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Peer-reviewed journal articles

2022

1. Leifeld, J., Keel, S.G., 2022. Quantifying negative radiative forcing of non-permanent and permanent soil carbon sinks. *Geoderma* 423: 115971.
2. Hardy, B., Borchard, N., Leifeld, J., 2022. Identification of thermal signature and quantification of charcoal in soil using differential scanning calorimetry and benzene polycarboxylic acid (BPCA) markers. *SOIL* 8: 451-466.
3. Groß-Schmolders, M., Klein, K., Emsens, W.-J., van Diggelen, R., Aggenbach, C.J.S., Liezner, Y., Frouz, J., Leifeld, J., Alewell, C., 2022. Stable isotopes ($\delta^{13}\text{C}$, $\delta^{15}\text{N}$) and biomarkers as indicators of the hydrological regime of fens in a European east–west transect. *Science of The Total Environment* 838: 156603.
4. Guillaume, T., Makowski, D., Libohova, Z., Elfouki, S., Fontana, M., Leifeld, J., Bragazza, L., Sinaj, S., 2022. Carbon storage in agricultural topsoils and subsoils is promoted by including temporary grasslands into the crop rotation. *Geoderma* 422: 115937.
5. Wang, Y., Paul, S.M., Jocher, M., Alewell, C., Leifeld, J., 2022. Reduced nitrous oxide emissions from drained temperate agricultural peatland after coverage with mineral soil. *Frontiers in Environmental Science* 10: article 656599.
6. 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.
7. Grafmüller, J., Böhm, A., Zhuang, Y., Spahr, S., Müller, P., Otto, T., Bucheli, T., Leifeld, J., Giger, R., Tobler, M., Schmidt, H.-P., Dahmen, N., Hagemann, N., 2022. Wood ash as an additive in biomass pyrolysis: effects on biochar yield, properties and agricultural performance. *ACS Sustainable Chemistry & Engineering*, accepted.

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8. Rodrigues, L., Hardy, B., Huyghebeart, B., Fohrafellner, J., Fornara, D., Barančíková, G., Bárcena, T.G., De Boever, M., Di Bene, C., Fezienè, D., Käetterer, T., Laszlo, P., O’Sullivan, L., Seitz, D., Leifeld, J., 2021. Achievable agricultural soil carbon sequestration across Europe from country-specific estimates. *Global Change Biology* 27:6363–6380.
9. Schmidt, H.P., Kammann, C., Hagemann, N., Leifeld, J., Bucheli, T.D., Sánchez-Monedero, M.A., Cayuela, M.L., 2021. Biochar in agriculture – a systematic review of 26 meta-analyses. *Global Change Biology Bioenergy* 13: 1708-1730.
10. Gross-Schmolders, M., Klein, K., Birkholz, A., Leifeld, J., Alewell, C. 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.
11. Wang, Y., Paul, S.M., Jocher, M., Espic, C., Alewell, C., Szidat, S., Leifeld, J., 2021. Soil carbon loss from drained agricultural peatland after coverage with mineral soil. *Science of The Total Environment* 800: 149498.
12. 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.
13. Huang, Y., Ciais, P., Luo, Y., Zhu, D., Wang, Y., Qiu, C., Goll, D.S., Guenet, B., Makowski, D., De Graaf, I., Leifeld, J., Kwon, M.J., Hu, J., Qu, L., 2021. Tradeoff of CO₂ and CH₄ emissions from global peatlands under water-table drawdown. *Nature Climate Change* 11: 618-622.

14. Egli, M., Wiesenberg, G., Leifeld, J., Gärtner, H., Seibert, J., Rösli, C., Wingate, V., Dollenmeier, W., Griffel, P., Suremann, J., Weber, J., Zyberaj, M., Musso, A., 2021. Formation and decay of peat bogs in the vegetable belt of Switzerland. *Swiss Journal of Geosciences* 114: 2.
15. Paul, S.M., Ammann, C., Alewell, C., Leifeld, J., 2021. Carbon budget response of an agriculturally used fen to different soil moisture conditions. *Agricultural and Forest Meteorology* 300: 108319.
16. Klein, K., Gross-Schmolders, M., Alewell, C., Leifeld, J., 2021. Heating up a cold case: Applications of analytical pyrolysis GC/MS to access molecular biomarkers in peat. *Advances in Agronomy* 165: 115-159.
17. Burgeon, V., Fouché, J., Leifeld, J., Chenu, C., Cornélis, J.-T., 2021. Organo-mineral associations largely contribute to the stabilization of century-old pyrogenic organic matter in cropland soils. *Geoderma* 388: 114841.

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19. Amelung, W., Bossio, D., de Vries, W., Kögel-Knabner, I., Lehmann, J., Amundson, R., Bol, R., Collins, C., Lal, R., Leifeld, J., Minasny, B., PanG., Paustian, K., Rumpel, C., Sanderman, J., van Groenigen, W., Mooney, S., van Wesemael, B., Wander, M., Chabbi, A., 2020. Towards a global-scale soil climate mitigation strategy. *Nature Communications* 11: 5427.
20. Humpenöder, F., Karstens, K., Lotze-Campen, H., Leifeld, J., Menichetti, L., Barthelmes, A., Popp, A., 2020. Peatland protection and restoration are key for climate change mitigation. *Environmental Research Letters* 15, 104093.
21. Gross-Schmolders, M., von Sengbusch, P., Krüger, J.P., Klein, K., Birkholz, A., Leifeld, J., Alewell, C. Switch of fungal to bacterial degradation in natural, drained and rewetted oligotrophic peatlands reflected in $\delta^{15}\text{N}$ and fatty acid composition. *SOIL* 6: 299-313.
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25. Wüst-Galley, C., Grünig, A., Leifeld, J., 2020. Land use driven historical soil carbon losses in Swiss peatlands. *Landscape Ecology* 35: 173–187.

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26. Leifeld, J., Wüst-Galley, C., Page, S., 2019. Intact and managed peatland soils as a source and sink of GHGs from 1850 to 2100. *Nature Climate Change* 9: 945–947.
27. Keel, S.G., Anken, T., Büchi, L., Chervet, A., Fliessbach, A., Fleisch, R., Huguenin-Elie, O., Mäder, P., Mayer, J., Sinaj, S., Sturny, W., Wüst-Galley, C., Zihlmann, U., Leifeld, J., 2019. Loss of soil organic carbon in Swiss long-term agricultural experiments over a wide range of management practices. *Agriculture, Ecosystems & Environment* 2019, 286: 106654.

28. Keller, T., Hüppi, R., Leifeld, J., 2019. Relationship between greenhouse gas emissions and changes in soil gas diffusivity in a field experiment with biochar and lime. *Journal of Plant Nutrition and Soil Science* 182: 667-675.
29. Ferré, M., Müller, A., Leifeld, J., Bader, C., Müller, M., Engel, S., Wichmann, S., 2019. Sustainable management of cultivated peatlands in Switzerland: insights, challenges, and opportunities. *Land Use Policy* 87: article 104019.
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