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.

This is an interesting preliminary study on the application of green technology for salinity stress mitigation. However, the starting argument for the approach taken needs to be more robust. Particularly, no scientific or economical justification has been provided for using Diodella sarmentosa leaves as the starting material for nanoparticles. Does this plant have special properties for such an application? Is it a particularly abundant vegetation component that can be sustainably harvested in the wild, or a by-product of mixed cropping? The authors also have not discussed any mechanism by which P. sarmentosa extracts (or any other plant derivative) might be contributing to nanoparticle formation and function.

The main premise of using iron-based nanoparticles as a foliar spray seems to be iron deficiency in stressed plants. Yet there is no assessment of iron utilization efficiency or the uptake of any other essential nutrient by the seedlings under the various treatment regimes. Maize seedlings may actually exhibit deficiency symptoms later in the developmental cycle, especially during the reproductive phase, so this paper will benefit from nutrient uptake data during the phase of study.

The statement “sweet potato, wheat, and maize are particularly sensitive, while cotton, barley, and sugar beet are highly tolerant” should have a reference. Abbreviated terms like NED and SOD should be explained in their full forms at first mention.