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Peer-reviewed journal articles

2026

1. Kovacs, N., Colinet, G., Longdoz, B., Leifeld, J., Lettens, S., Raman, M., Vancampenhout, K., Verstraeten, G., Meersmans, J., 2026. Effects of natural rewetting on soil respiration and temperature sensitivity (Q10) under contrasting water table regimes: A case study in a Belgian floodplain. *Agricultural and Forest Meteorology* 388: 111321.
2. Wüst-Galley, C., Leifeld, J., 2026. Paddy rice cultivation on drained peatlands as a greenhouse gas mitigation option — A systematic nano-review of global data. *Agriculture, Ecosystems & Environment* 411: 110596.
3. Seidel, F., Álvaro-Fuentes, J., Bolinder, M.A., Di Bene, C., Diacono, M., Diaz-Pines, E., Götzinger, S., Käterer, T., Keel, S.G., Keiblinger, K.M., Leifeld, J., Lesschen, J.P., Panagea, I., Rasse, D., Rosinger, C., Ruyschaert, G., Schneider, F., Seitz, D., Spiegel, H., Suhadolc, M., Vanino, S., Don, A., 2026. Feasible carbon sequestration potential in European agricultural mineral soils through improved management. *European Journal of Soil Science* 77(3): e70357.
4. Jarosch, K.A., Bütikofer, N., Heller, O., Hirte, J., Bragazza, L., Bucheli, T.D., Hagemann, N., Hilber, I., Holzkämper, A., Ghiasi, S., Keel, S.G., Keller, T., Koestel, J., Leifeld, J., Liebisch, F., Mayer, J., Anjum, M.M., Metzger, K., Romero, F., Romero-Ruiz, A., Schwilch, G., Simmler, M., van der Heijden, M., Walder, F., Zimmermann, M., Merbold, L., 2026. Opportunities and challenges for sustainable agricultural soil management in Switzerland. *European Journal of Soil Science* 77: e70355.
5. Minich, L.I., Beem-Miller, J., Mittelbach, B.V.A., Geissbühler, D., Udke, A., Wasner, D., Duborgel, M.M., McMackin, C., Brunmayr, A.S., Wacker, L., Gautschi, P., Haghipour, N., Egli, M., Leifeld, J., Eglinton, T.I., Hagedorn, F., 2026. A radiocarbon-based framework to assess soil organic carbon persistence and vulnerability across land-use types. *Global Change Biology* 32, no. 3: e70799.
6. Robinson, D.A., Fendrich, A., Thomas, A., Reinsch, S., Leifeld, J., Moore, T., Seward, J., Borrelli, P., Balabio, C., Panagos, P., 2026. Soil porosity prediction across Europe with a focus on soil particle density determination. *International Soil and Water Conservation Research*, 100614
7. Walz, I.L., Dittmann, M., Leifeld, J., 2026. Recovery and composition of biochar after feeding to cattle. *Biochar* 8, article 13.
8. Minich, L.I., Geissbühler, D., Tobler, S., Udke, A., Brunmayr, A.S., Moreno Duborgel, M., McMackin, C., Wacker, L., Gautschi, P., Haghipour, N., Egli, M., Kahmen, A., Leifeld, J., Eglinton, T.I., Hagedorn, F., 2026. Conceptualising carbon cycling pathways across different land-use types based on rates and ages of soil-respired CO₂. *Biogeosciences* 23: 811-829.
9. Widmer, A., Tamagni, L., Wüst-Galley, C., Paul, S., Jocher, M., Volpe, V., Doetterl, S., Keller, T., Leifeld, J., 2026. Mitigating greenhouse gas emissions of a managed organic soil by paddy rice cultivation in the cool temperate zone. *Agriculture, Ecosystems & Environment* 399: 110146.

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10. Temmink, R.J.M., Lång, K., Vroom, R.J.E., Leifeld, J., Fritz, C., Zeug, W., Thrän, D., Kleinspehn, C., Gaudig, G., Neubert, J., Kreyling, J., Rhymes, J.M., Evans, C.D., Kotowski, W., Nordt, A., Tanneberger, F., 2026. Agriculture on wet peatlands: the sustainability potential of paludiculture. *Agricultural Systems* 231: 104561.
11. Schmidt, H.-P., Abiven, S., Cowie, A., Glaser, B., Joseph, S., Kammann, C., Lehmann, J., Leifeld, J., Pan, G., Rasse, D., Rumpel, C., Woolf, D., Zimmerman, A.R., Hagemann, N., 2025. Biochar permanence—a policy commentary. *GCB Bioenergy* 17: e70092.

12. Reinsch, S., Lebron, I., de Jonge, L.W., Weber, P.L., Norgaard, T., Arthur, E., Gomes, L., Pesch, C., Konstantinos, K., Zalidis, G., Epelde, L., Romic, M., Romic, D., Zovko, M., Reljic, M., Heikkinen, J., Feeney, C., Bentley, L., Levy, P., Vanguelova, E., Panagos, P., Schneider, F., Ahrens, B., Leifeld, J., Hugelius, G., Emmett, B.A., Cosby, B.J., Brentegani, M., Tandy, S., Thomas, A., van Soest, M.A.J., Robinson, D.A., 2025. The fraction of carbon in soil organic matter as a national-scale soil process indicator. *Global Change Biology* 31: e70572.
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14. Desmet, F., Sieber, P., Ceschia, E., Leifeld, J., 2025. Accounting for albedo changes in carbon farming schemes. *Science of the Total Environment* 1002: 180631.
15. Leifeld, J., Walz, I., 2025. Pyroligneous acid effects on crop yield and soil organic matter in agriculture—a review. *Agronomy* 15: 927.
16. Wüst-Galley, C., Leifeld, J., 2025 The distribution and (future) use of Switzerland's organic soils. *Mires and Peat* 32, article 24.
17. Keel, S.G., Budai, A., Elsgaard, L., Hardy, B., Levvasseur, F., Zhi, L., Mondini, C., Plaza, C., Leifeld, J., 2025. Efficiency of plant biomass processing pathways for long-term soil carbon storage. *European Journal of Soil Science* 76: e70074.
18. Leifeld, J., Paul, S.M., Gross-Schmolders, M., Wang, Y., Wüst-Galley, C., 2025. Crediting peatland re-wetting for carbon farming: some considerations amidst optimism. *Mitigation and Adaptation Strategies for Global Change* 30: 13.

