



REVIEWER'S REPORT

Manuscript No.: IJAR-50420

Date: 26-02-2025

Title: Greening agriculture with cocopeat: Paving the way for sustainable crop production

Recommendation:

- Accept as it is.....**YES**.....
- Accept after minor revision.....
- Accept after major revision
- Do not accept (*Reasons below*)

Rating	Excel.	Good	Fair	Poor
Originality	√			
Techn. Quality		√		
Clarity		√		
Significance			√	

Reviewer's Name: Tahir Ahmad

Reviewer's Decision about Paper: **Recommended for Publication.**

Comments (*Use additional pages, if required*)

Reviewer's Comment / Report

Title and Abstract:

The title effectively captures the essence of the study, highlighting the potential of cocopeat in sustainable agriculture. The abstract provides a concise summary of the research, detailing the problem statement, methodology, key findings, and implications. It clearly establishes the significance of soil degradation and introduces cocopeat as a viable organic amendment for soil improvement. The inclusion of specific details, such as the experimental duration and test plant species, strengthens the abstract's clarity.

Introduction:

The introduction sets a strong foundation by defining soil, its importance, and the threats posed by soil degradation. The inclusion of FAO's definition of soil degradation enhances the credibility of the discussion. Relevant statistics, such as the extent of degraded soil globally and annually lost agricultural land, provide context and emphasize the urgency of the problem. The explanation of mitigation measures, particularly integrated nutrient management and organic amendments, leads smoothly into the introduction of cocopeat as an alternative soil amendment. The discussion on coir pith production and waste generation offers valuable insight into the material's availability and potential for agricultural use.

Methodology:

The research design is straightforward, involving varied concentrations of cocopeat amendments and an

REVIEWER'S REPORT

evaluation of their effects on soil properties and plant growth. The inclusion of specific treatment concentrations (0% to 100%) provides clarity on the experimental setup. The study duration of 60 days is adequately mentioned, ensuring that the reader understands the timeline of observations. However, the methodology would benefit from more explicit details on the experimental design, such as replication, data collection methods, and statistical analysis, to reinforce reproducibility.

Results and Discussion:

The findings indicate that increasing cocopeat concentration positively influenced soil physicochemical properties and plant growth, except for the 100% cocopeat treatment, which exhibited growth inhibition. This observation aligns with existing literature on cocopeat's water retention and aeration properties. The discussion effectively connects the results with nutrient availability, plant growth responses, and soil improvement. The study provides meaningful insights into the optimal use of cocopeat, reinforcing its potential as a soil amendment rather than a complete replacement.

Conclusion:

The conclusion succinctly summarizes the study's key findings, reaffirming that cocopeat incorporation enhances soil quality and plant growth. The mention of growth inhibition at 100% cocopeat serves as a crucial observation, indicating the importance of balanced amendments. The study's practical implications for sustainable agriculture are well-articulated, contributing to ongoing discussions on organic soil management.

Overall Assessment:

The manuscript is well-structured, with clear articulation of the research problem, objectives, methodology, and findings. The logical flow of information ensures readability and comprehension. The study's relevance to sustainable agriculture is evident, and its findings hold significant practical implications. The inclusion of statistical analysis and more methodological details would enhance the robustness of the study. Nonetheless, the research contributes valuable knowledge to soil amendment strategies using cocopeat.