Review Form 1.7

Journal Name:	**Asian Journal of Agricultural and Horticultural Research**
Manuscript Number:	**Ms_AJAHR_100891**
Title of the Manuscript:	**Cadmium priming alleviates salinity induced oxidative stress in pigeon pea**
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.
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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 **1. Is the manuscript important for scientific community?** (Please write few sentences on this manuscript) **2. Is the title of the article suitable?** (If not please suggest an alternative title) **3. Is the abstract of the article comprehensive?** **4. Are subsections and structure of the manuscript appropriate?** **5. Do you think the manuscript is scientifically correct?** **6. Are the references sufficient and recent? If you have suggestion of additional references, please mention in the review form.** **(Apart from above mentioned 6 points, reviewers are free to provide additional suggestions/comments)**	1. The manuscript can be important for scientific community The manuscript is relevant considering the context for which it is intended. However, it presents deficiency in the statistical analyses which could give greater sustainability to the results. 2. The title of the article is suitable. 3. The abstract of the article is comprehensive **.** 4. The subsections and structure of the manuscript is appropriate**.** 5. The manuscript is not scientifically correct. 6. The references are sufficient and recent. **Additional suggestions/comments** Commentaries Results Figure 1. I suggest adding a footnote to Figure 1 in order to better identify the treatments. Cd Pre-treated – CdCl2 pre-treated (50 µM) Salt stressed - Co-stressed …" High chlorosis and severe wilting symptoms were observed in control seedlings than that of Cd2+ pre-treated seedlings when exposed to salt stress. The Cd2+ pre-treated pigeon pea seedlings showed a higher amount of total chlorophyll content in the leaf tissues as compared to the control tissues. The elevated chlorophyll content was observed in co-stressed tissues as compared to control tissues during salt stress (Fig. 1A)." Figure 1A does not allow following the analysis performed. . I suggest presenting a more explanatory table or put numeric values inside each column. "The aggregation of Na+ and Cl- ions enhanced with larger salt concentrations, that hampered chlorophyll production by interfering with the Fe3+-containing chlorophyll synthesizing enzymes [42], enhancing the levels of the chlorophyll-degrading enzyme chlorophyllase and reactive oxygen species (ROS) [22]" …" In co-stressed pigeon pea seedlings, priming with Cd2+ (50µM CdCl2) enhanced total chlorophyll content. It was previously reported that Cd2+ priming increased total chlorophyll content in Trigonella foenum-graecum [43], Festuca arundinacea [44], and rice [45]." Put the verb in the present tense, these are citations. "The aggregation of Na+ and Cl- ions enhance with larger salt concentrations, that hampered chlorophyll production by interfering with the Fe3+-containing chlorophyll synthesizing enzymes [42] and enhance the levels of the chlorophyll-degrading enzyme chlorophyllase and reactive oxygen species (ROS) [22]" …" In co-stressed pigeon pea seedlings, priming with Cd2+ (50µM CdCl2) enhance total chlorophyll content. It was previously reported that Cd2+ priming increased total chlorophyll content in Trigonella foenum-graecum [43], Festuca arundinacea [44], and rice [45]." Highlight the result of stress caused by salt in your experiment. …" The relative water content (RWC) in CdCl2 pre-treated pigeon pea seedlings was higher than the control seedlings." Attention! Figure 1B does not show this result. In figure 1B it appears lower. I suggest put numeric	

	values inside each column. …. Turgor pressure is essential for cell expansion [48], however, salinity diminishes turgor pressure, resulting in shorter shoot and root lengths and inhibited growth. Where are the results shown? Figure 2. I suggest adding a footnote to Figure 2 in order to better identify the treatments. Cd Pre-treated – CdCl2 pre-treated (50 µM) Salt stressed - Co-stressed …" In contrast to salt-stressed tissues, the H2O2 content in co-stressed tissues was much lower (Fig. 2)." It was actually lower but not "much lower" …" Salt induced the development of ROS such as hydrogen peroxide (H2O2), superoxide (O2-), and hydroxyl radicals (OH.) in plants [52]." Put the verb in the present tense, these are citations. ..." As a result, the H2O2 content in salt-stressed tissues was **significantly** higher than in co-stressed; Cd pre-treated, and control tissues in the current investigation, which was consistent with previous results." I suggest showing the significance levels of the different treatments in a table. Figure 3 I suggest adding a footnote to Figure 3 in order to better identify the treatments. Cd Pre-treated – CdCl2 pre-treated (50 µM) Salt stressed - Co-stressed …" The MDA content in the salt-stressed tissues was remarkably higher than the co-stressed tissues." It was high but not remarkably higher. …" Moreover, when comparing to control tissues exposed to salt, a limiting degree of lipid peroxidation was detected in co-stressed tissues, which leads to less amount of synthesis of malondialdehyde (MDA) as a byproduct of lipid peroxidation." This text must be a citation, indicate authorship. Figure 5 I suggest adding a footnote to Figure 5 in order to better identify the treatments. Cd Pre-treated – CdCl2 pre-treated (50 µM) Salt stressed - Co-stressed "…The SOD activity was detected higher in the co-stressed tissuesas compared to salt-stressed tissues" Visually, Figure 5 does not show this. I suggest that a numeric value be placed inside each column. Figure 6 I suggest adding a footnote to Figure 6 in order to better identify the treatments. Cd Pre-treated – CdCl2 pre-treated (50 µM) Salt stressed - Co-stressed Conclusion The conclusion of the study is based only on the presentation of the results of a descriptive analysis of the adopted treatments. The significance levels of the results for the different treatments were not shown. Despite the method indicating the performance of inferential statistical analysis to show the difference between proposed treatments using ANOVA, this was not done.	

Minor REVISION comments **1. Is language/English quality of the article suitable for scholarly communications?**		
Optional/General comments		

PART 2:

	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)*
Are there ethical issues in this manuscript?	*(If yes, Kindly please write down the ethical issues here in details)*	

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