



SDI Review Form 1.6

Journal Name:	Asian Journal of Soil Science and Plant Nutrition
Manuscript Number:	Ms_AJSSPN_42093
Title of the Manuscript:	Enhancement of seed zinc and iron density in cowpea (Vigna unguiculata):A Physiological Approach
Type of the Article	Original Research Article

General guideline for Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound. To know the complete guideline for Peer Review process, reviewers are requested to visit this link:

(<http://www.sciencedomain.org/page.php?id=sdi-general-editorial-policy#Peer-Review-Guideline>)



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PART 1: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
Compulsory REVISION comments	- Editorials as indicated in the manuscript - The introduction should be expanded to include the significance of biofortification of micronutrient in certain plant species and how this has been a viable intervention in fighting micronutrient deficiencies in humans (cite case studies where they exist). Also, authors need to note that bioaccumulation in plants does not necessarily directly translate in bioavailability for the human nutrition. Check this out - Lines 44-45: Best if expressed the forms applied as Zn and Fe instead of as their salts - Line 48: What was the basis of blocking in the glass house? - Lines 58-62: Is this not a reproduction of what Bisht et al. published? - Lines 75-76: What is properly? Why tap-water, couldn't it introduce the metals that are being investigated in the samples? - Line 81: How was it sampled? - Lines: But the objective focused on enhancement of Zn and Fe concentrations in plant tissues! Why bother with other plant parameters unrelated to this accumulation? - Lines 113-114: Were these fractions necessarily from applied Zn and Fe? Couldn't they be partly from native fractions? - Lines 130-131: Are these physiologically or otherwise linked with Zn and Fe concentrations so as to act as proxy indicators? If not, then what are they representing here? - Lines 134-135: Focus on enhancement of Zn and Fe concentrations/accumulation/biofortification. What you are presenting are not good indicators of this. Otherwise, you have to change the title and the objective in order to accommodative these responses - Line 138: The whole section needs recasting so that the authors discuss their own results/data extensively using own original opinions first, before rushing to discussing literature as "an escape route". For every illustration (Table/Figure) described in the Results section, authors should discuss the science behind the observations and the implications to development and science with respect to the subject of the study. Literature should only be used to substantiate your own views. Remember that this is not a review paper. It is you new ideas that constitute news and make this research paper original and worthwhile publishing in a credible journal	Because of the deficiency of nutrient in soil the nutrient level in fruit or seeds produce in that soil are naturally deficient in that nutrient. Therefore it has become the need of time to enhance the nutrient level particularly in staple crop which is biofortification. Especially the vegetarian human are totally depended upon the plant produce for their nutrient as well as vitamin. Deficiency of nutrients causes serious impacts on human health such as Zn deficiency causes stunting of growth, compromised immune system function, cancer, susceptibility to infectious diseases, and iron deficiency is related to anemia and poor birth outcomes in pregnant women, skins problems and pneumonia in children. In the next step experiment is being design to reduce the level of phytate which inhibit bioavailability of various nutrients to the human. Treatment pots were arranged randomized in the glass house at different position. There were three replicates in each treatment as per statistical requirement. Tap water is from University supply which is free from any kind of metal, microbes etc with appropriate EC and pH. This water is used for irrigation of experimental crop. With enhancement of Zn and Fe concentration in plant tissue it is also necessary for plant to flourish well for the supply of nutrients. So these parameters were checked to observe the growth, physiological (Catalase, peroxidase & carbonic anhydrase) and biochemical parameter for better survival of the plant. Photosynthetic efficiency is direct linked with growth and metabolism of plant. In green plants the chlorophyll content is well correlated with the Fe content. The rate of synthesis of aminolevulinic acid which is precursor of chlorophyll and heme synthesis is controlled by Fe. The decrease in chlorophyll content is impaired the photosynthetic products, its effect the yield of plants. Zn also plays indirect role in enhancement of photosynthetic efficiency of plant. Catalase and peroxidase Fe containing enzymes and carbonic anhydrase Zn containg enzyme which are directly linked Fe and Zn concentration in plant. They are also indicating the increase in level of Zn and Fe in plant tissue and their involvement in these enzymes.



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Minor REVISION comments	1. Line 21: No, they are not deficient in all soils; in contrast they are sometimes in excess thus causing phytotoxicity. Also, it not true that wherever Zn is deficient, Fe is also deficient!	
Optional/General comments	Not clear how many times this simple pot study was done! One round study does not merit journal publication. Some procedures in methodology bear detailed description similar to what would be found in a routine laboratory manual! Citations of sources may suffice	