

Comment on soil-2021-35

Theresa McHugh (Referee)

Referee comment on "Microbial activity responses to water stress in agricultural soils from simple and complex crop rotations" by Jörg Schneckner et al., SOIL Discuss.,
<https://doi.org/10.5194/soil-2021-35-RC2>, 2021

General comments:

This is a well-designed and well-executed experiment to separately examine the effects of drying and flooding on microbial activity in soils from across a moisture gradient and under simple or complex crop rotation strategies. The aims and approach are satisfactorily presented, and the analyses and interpretations are appropriate. I have a few suggestions to improve the paper.

Specific comments:

- Since the abstract includes microbial biomass among the key parameters analyzed, I would like to see it addressed explicitly in the results section. As it stands, this variable is lumped with "other parameters" in section 3.4. Though included in Figures 4 and 5, the interpretation is challenging for the reader.
- In the experimental setup, section 2.2, I found it hard to keep track of "sets" to determine the degree of replication within a sampling site and treatment. Please add clarifying details.

Technical corrections:

- Line 55: Remove "of" before nitrous oxide.
- Line 72: Change "crops yields" to "crop yields."
- Line 77: Change "drought and flooding" to "drought or flooding."
- Line 80: Be consistent with line 94, where simple means two crops in rotation, not one

or two.

- Line 83: Change "drought or flooding" to "drought and/or flooding."
- Line 99: Adjust format on degrees C.
- Line 121: Change "was determined" to "were determined."
- Line 131: Here and elsewhere, be consistent in spacing between numbers and units.
- Line 149: Change "was measured" to "were measured."
- Line 151: Remove authors names from parenthetical citation.
- Line 168: Here and elsewhere, use subscripted numbers in chemical formulas.
- Line 251: Make use of your abbreviation, WHC.
- Line 277: Use a semicolon to prevent a run-on sentence.