

Review Form 3

Journal Name:	<a href="#">Journal of Experimental Agriculture International</a>
Manuscript Number:	Ms_JEAI_130470
Title of the Manuscript:	Evaluation of bacterial endophytes of tomato plant for bio-control and growth promoting potential
Type of the Article	

PART 1: Comments

	Reviewer’s comment	Author’s Feedback <i>(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i>
<b>Please write a few sentences regarding the importance of this manuscript for the scientific community. A minimum of 3-4 sentences may be required for this part.</b>	The kind of work described in the manuscript features some routine experimental tests for the screening of endophytes for their biostimulant and/or biocontrol properties. The choice of performed tests is limited, and they only have value for initial screening purposes in the development of microbial biostimulant formulations.	Thanks for the comments
<b>Is the title of the article suitable? (If not please suggest an alternative title)</b>	Yes, provided that further tests are done so that the expectations given by the title are fulfilled. I also suggest to slightly improve it with:  “Evaluation of 24 bacterial endophytes isolated from tomato plants in India for their bio-control and plant-growth promoting potential”	Thanks for the comments noted.

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<p><b>Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here.</b></p>	<p>The abstract is accurate of the contents, but it might be shortened by omitting most of the names (isolation codes and locations) which can be found in the manuscript and are not necessary for the presentation.</p>	<p>Thanks for the comments</p>
<p><b>Is the manuscript scientifically, correct? Please write here.</b></p>	<p>I thank the authors for their manuscript. I have some comments that I believe could improve the work:</p> <ol style="list-style-type: none"> <li>1) The authors describe the use of the Salkowski colorimetric technique to measure IAA production. It is a standard method for this kind of investigation due to its practicality. However, this test can give false positives as it can also detect other indoles besides IAA. To get a truly accurate measure of IAA production it is recommended to use high-performance liquid chromatography analysis. However, this could sometimes be harder to do due to costs and technical availability. While sometimes the Salkowski colorimetric technique might be considered “good enough” for an estimation of the traits of the endophyte, I recommend the authors to specify this limitation and whether HPLC wasn’t available for the study. References:  - <a href="https://doi.org/10.1128%2Faem.61.2.793-796.1995">https://doi.org/10.1128%2Faem.61.2.793-796.1995</a>  - <a href="https://doi.org/10.1046%2Fj.1432-1327.1999.00033.x">https://doi.org/10.1046%2Fj.1432-1327.1999.00033.x</a></li> <li>2) “All the 24 bacterial endophytes were characterized based on the different morphological characteristics. “   Please add the descriptions if available.</li> <li>3) Please add relevant photos besides plant pots if available, particularly for Petri-dish plates to show the effects in tests.</li> <li>4) “Out of 24 isolates tested, 18 isolates were gram positive and 6 were gram negative. This indicated that majority of the bacteria observed in this study belong to gram positive <i>bacilli</i>.”   This is inaccurate because not only species belonging to the phylum Bacillota are Gram-positive, for example those within Actinomycetota are as well, and there are reported actinomycetes that can be endophytes of tomato plants: <a href="http://dx.doi.org/10.1007/s11274-006-9172-y">http://dx.doi.org/10.1007/s11274-006-9172-y</a>  It is true that members of the phylum Bacillota are often present in tomatoes and compose relevant parts of their microbiota. But Gram staining is not sufficient to determinate a phylum. Furthermore, it should not require mention that not only <i>Bacillus</i> is a member of Bacillota, as there are other bacteria as well with PGP properties within this phylum. While it is definitely possible that some members of this genus have been isolated by the authors, only genetic sequencing can give reliable taxonomy of the isolates. Further references:  - <a href="https://www.mdpi.com/2076-2607/12/6/1251">https://www.mdpi.com/2076-2607/12/6/1251</a>  - <a href="https://academic.oup.com/femsle/article/351/2/187/429402?login=true">https://academic.oup.com/femsle/article/351/2/187/429402?login=true</a>  - <a href="https://apsjournals.apsnet.org/doi/full/10.1094/PBIOMES-06-18-0029-R">https://apsjournals.apsnet.org/doi/full/10.1094/PBIOMES-06-18-0029-R</a></li> <li>5) The work only explores IAA and siderophore production. Other plant-growth promoting traits such as nitrogen fixation or phosphate solubilization could be explored with quick and simple tests.</li> <li>6) How many replicates in the performed IAA and siderophore tests?</li> <li>7) Other biochemical assays besides nitrogen content could be performed on the inoculated tomato plants after their growth.</li> <li>8) Please provide the number of seedlings tested in the table.</li> <li>9) The manuscript mentions that the nitrogen content was measured, however, there is no</li> </ol>	<p>Ok done and revised</p>

