Qeios

Peer Review

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

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The manuscript presents a well-designed, innovative, and timely study on the use of FeONPs to alleviate salinity stress in Zea mays. The use of green synthesis methods to create nanoparticles and their subsequent application in agriculture is a significant contribution.

- It is important to maintain consistent terminology throughout the manuscript. For example, the manuscript alternates between using "FeONPs" and "Fe-NPs." I recommend standardizing this to one term (preferably "FeONPs") for clarity and consistency.
- Additionally, make sure the term "salinity-stressed Zea mays" is used consistently across all instances to avoid confusion. For example, in Figure 6, the "average root lengths" of the plants are described, but the figure does not explicitly indicate the salt treatment context. Clarifying this in the figure legend would be helpful.
- While the manuscript is well-written overall, a few grammatical errors need attention. For instance, in Table 3, the term "Length of Plants" could be revised to "Root Lengths of Plants" for clarity.
- Some minor typographical errors need to be corrected (e.g., “chlorophyl” should be changed to “chlorophyll”).
- The figures are informative, but some could benefit from higher resolution, particularly the SEM and TEM images. A clearer depiction of the nanoparticle morphology and size distribution would help readers better understand the structural characteristics of the synthesized nanoparticles.
- It would be beneficial to discuss the potential scalability of this approach for large-scale agricultural use. Are there any challenges or limitations that might arise when applying FeONPs in real-world

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farming environments, such as cost, distribution, or environmental concerns? Addressing these points will provide a more complete picture of the practicality of this technique.

Declarations

Potential competing interests: No potential competing interests to declare.