions:</p> <p>New studies on AMF and heavy metal remediation (2019-2023). Literature comparing AMF efficiency with other soil remediation techniques.</p>	

Review Form 3

<p>Minor REVISION comments</p> <p>Is the language/English quality of the article suitable for scholarly communications?</p>	<p>The English quality is generally good, but some grammatical errors and awkward phrasings need revision. Sentences could be simplified for clarity, and scientific terms should be used consistently. A thorough language editing process is recommended to improve readability.</p>	
<p>Optional/General comments</p>	<p>This study is a valuable contribution to the field of phytoremediation. It could have broader implications if extended to longer-term experiments and by exploring the physiological mechanisms of AMF. The authors are encouraged to expand on these aspects in future research.</p> <ol style="list-style-type: none">1. Single Heavy Metal Focus (Pb Only): Weak Point: The research only examined Pb absorption, ignoring other potentially co-existing heavy metals in contaminated soil (e.g., cadmium, arsenic, zinc). Modification: Future studies could expand the scope to include multiple heavy metals to simulate real-world contamination scenarios and assess AMF's effectiveness across various metals.2. Controlled Environment (Polybags): Weak Point: The experiment was conducted in polybags, which may not accurately replicate natural soil conditions such as varying moisture levels, soil aeration, or microbial diversity. Modification: Conduct field trials to assess AMF performance in real-world contaminated sites for a more accurate reflection of AMF, plant, and environmental interactions.3. Lack of Mechanistic Insights: Weak Point: The study demonstrated improved plant growth and root mass with AMF but did not explore the specific mechanisms by which AMF facilitated Pb absorption or immobilization. Modification: Add a molecular or physiological analysis to explore how AMF alters plant root structure, enzyme activity, or metal transport mechanisms, potentially by studying root exudates and their role in Pb uptake.4. Absence of Soil Health and Microbial Diversity Evaluation: Weak Point: The study did not examine how AMF affected overall soil health, nutrient levels, or microbial diversity, which could also impact plant growth and Pb absorption. Modification: Incorporate soil health assessments (e.g., soil pH, nutrient content) and microbial diversity analysis to provide a more holistic understanding of how AMF influences the phytoremediation process. <p>While the research is scientifically sound, the manuscript could benefit from clearer language, more recent references, and extended discussions on the long-term effects of AMF on Pb absorption efficiency.</p>	

Review Form 3

PART 2:

	Reviewer's comment	Author's comment <i>(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)</i>
Are there ethical issues in this manuscript?	<i>(If yes, Kindly please write down the ethical issues here in details)</i>	

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