

Interactive comment on “Effects of extreme drought on agriculture soil and sustainability of different drought soil” by S. M. Geng et al.

Anonymous Referee #2

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This manuscript presents results of microbial biomass from agricultural soils subjected to different drought treatments. The data clearly shows a maximum value of microbial biomass at intermediate levels of gravimetric soil moisture, and a poor capacity of recovery after rewetting. I found these results interesting and a nice addition to the literature on this subject. However, I also found the manuscript poorly written and unsuitable for publication in its present form.

First, the quality of the language needs a major improvement. This manuscript needs to be edited by a native English speaker or by any of the commercial companies that offer this service.

Second, the manuscript ignores a large body of literature on this subject in which the

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conceptual basis for the observed patterns are lay out. I recommend the authors to read and cite the work of Skopp et al. (1990), Manzoni et al. (2011), Davidson et al. (2012), Moyano et al. (2012, 2013).

Third, the authors must give additional details about the experimental design and the level of replication in their experiment.

References

- E. A. Davidson, S. Samanta, S. S. Caramori, and K. Savage. The dual arrhenius and michaelis-menten kinetics model for decomposition of soil organic matter at hourly to seasonal time scales. *Global Change Biology*, 18(1):371–384, 2012.
- S. Manzoni, J. P. Schimel, and A. Porporato. Responses of soil microbial communities to water stress: results from a meta-analysis. *Ecology*, 93(4):930–938, 2011. doi: 10.1890/11-0026.1.
- F. E. Moyano, S. Manzoni, and C. Chenu. Responses of soil heterotrophic respiration to moisture availability: An exploration of processes and models. *Soil Biology and Biochemistry*, 59(0):72 – 85, 2013.
- F. E. Moyano, N. Vasilyeva, L. Bouckaert, F. Cook, J. Craine, J. Curiel Yuste, A. Don, D. Epron, P. Formanek, A. Franzluebbers, U. Ilstedt, T. Kätterer, V. Orchard, M. Reichstein, A. Rey, L. Ruamps, J. A. Subke, I. K. Thomsen, and C. Chenu. The moisture response of soil heterotrophic respiration: interaction with soil properties. *Biogeosciences*, 9(3):1173–1182, 2012. BG.
- J. Skopp, M. D. Jawson, and J. W. Doran. Steady-state aerobic microbial activity as a function of soil water content. *Soil Sci. Soc. Am. J.*, 54(6):1619–1625, 1990.

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