

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

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Potential competing interests: No potential competing interests to declare.

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

Ms ID/ Ref no.:

Journal Name:

Reviewer Recommendation: Major Revision

Reviewer's Comments to Authors:

1. The alignment of the paper needs modifications as it is not justified and uniform.
2. Line number is missing in the paper.

Abstract

1. The objectives of the study are not clearly mentioned in the given abstract. The abstract must be fully self-contained and make sense by itself without further reference to outside sources or to the actual paper. It is important to provide the relevance of your work and the main outcomes. The provided abstract is not up to the mark and does not follow the standard pattern, i.e., background of study, objectives, major results, and concluding remarks.
2. The word limit of the abstract is 200-250 words. The provided abstract is too short and needs some modifications to make it more enriched.
3. Keywords should be arranged in alphabetical order.

Introduction

1. Page 2, 'These plant-related consequences of soil salinity are linked to the toxicity of Na and Cl ions and the low osmotic potential of soil solutions, which results in a water deficit in plant cells' should be re-written as 'The toxicity of Na and Cl ions and the low osmotic potential of soil solutions, which causes a water deficit in plant cells, are linked to these plant-related consequences of soil salinity.'
2. In-text references should be arranged in chronological order, and if of the same year, they should be arranged in alphabetical order.

3. Page 3; 'It's the most considered in recent times for the biosynthesis of various metal nanoparticles' is grammatically incorrect.
4. Mention the clear objectives of the research in the last paragraph of the Introduction section.

Materials and Methods

1. Mention the complete address of the Federal University of Technology, Owerri, from where the samples were collected for the study.
2. The alignment and quality of Figure 1 are not proper. Enrich and modify the figure to make it more understandable and accurate.
3. Mention the model numbers, serial numbers, versions, and other important details of all the instruments used in the experiment.
4. Page 4: What is FTIR equipment? Expand and explain it in detail to state the importance of this instrument in this research study.
5. Page 5: "Five grains of each maize were planted." It is written incorrectly.
6. The chemical names used in the experiment should be written in an accurate manner using subscripts for numerals. Writing the names like "KH₂PO₄/K₂HPO₄" or 'H₂O₂' is incorrect and not acceptable in journals.
7. Page 6: Write the principle behind the Mukherjee (Mukherjee, 1983) method used in the assessment process in this research.
8. Page 6: Mention the reason for adding riboflavin in the process of assessment of antioxidant enzyme activity.

Results

1. The legends of the figures should encompass the facts or results they are stating. Enrich the legends of the figures used in the Results section to make them more understandable.
2. The discussion of the observed results and their relevance in this research area should be mentioned under the sub-heading "Discussion." The content is accurately mentioned but the sub-heading is missing, making it confusing.
3. The discussion should be written separately for each section, the same way the results are mentioned, justifying the different objectives of the paper.

Conclusion

1. The conclusion should include a brief about the background of the research, the final results of the experiment, and the future prospects of the research work in everyday life. Rewrite this section following the standard pattern mentioned above.

References

1. Mention DOIs in all the references.
2. Line spacing and alignment in this section are not uniform. It should be the same throughout the whole research paper.

3. References should be arranged in alphabetical order.
4. The format of the references appears to be inconsistent, with some journal names not being abbreviated correctly. A uniform format should be maintained throughout. Besides, there are missing citations. Importantly, please use original references. I noticed a preference for indirect citations over original references in some parts of the text of the manuscript. Please cite the original sources where possible to enhance the credibility and accuracy of the information presented.
5. The different sections of the manuscript are poorly cited with references and require updating and validation with previous studies. The relevant papers listed below may be considered to enhance the scientific quality of the manuscript significantly.

<https://doi.org/10.1016/j.scitotenv.2023.168318>; <https://doi.org/10.1016/j.scitotenv.2023.169097>;

<https://doi.org/10.1007/s11104-024-06499-9>; <https://doi.org/10.1016/j.plantsci.2023.111964>;

<https://doi.org/10.1016/j.plaphy.2023.108259>