



SDI Review Form 1.6

Journal Name:	British Microbiology Research Journal
Manuscript Number:	Ms_BMRJ_27247
Title of the Manuscript:	In-Vitro Evaluation of Antagonists and Fungicides in Controlling Citrus Gummosis Caused by Phytophthora, Phytopythium and Pythium species in Tunisia
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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(<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)
<u>Compulsory</u> REVISION comments	The article is sometimes difficult to go through. It requires editing to eliminate several grammatical errors, and to conform to correct scientific language. INTRODUCTION: The introduction is quite poor. The structure may need some adjustments and to focus on the importance of biological control and current management strategies for soil-borne pathogens, like citrus gummosis. For example the reference [5] to biological control of maize diseases makes no sense within the proposed aim of the article. The aim of the article could be revised. Instead of "study the efficiency of some antagonistic bioagents and fungicides ..." could be "study the efficiency of some local (or native) antagonistic bioagents and some alternative fungicides ...". However, you include the copper-based fungicides in M&M since are controls for your research. MATERIAL AND METHODS: Table 1. Instead of "Isolates" use "Reference code" and instead of "organ of isolation" you can use "source", since for example soil is not an organ. 2.2.1. "Effect of fungal antagonist metabolic ..." delete metabolic, because you are also looking at hyper-parasitism, and this could be not only due to	



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	metabolic processes. Describe better how you evaluate inhibition and hyper-parasitism. Respect to parasitism, in Results you mentioned some observations but are not clear for example: which isolate expressed better the parasitism? The media used in dual culture method is not mentioned. Did you use PDA? PLEASE add this information. Section 2.2.3. Please describe better how did you prepare the bacterial suspension used and which concentration was used in the experiment. Also describe better how did you inoculate the pates with the bacterial suspension (strip?, drop?) In sections 2.2.1, 2.2.2. ,2.2.3 and 2.3 you mentioned that the experiment was repeated twice. Then the results of the two experiments were analyzed together? How did you consider the error due to “experiment”, you used a mixed model, a factorial model? Or did you analyzed each experiment independently and then compared bothe results and since no variation was observed data was combined and analyzed together? PLEASE clarify this point. Section 2.3. Is better to say “Five fungicides were evaluated for its efficiency against (Table 2)” 2.4. Is better to said “Data analysis” instead of “Data measured”, and integrate sections 2.4 and 2.5. Instead of “all obtained data ...” you could said: “Radial growth of the pathogens were used for calculating percent growth inhibition according to	The evaluation of inhibition was the same for all assays; this is why I put in ‘2.4. Data measured ‘how to evaluate the inhibition. We have mentioned how we prepare the bacterial suspension used in Section. 2.2.
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	the formula : $PGI = \frac{100(dc-dt)}{dc}$, where $PGI = \dots$” Then is not clear wich data you used for the ANOVA. PGI? Other data? PLEASE clarify. 3.1.1. Describe better the results of hyper-parasitism. You mention some effects (attachment of conidia, lysis of hyphae) but you do not mention which isolates expressed each activity. Trichoderma species expressed the same activity as Penicillium species? Figures 2, 5 and 7: define max y-axis in 100%; clarify what the deviation in the bars are (STD error, STD deviation?) 3.2. Table 3: clarify what the small letters by the numbers are and what the $\pm$. Also is not clear if you compare results within one line or one column. It would be nice to have a summary table of the ANOVA (source of variation, degree of freedom, p values). Also the table has information that could be summarized in one sentence: All cooper-based fungicides showed 100% inhibition for the seven pathogenic oomycets evaluated. By this way, you can reduce the table and made it easier to read. Also Fig. 8 is illustrative, but the quantitative results are expressed in table 3, so you should add this reference to the second paragraph of section 3.2. When describing the results of the cluster analysis in Fig 9., mention the Euclidean distance used to identify different clusters. Fig 10. The clusters you describe in the text are not what came up from the dendrogram. Which distance	Fig 8 are already mentioned in the second paragraph of section 3.2
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	you used to obtain the two groups? If you define 2 groups then one groups <i>P. mercuriale</i>, <i>P. aphanidermatum</i> and <i>P. dissotocum</i>, and the other one the other 4 pathogens. Also is not clear with data you used in the analysis, you combined the reduction due to fungicides and biological agents? Clarify. Also it would be nice to have the p-values in the dendrogram. DISCUSSION AND CONCLUSION The discussion looks like a revision of successful biological control of <i>Trichoderma</i> and <i>Penicillium</i>. In the discussion you may explore more the mechanisms undergoing the success of those microorganisms as BCA. You can also explore failures in control with those BCA. Furthermore you can also try to explore probably interaction BCA – copper fungicides, since you mention that both can be used for citrus gummosis management.	
<u>Minor</u> REVISION comments		
<u>Optional/General</u> comments	Despite the topic is not original, the presented results are of interest for Tunisian citrus industry since native isolates of both pathogens and antagonists are evaluated. In order to succeed in biological control, the first step is to have a good evaluation of the interaction “local pathogen strain x biological control agent (BCA)”, and this first step is more important if local BCA are used. Then later in vivo evaluations can be performed.	