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	<p>mention in the materials&amp;methods section about how this test was performed.</p> <p>10) Please also add some graphs to better convey the results shown in the tables.</p> <p>11) “The evaluation of bacterial endophytes from tomato plants for bio-control and growth promoting potential reveals their significant role in sustainable agriculture. [...]Furthermore, their bio-control properties, such as the production of antimicrobial compounds and competition with pathogens, make them effective agents in reducing plant diseases.”</p> <p>The conclusions draw a picture that is not what such studies actually show. The work is a preliminary screening of bacterial endophytes for their potential traits for plant-growth promotion and protection, in controlled conditions in laboratory settings with plants in pots. The most promising strains tested with such strains are later applied in large greenhouse and open field inoculations to verify if the strains survive the transfer, can outcompete native soil microorganisms, and successfully colonize plant roots to promote growth. This is a kind of work that is not explored nor is the goal of this study, therefore the conclusions should rather limit to what is actually assessed. Finally, antagonistic tests against one agent cannot be generalized towards all pathogens. The screened endophytes could have been tested against many other pathogens and selected strains with quick and simple tests. There are many examples in literature to use as reference, for example:</p> <p>- <a href="https://bmcbgenomics.biomedcentral.com/articles/10.1186/s12864-020-07346-8">https://bmcbgenomics.biomedcentral.com/articles/10.1186/s12864-020-07346-8</a></p> <p>- <a href="https://bioresearch.ro/2024-2/113-120-AUOFB.31.2.2024-BENAISSA.A-Screening.of.antagoinistic.effect.pdf">https://bioresearch.ro/2024-2/113-120-AUOFB.31.2.2024-BENAISSA.A-Screening.of.antagoinistic.effect.pdf</a></p>	
<b>Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.</b>	<p>In some cases, the authors use specific and limited references to general statements. For example:</p> <p>“The existence of bacteria endophyte in the tissue of plants involved in producing substances hypergrowth, anchoring nitrogen, mobilizing phosphate, and inducing plant resistance to pathogens disorders. (Baccari C, <i>et al.</i>, 2018).”</p> <p>The provided reference in this case mentions a test of endophytes against the Pierce’s disease, which cannot be generalized to all pathogens, nor to PGP activities such as nitrogen fixation or phosphate solubilization. Therefore, I recommend to add references to broader papers, even full systematic reviews that explore what is mentioned, while moving the more specific references to specific considerations in the manuscript. For example:</p> <p>- <a href="https://www.sciencedirect.com/science/article/pii/S2667064X23002087">https://www.sciencedirect.com/science/article/pii/S2667064X23002087</a></p> <p>- <a href="https://www.sciencedirect.com/science/article/pii/S2667064X23000118">https://www.sciencedirect.com/science/article/pii/S2667064X23000118</a></p> <p>- <a href="https://www.sciencedirect.com/science/article/pii/S2666154324002060">https://www.sciencedirect.com/science/article/pii/S2666154324002060</a></p> <p>-</p>	Ok noted and revised
<b>Is the language/English quality of the article suitable for scholarly communications?</b>	There are several grammar misspellings, I suggest to verify and check the accuracy of the text.	Ok
<b>Optional/General</b> comments	<b>The manuscript as it is requires major revisions. This study needs to be complemented with further tests to improve relevance, depth, and accuracy.</b>	Done

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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>	