Review of: "Synthesis, Characterization and Ameliorative Effect of Iron Oxide Nanoparticles on Saline-Stressed Zea Mays"

Nadia Riaz[1]

1 COMSATS University Islamabad, Abbottabad Campus

Potential competing interests: No potential competing interests to declare.

Manuscript: Qeios

Synthesis, Characterization and Ameliorative Effect of Iron Oxide Nanoparticles on Saline-Stressed Zea Mays

The manuscript, which discusses “Synthesis, Characterization and Ameliorative Effect of Iron Oxide Nanoparticles on Saline-Stressed Zea Mays,” requires significant improvements before it can be considered for publication. The text needs refining for readability and should include quantitative data. Ethical considerations should also be addressed, and comparative analysis should be expanded upon. Additionally, a comprehensive conclusion with future research recommendations is necessary to improve the quality of the text. Below are major comments to be addressed in the revised manuscript.

Abstract: The paragraph is well-constructed but could benefit from clearer and more concise language. Technical details on FeO NP synthesis and characterization may need brief explanations for non-specialist readers. Details like nanoparticle size and light absorption wavelength could be considered excessive unless crucial. The significance of statistical improvements in Zea mays needs clarification on methods and practical implications. While the deduction that FeO NPs alleviate salt effects is reasonable, explicit statements on implications for agriculture and food security would enhance the conclusion.

The Materials & Methods section describes the collection and preparation of Diodella sarmentosa leaves for FeONPs synthesis. The taxonomic identification process is well-detailed, ensuring accuracy. The extraction process, though clear, could be more concise. The synthesis details are comprehensive, explaining the reconstitution and heating process, resulting in the formation of FeO NPs. The experimental set-up is visually represented in Fig. 1, enhancing clarity. Overall, the section provides a thorough methodology, but certain details could be streamlined for brevity.

The results section should be self-explanatory, providing an in-depth discussion and elaboration.

The section lacks clarity and organization, causing confusion and making it difficult to understand the order and sequence of explanations, observations, and their conclusions. The tale swings between different characterization outcomes without a clear and coherent flow. Furthermore, the characterisation data is poorly organized, and the graphs (Figure 2 to Figure 5) lack appropriate labeling. Same comment for the corrections of Tables. To improve clarity and comprehension, the

author should rewrite every graph and ensure accurate axis labeling.

The section lacks clear discussions from recent literature regarding various characterization results.

The conclusion section requires improvement in its writing.

The conclusion lacks a concise review of major findings and recommendations for future research or process optimization. Including these elements would provide a comprehensive wrap-up and help guide potential future directions.