

The topic of this paper is very interesting and is a priority concern for downstream applications such as beneficial microorganisms application. The methodology is well-designed, and the presented results are interesting. Nonetheless, some recommendations to improve the submitted work are described hereunder.

General comments:

- What I retained from the introduction is that we know nothing. It underlines the interest of the study, but the topic could be better introduced as the literature is growing in this area. The problem is underlined, but its context could be developed.
- What part of the seed is considered for the microbial study? Spermosphere, spermoplane, or endosphere? This should be described in the introduction (the different niches existing in seeds)
- It is not clear what part of the seedling is used for the microbial study (i.e., leafy part, seed, or root). Crushing the entire seedling, including the remaining inoculated seed, may introduce a bias. This should be better described, and the potential bias of sampled tissue discussed.
- Texts in figures are sometimes too small to be read.
- Titles and subtitles could be shortened and standardized. For example, line 371 explains a result directly.
- Passive form should be preferred instead of “we”
- The discussion part tends to repeat results which might be better compared to the literature instead.
- In the discussion, you often write your results, and at the end of the sentence, you add references. What does it mean? That they obtain the same results as yours? See comments line by line for example.
- Overall, the bibliographical support for the introduction and the discussion could be improved.

Comments line by line:

- 33-35: It should be good to rewrite this sentence.
- 87-91 and 92-95: it is a little redundant.
- 100: strain of what? Bacteria, fungi, both?
- 105: so, it was spermoplane that was harvested.
- 136: how the SynCom was composed? Were the bacterial strains added in equal proportion? The final concentration is 1×10^7 cfu/ml individually or for all the syncom? Rare taxa stay rare in the Syncom, and the inverse too?
- 133: what were the criteria for selection? Abundant or rare species? (Ok, it is explained after)
- 138: Why this concentration? Is it what we naturally find on the seed surface?
- 157: if you crush the seed, you also will have endospheric microorganisms. Could you distinguish the different strains of SynCom in plate? Was it recorded?
- 157: did you remove the seed before crushing? If not, how to know that your inoculum was transmitted to the seedlings (leaf and/or root) or if it was the remaining inoculum on your seed?
- Fig 1a: It is fine, but the meaning of the triangle is a little bit difficult to understand. Perhaps directly put triangles or circles in the legend? Only watching the legend will help to see which

taxa belong to the core microbiota. But you will have a grey triangle and a grey circle for “other taxa” in the legend.

- Fig 1: Why do you not select taxa belonging to the core microbiota for low relative abundant taxa (<1%)? Are Pseudomonas preferably selected instead of other bacteria, and why?
- 262: if you have 2 log CFU/seedling, does the disinfection fail, or do you have bacteria inside the seed endosphere?
- 272-274: Avoid “we” as much as possible. Prefer the use of passive form.
- 280: How do you explain these results for the control while your seeds were disinfected?
- 335: Too much “we”. Perhaps it should be in material and methods.
- Fig5: You will see with the editing process, but figures are numerous inside the same caption, making the text size too small.
- 371: Is it a title? It must be changed.
- 443: “major environmental changes” → they are not so major compared to real germination conditions (soil,...). For example, if your experiments were conducted in a real environment, would your microorganisms be found in the seedlings?
- 420: Is it your results or those of the references cited?
- 417-420: Don’t forget that you disinfect your seed. Give more nuance in your affirmation.
- 422-427: Too many results and no discussion.
- 427-430: Quite poor as explication/discussion.
- 431-436: Too many results and no (or not enough) discussion.
- 440-459: ibidem
- 476: microbiome or microbiota? Make the distinction.
- 476-477: Is it your results or those of the references cited?
- 486-488: what does it mean “different”?
- 486-490: do you have references to straighten your hypothesis?
- 496: Is it your results or those of the references cited?