

Review of: "Does extracellular DNA mask microbial responses to a pulse disturbance?"

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Potential competing interests: The author(s) declared that no potential competing interests exist.

Kittredge et al. tested soil bacterial response to rewetting and whether removal of extracellular DNA changes result output in comparison with non-removal, and thus potentially influencing or changing microbial response interpretation. They found that exDNA removal allowed a more precise quantification of bacterial rewetting response, but inclusion rarely changed result direction or general conclusions. The amount of exDNA did not explain the degree of influence it had on results, making predicting exDNA influence difficult.

Overall, I found the manuscript to be well written and concise, and the hypothesis tested is valuable knowledge for future experiments exploring drying-rewetting effects. The objective and hypotheses are clearly outlined, and the experimental structure and analyses enable them to appropriately address the hypotheses. The inclusion of multiple cropping systems also expands extrapolation capabilities to general trends in varying crop soil systems. There are however, some changes required to improve clarity and provide more context.

- It would be good to mention the 'ambient' drying-rewetting method in the introduction. There is no reference to it before the reader reaches Fig. S3 (referenced in the results). It is also confusing when the reader reaches the method and sees the reference to two drying-rewetting treatments (one being used as a control).
- I highly suggest restructuring and/or cutting down the first figure. It is very busy and takes a long time to understand how the panels are organized and why and then understanding the legend upon that. For example, in the legend it shows the different measurement times having different point sizes, but this is not the case for the majority of the figures. Then the x-axis labels for the figures 'a', 'b', 'd', and 'e' are at the bottom. I realize that this choice was probably due to figure number limitations, but it hinders quick interpretation for the reader.
- How were these water quantities and drought duration chosen? Are they reflective of the precipitation regime *in situ*?
- How many replicate soil cores per time point and per crop type? How many replicate pairs for the extracellular DNA removal analysis?
- "...while ambient rewetting had no effect on soil moisture", would this not mean that the soil is under

drought conditions if not being rewetted? Do you mean to say it kept it at a constant level?

- Did you run the statistics separately for the different fields (corn and switch grass)? If not, how did you include the field as a random variable?
- “four field replicates” this number was not mentioned in the sampling description. Is that four field replicates per field per sampling period?
- If you don’t have a reference limit, it is good practice to add citations for the R packages.