

Review Form 1.6

Journal Name:	Asian Plant Research Journal
Manuscript Number:	Ms_APRJ_83999
Title of the Manuscript:	IN VITRO ASSESSMENT OF PSEUDOMONAS sp. STRAIN FCBB-2 FOR EFFECTIVE PLANT GROWTH PROMOTION AND ANTIFUNGAL ACTIVITY UNDER DROUGHT STRESS
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:

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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)
<u>Compulsory</u> REVISION comments	<p>INTRODUCTION</p> <ul style="list-style-type: none">- Needs to be rewritten to fit the journal's requirements. In particular, special attention should be paid to avoid plagiarism and to attach accurate references. See the comparisons in the attached links in Part 2.- This section is the background related to the content of the research, the author(s) did not state the reason why this research was carried out, but mainly stated the possible benefits of microorganisms to deal with stress. drought.- This section should not include research findings such as “An efficient EPS-producing, drought tolerant <i>Pseudomonas aeruginosa</i> strain FCBB-2” <p>MATERIALS AND METHODS</p> <p>Isolation of <i>Pseudomonas</i> spp.</p> <ul style="list-style-type: none">- The medium used to maintain the isolates should be specified; the preparation of liquid broth under what conditions or by reference for the later tests.- In addition, it is necessary to specify what characteristics of colonies on King's B medium can be assumed to be <i>Pseudomonas</i>. <p>Screening for drought stress tolerance</p> <ul style="list-style-type: none">- It is necessary to specify with what calibration the 600 nm OD meter is used to calculate the true absorbance by bacterial cells.- In the results that only show stress at –1.03 Mpa, is the rest of stress levels needed? <p>Screening for plant growth promoting activities</p> <ul style="list-style-type: none">- The name of this subsection should be replaced with IAA production- It is necessary to specify how the pellets are handled before determining the protein content of the pellets by the Bradford method. However, this determination of protein content is not fair because the protein content in the cells of each isolate may be different. If possible, evaluation of IAA levels should be considered based on total IAA content (g) (as in the assessment of HCN and mycelial dried weight in section of antifungal activity) or g per one cell or per ml of broth. However, an assessment of the total IAA content is most possible because the data are already available and there is no need to repeat the experiment. <p>Siderophore production</p> <ul style="list-style-type: none">- There are only results on liquid medium while test results on agar are not available, the corresponding content should be omitted. <p>Antifungal activity</p> <ul style="list-style-type: none">- Evaluation by streak method on agar plate is not specified under stress or non-stress condition. In addition, there was no discussion for the design of this experiment with the assay evaluating antifungal activity in broth. Therefore, the authors need to add the rationale and discussions surrounding the relationship between the two experiments in this section or delete the agar experiment along with the results and the existing simple discussions. .- Note: the names of the two methods are not consistent with the names of the two methods in the corresponding results. <p>Production of lytic enzymes</p> <ul style="list-style-type: none">- Need to add reference or component or name of the environment used to test cellulase activity. However, in the results section, there is no corresponding result. <p>Production of HCN and Siderophores under stress conditions</p> <ul style="list-style-type: none">- Consideration should be given to bundling this with the siderophore production and production of HCN sections that were previously separate. <p>Production of Exopolysaccharides</p>	<p>Agreed with reviewer comments and all the points were addressed and marked with yellow background in the main manuscript.</p> <p>Agreed with reviewer comments and all the points were addressed and marked with yellow background in the main manuscript.</p> <p>Agreed with reviewer comments and addressed</p> <p>Reviewer comments addressed, The rest of the stress levels were needed in order to check the tolerance of bacteria at different concentrations.</p> <p>Subsection added Agreed with reviewer and estimation of protein by Bradford method was completely deleted, and evaluation IAA is only considered.</p> <p>In antifungal activity, two methods spread plate and plate confrontational culture method were used under non-stress conditions and the third method broth method was used under stress conditions. The relevant discussion was in the discussion section for using the broth method.</p> <p>Appropriate reference and results section was added</p> <p>Agreed, and changed accordingly.</p> <p>Agreed and information added.</p>

