

Review Form 1.7

Journal Name:	International Journal of Environment and Climate Change
Manuscript Number:	Ms_IJECC_100457
Title of the Manuscript:	Seed priming with H₂O₂ confers better yield in mungbean by modulating the antioxidant enzymes activities and metabolic processes of roots and leaves under salt-alkali mixed stress condition
Type of the 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:

(<https://www.journalijecc.com/index.php/IJECC/editorial-policy>)

Review Form 1.7

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)
<p>Compulsory REVISION comments</p> <ol style="list-style-type: none"> Is the manuscript important for scientific community? (Please write few sentences on this manuscript) Is the title of the article suitable? (If not please suggest an alternative title) Is the abstract of the article comprehensive? Are subsections and structure of the manuscript appropriate? Do you think the manuscript is scientifically correct? Are the references sufficient and recent? If you have suggestion of additional references, please mention in the review form. <p><u>(Apart from above mentioned 6 points, reviewers are free to provide additional suggestions/comments)</u></p>	<p>The manuscript important for scientific community.</p> <p>Most of the studies have mainly focused on only salinity, and salt-alkali combined stress research are limited. The main objectives of present study was to assess role of exogenously applied H₂O₂ as seed priming in mitigating the harmful effect of saline–alkaline stress on differentially tolerant mungbean genotypes (TMB-37and MH-1314). Saline-alkaline stress significantly decreased the chlorophyll content, leaf relative water content (RWC) and yield while enhanced malondialdehyde (MDA), proline and antioxidant enzyme activity in root and leaf samples of both mungbean cultivars. Seeds priming were done with 0.01% H₂O₂ and distilled water. Seed priming with H₂O₂ significantly improved the yield and yield attributes along with increment in leaf chlorophyll content, RWC as well as accumulation of osmolytes. The activities of antioxidant enzymes, viz., SOD, CAT and POX were also significantly increased in both mungbean genotypes and especially the CAT activity both in root and leaf tissue. However, relatively higher improvement was observed in genotype TMB-37. In conclusion, exogenously applied 0.01% H₂O₂ improved the saline–alkaline tolerance, which was reflected in terms of enhanced photosynthetic pigments, RWC, proline accumulation, and antioxidant enzyme activity of root as well shoot tissues, especially the CAT activity. 0.01% H₂O₂ appeared to be very effective in ameliorating the harmful effect of saline–alkaline stress on physiological traits, metabolic processes, and yield.</p> <p>The title of the article is suitable.</p> <p>The abstract of the article is comprehensive.</p> <p>The manuscript is scientifically correct, and subsections and structure of the manuscript are appropriate.</p> <p>References are sufficient.</p>	
<p>Minor REVISION comments</p> <ol style="list-style-type: none"> Is language/English quality of the article suitable for scholarly communications? 	<p>The english quality of the article is suitable for scholarly communications.</p>	
<p>Optional/General comments</p>	<p>on differentially tolerant mungbean genotypes (TMB-37and MH-1314). Add space water content (RWC) and yield while enhanced enhancing malondialdehyde... (MDA), proline, and antioxidant enzyme (add comma)</p> <p>Agronomic methods present a speedy answer to this issue in this situation [11, 12]. and seed production in variously tolerant mungbean genotypes.</p> <p>Seeds priming were was done with 0.01% H₂O₂ The present investigation was carriedout in plantation pot (size...</p> <p>During the course of the experiment, ...</p> <p>The analysis of both soil types types-of-soil was done in the Department of Soil Science,</p>	

Review Form 1.7

	<p>The Standard agronomical practices were performed.</p> <p>Evaporation indicates water requirement for crop and its mean value during the experimental period was 4.72 mm. (How it was determined?)</p> <p>absorbance was measured at 532 nm using a Hitachi U-2000 double-beam UV/Vis spectrophotometer, (Hitachi, Lake Sherwood, MO, USA).</p> <p>Figure 1: add a description of abbreviations. (e.g., T0, T1)</p> <p>I understand that when salinity stress conditions is mentioned, you mean salt-alkali mixed stress</p> <p>..., and 38.60% and 47.52%, respectively in</p> <p>The low concentration of 0.01% H₂O₂ was very effective in the alleviation of harmful effect...</p>	
--	--	--

PART 2:

	Reviewer's comment	Author's comment <i>(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)</i>
Are there ethical issues in this manuscript?	<i>(If yes, Kindly please write down the ethical issues here in details)</i>	

Reviewer Details:

Name:	Leonardo Ornella
Department, University & Country	Spain