

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.

	Yes	Can be improved	Must be improved	Not applicable
Does the introduction provide sufficient background and include all relevant references?	()	()	(x)	()
Is the research design appropriate?	()	()	(x)	()
Are the methods adequately described?	()	(x)	()	()
Are the results clearly presented?	()	()	(x)	()
Are the conclusions supported by the results?	()	()	(x)	()

Comments and Suggestions for Authors

The Authors described the Synthesis, Characterization and Ameliorative Effect of Iron Oxide Nanoparticles on Saline-Stressed Zea Mays.

The Authors have to extensively revise their ms before it could be accepted for publication following these points:

- Title could be improved by using a colon to separate the main topic from the subtopic.
- In the abstract, the author should mention the types of sowing and growing conditions, like field experiments or pots, or any other types.
- Morphological analysis should be included for better understanding of the role of nanoparticles against abiotic stresses.
- The aim and objectives are not clear, and the introduction should be improved by adding the physiological mechanism of plants in response to FeONP and explaining the role of green synthesis of nanoparticles as green nanotechnologies that are eco-friendly and have a remarkable impact in agriculture.
- In the introduction, the information about problems of salinity related to crops in the authors' country is missing.
- The whole ms has long sentences, which should be split using the 8*8 rule.
- The herbarium number of *Diodella sarmentosa* should be mentioned.

- Explain the choice of this plant. Why this one particularly and not another one?
- 100°C has a negative effect on plants; the author should explain why he used 100°C heating, as higher temperatures can also cause thermal degradation, oxidation, or evaporation of some heat-sensitive compounds.
- In the methodology, FeONPs Synthesis (2.2.) has to be better explained and mention the name of the protocol used.
- The experiment design of Seed and Soil Preparation (2.4) seems reasonable, but there are some aspects that you may want to consider or clarify.

First, you may want to explain why you chose a non-contaminated area on the premises of FUTO as your soil source.

Second, how did you ensure that the soil was not contaminated by any pollutants or pathogens?

Third, you may want to autoclave the soil before placing it in the pots, especially if you are planning to grow plants or inoculate the soil.

Fourth, the experiment should have positive and negative controls.

- The subscripts present in all chemical formulas should be correct.
- The results (3) portion has a discussion, so the main heading should be corrected (Results and Discussion).
- This study has two parts (1. Synthesis of NPs, 2. Application of NPs on stressed plants), and both parts should have separate main headings and subheadings.
- If the leaf extract served as a reducing agent, then the chemical composition of the extracts has to be better characterized and discussed according to the current knowledge from the literature.
- The discussion portion has to be better discussed according to the current knowledge from the literature. As the discussion section is not well-argued and does not compare your results with previous studies or explain the mechanisms of FeONPs' action on the plants.
- What is meant by 1° amine and 2° amine compounds in result (3.1)?
- What is represented by A, B, C, D, and E in Tables 2 and 3?
- At what concentration, FeONPs have showed stimulating properties?
- How do you conclude that this NPs is biocompatible for usage without mentioning the quantity?
- Most of the figures are too small and of low quality for publication. The captions of all figures should be self-explanatory.
- Pictures of the pots experiment have to be added for better understanding, particularly images of B and D.
- The conclusion section is too brief and does not highlight the main contributions and limitations of your study. Also,

correct the subscript of 80 0C.

- References are not presented according to the Instructions to the Authors.