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	<ul style="list-style-type: none">- Similar to the IAA production test, evaluation in mg ml^{-1} protein is not appropriate. Given the data that have been obtained, it should be considered that a reevaluation based on mg of EPS per ml of or whole of broth is possible without the need for a repeated experiment. <p>Besides,</p> <ul style="list-style-type: none">- It is necessary to add a part of content (very briefly) stating the methods of identifying the selected strains by morphological and biochemical tests.- In the results, there is ammonia production, so it is necessary to add content about this evaluating method. <p>RESULTS</p> <p>Isolation and drought stress tolerance</p> <ul style="list-style-type: none">- Remove the phrase "Bacterial viability was assessed spectrophotometrically at 600 nm. X-axis = <i>Pseudomonas</i> spp. strains used in the present study; Y-axis = optical density values of bacterial growth." from the figure 1. <p>Production of siderophore and HCN under stress and EPS production</p> <ul style="list-style-type: none">- This section should also be included in the subsection "Screening for PGP traits" to match the previously comments (on "MATERIALS AND METHODS") and match the presentation of other PGP activities (production of HCN, IAA, ammonia and siderophore) in the section "RESULTS". <p>Besides,</p> <ul style="list-style-type: none">- It is necessary to add the proof results in evaluating the hydrolytic enzyme activities. <p>DISCUSSION</p> <ul style="list-style-type: none">- A discussion for ammonia production results should not be overshadowed.- It is necessary to review the meaning of the phrase "Since strain FCCB-2 found as <i>P. aeruginosa</i> which is a human pathogen and does not have any agricultural importance," because not always strains of <i>P. aeruginosa</i> cause disease in humans and have been reported by many authors and some plant growth promoting activities have also been evaluated in plants as shown in the following links: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3768429/ https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0139881 https://www.sciencedirect.com/science/article/pii/S266651742100064X <p>CONCLUSION</p> <ul style="list-style-type: none">- Need to be rewritten to closely match the obtained results. The first thing to note is that conclusions need to be based on these results.- Discussion ideas such as "In recent years, considerable attention has been paid towards plant growth promoting rhizobacteria, outstanding fluorescent pseudomonads, as they are ubiquitous soil microorganisms and aggressive root colonizers. They are also considered as cost-effective and viable alternatives to chemical pesticides for biological control of plant diseases." should not be in the conclusion.- Similar to the discussion, it is necessary to review the meaning of the phrase "and does not have any agricultural importance"- It is necessary to review the meaning of the phrase "But the experimental procedures and findings used here can be applied to characterize other beneficial microorganisms for sustainable agriculture." because the purpose and content of this research is not to assess the appropriateness of the methods.	<p>Agreed and followed.</p> <p>Agreed and followed.</p> <p>Agreed and suggestions followed.</p>
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Minor REVISION comments	REFERENCES <ul style="list-style-type: none">- It is necessary to unify the presentation and comply with the regulations on middle names, first and last names of authors when quoting and listing. For example San Francisco, Naveen Kumar, Praveen Kumar- One inconsistent reference in the text and the list of references is Martinez-Hidalgo or Martínez-Hidalgo.- One references that do not need to be added abc characters after the year of publication is Garbeva et al. (2004b)- References cited but not listed include: Krageland et al., 1997; Glick, 1995a; Glick et al., 1997.- References listed but not cited in the text include: references numbered 8, 26, 28, and 36.	
Optional/General comments	<p>This manuscript contains clear experimental results based on appropriate methods. However, the arrangement of the sub-contents is still messy and needs to be corrected according to the suggestions above. If accepted for publication, the information contained in this manuscript will further contribute to the potential application of <i>Pseudomonas</i> in general and in particular to <i>P. aeruginosa</i>, which is often considered a human pathogen.</p>	

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?	<i>(If yes, Kindly please write down the ethical issues here in details)</i>	