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19. Rainford, S.-K., Leifeld, J., Siegl, S., Hagenbucher, S., Riedel, J., Gross, T., Niggli, U., Keel, S.G., 2024. No relationship between outputs of simple humus balance calculators (VDLUFA and STAND) and soil organic carbon trends. *European Journal of Soil Science* 75: e70007.
20. Paul, S.M., Ammann, C., Wang, Y., Alewell, C., Leifeld, J., 2024. Can mineral soil coverage be a suitable option to mitigate greenhouse gas emissions from agriculturally managed peatlands? *Agriculture, Ecosystems & Environment* 375: 109197.
21. Sriskandarajah, N., Wüst-Galley, C., Heller, S., Leifeld, J., Määtä, T., Ouyang, Z., Runkle, B.R.K., Schiedung, M., Schmidt, M.W.I., Tumber-Dávila, S.J., Malhotra, A., 2024. Belowground plant allocation regulates rice methane emissions from degraded peat soils. *Scientific Reports* 14: 14593.
22. Liang, Z., Hermansen, C., Weber, P.L., Pesch, C., Greve, M.H., de Jonge, L.W., Mäenpää, M., Leifeld, J., Elsgaard, L., 2024. Underestimation of carbon dioxide emissions from organic-rich agricultural soils. *Communications Earth & Environment* 5: 286.
23. Rathnayake, D., Schmidt, H.-P., Leifeld, J., Bürge, D., Bucheli, T.D., Hagemann, N., 2024. Quantifying soil organic carbon after biochar application: How to avoid (the risk of) of counting CDR twice? *Frontiers in Climate* 6, doi: 10.3389/fclim.2024.1343516.
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25. Don, A., Seidel, F., Leifeld, J., Kätterer, T., Martin, M., Pellerin, S., Emde, D., Seitz, D., Chenu, C., 2024. Reply letter to Munoz et al. 'on the importance of time in carbon sequestration in soils and climate change mitigation'—Keep carbon sequestration terminologies consistent and functional'. *Global Change Biology* 30: e17230.
26. Don, A., Seidel, F., Leifeld, J., Kätterer, T., Martin, M., Pellerin, S., Emde, D., Seitz, D., Chenu, C., 2024. Carbon sequestration in soils and climate change mitigation – definitions and pitfalls. *Global Change Biology* 30:e16983.

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28. Keel, S.G., Bretscher, D., Leifeld, J., von Ow, A., Wüst-Galley, C., 2023. Soil carbon sequestration potential bounded by population growth, land availability, food production, and climate change. *Carbon Management* 14: 2244456.
29. Rodrigues, L., Budai, A., Elsgaard, L., Hardy, B., Keel, S.G., Mondini, C., Plaza, C., Leifeld, J., 2023. The importance of biochar quality and pyrolysis yield for soil carbon sequestration in practice. *European Journal of Soil Science* 74: e13396.
30. Wüst-Galley, C., Heller, S., Ammann, C., Paul, S., Doetterl, S., Leifeld, J., 2023. Methane and nitrous oxide emissions from rice grown on organic soils in the temperate zone. *Agriculture, Ecosystems and Environment* 356: 108641.
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32. Rathnayake, D., Schmidt, H. P., Leifeld, J., Mayer, J., Epper, C.A., Bucheli, T.D., Hagemann, N., 2023. Biochar from animal manure: a critical assessment on technical feasibility, economic viability and ecological impact. *GCB Bioenergy* 15: 1078-1104.
33. Leifeld, J., 2023. Carbon farming: Climate change mitigation via non-permanent carbon sinks. *Journal of Environmental Management* 339: 117893.

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35. Serk, H., Nilsson, M.B., Figurea, J., Krüger, J.P., Leifeld, J., Alewell, C., Schleucher, J., 2022. Organo-chemical characterization of peat reveals decomposition of specific hemicellulose structures as the main cause of organic matter loss in the acrotelm. *Environmental Science & Technology*: 17410–17419.
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41. Klein, K., Schellekens, J., Gross-Schmolders, M., von Sengbusch, P., Alewell, C., Leifeld, J., 2022. Characterizing ecosystem-driven chemical composition differences in natural and drained Finnish bogs using Pyrolysis-GC/MS. *Organic Geochemistry* 165: 104351.
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45. Gross-Schmölders, M., Klein, K., Birkholz, A., Leifeld, J., Alewell, C., 2021. Rewetting and drainage of nutrient-poor peatlands indicated by specific bacterial membrane fatty acids and a repeated sampling of stable isotopes ($\delta^{15}\text{N}$, $\delta^{13}\text{C}$). *Frontiers Environmental Science* 9: 730106.
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47. Leifeld, J., Alewell, C., Paul, S.M., 2021. Accumulation of C4-carbon from *Miscanthus* in organic-matter-rich soils. *Global Change Biology Bioenergy* 13: 1319-1328.
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