

Reference list for dataset: Particulate and mineral associated organic matter from ^{13}C and ^{15}N residue labelling studies from 2002 to 2024

Almeida, L., Souza, I., Hurtarte, L., Teixeira, P., Inagaki, T., Silva, I., Mueller, C., 2021. Forest litter constraints on the pathways controlling soil organic matter formation. *Soil Biology & Biochemistry* 163. <https://doi.org/10.1016/j.soilbio.2021.108447>

Antonio Telles Rodrigues, L., Giacomini, S.J., Dieckow, J., Cherubin, M.R., Sangiovo Ottonelli, A., Bayer, C., 2022. Carbon saturation deficit and litter quality drive the stabilization of litter-derived C in mineral-associated organic matter in long-term no-till soil. *CATENA* 219, 106590. <https://doi.org/10.1016/j.catena.2022.106590>

Buckeridge, K., Mason, K., Ostle, N., McNamara, N., Grant, H., Whitaker, J., 2022. Microbial necromass carbon and nitrogen persistence are decoupled in agricultural grassland soils. *Communications Earth & Environment* 3. <https://doi.org/10.1038/s43247-022-00439-0>

Buckeridge, K.M., 2021. *kmbuckeridge/UGrass_NecromassCNstabilization: Necromass CN stabilization (v1.0)*. <https://doi.org/10.5281/zenodo.5036539>

Canisares, L., Banet, T., Rinehart, B., McNear, D., Poffenbarger, H., 2023. Litter quality and living roots affected the formation of new mineral-associated organic carbon but did not affect total mineral-associated organic carbon in a short-term incubation. *Geoderma* 430. <https://doi.org/10.1016/j.geoderma.2022.116302>

Cheng, X., Xing, W., Liu, J., 2023. Litter chemical traits, microbial and soil stoichiometry regulate organic carbon accrual of particulate and mineral-associated organic matter. *Biology and Fertility of Soils*. <https://doi.org/10.1007/s00374-023-01746-0>

Cotrufo, M., Haddix, M., Kroeger, M., Stewart, C., 2022. The role of plant input physical-chemical properties, and microbial and soil chemical diversity on the formation of particulate and mineral-associated organic matter. *Soil Biology & Biochemistry* 168. <https://doi.org/10.1016/j.soilbio.2022.108648>

Cotrufo, M., Soong, J., Horton, A., Campbell, E., Haddix, M., Wall, D., Parton, A., 2015. Formation of soil organic matter via biochemical and physical pathways of litter mass loss. *Nature Geoscience* 8, 776–+. <https://doi.org/10.1038/NGEO2520>

Craig, M., Geyer, K., Beidler, K., Brzostek, E., Frey, S., Grandy, A., Liang, C., Phillips, R., 2022. Fast-decaying plant litter enhances soil carbon in temperate forests but not through microbial physiological traits. *Nature Communications* 13. <https://doi.org/10.1038/s41467-022-28715-9>

Craig, M.E., Brzostek, E.R., Geyer, K.M., Liang, C., Phillips, R.P., 2021. Data for “Fast-decaying plant litter enhances soil carbon in temperate forests, but not through microbial physiological traits.” <https://doi.org/10.15485/1835182>

Dai, S., He, P., Guo, X., Ge, T., Oliver, M., Li, L., 2022. Faster carbon turnover in topsoil with straw addition is less beneficial to carbon sequestration than subsoil and mixed soil. *Soil Science Society of America Journal* 86, 1431–1443. <https://doi.org/10.1002/saj2.20412>

Duan, Y., Chen, L., Li, Y., Li, J., Zhang, C., Ma, D., Zhou, G., Zhang, J., 2023. Nitrogen input level modulates straw-derived organic carbon physical fractions accumulation by stimulating specific fungal groups during decomposition. *Soil & Tillage Research* 225. <https://doi.org/10.1016/j.still.2022.105560>

Even, R.J., Cotrufo, F., 2024. The ability of soils to aggregate, more than the state of aggregation, promotes protected soil organic matter formation. *Geoderma* 442, 116760. <https://doi.org/10.1016/j.geoderma.2023.116760>

Fang, Y., Singh, B., Cowie, A., Wang, W., Arachchi, M., Wang, H., Tavakkoli, E., 2019. Balancing nutrient stoichiometry facilitates the fate of wheat residue-carbon in physically defined soil organic matter fractions. *Geoderma* 354. <https://doi.org/10.1016/j.geoderma.2019.113883>

Ferreira, G., Oliveira, F., Soares, E., Schnecker, J., Silva, I., Grandy, A., 2021. Retaining eucalyptus harvest residues promotes different pathways for particulate and mineral-associated organic matter. *Ecosphere* 12. <https://doi.org/10.1002/ecs2.3439>

Fulton-Smith, S., Cotrufo, M., 2019. Pathways of soil organic matter formation from above and belowground inputs in a *Sorghum bicolor* bioenergy crop. *Global Change Biology Bioenergy* 11, 971–987. <https://doi.org/10.1111/gcbb.12598>

Haddix, M., Gregorich, E., Helgason, B., Janzen, H., Ellert, B., Cotrufo, M., 2020. Climate, carbon content, and soil texture control the independent formation and persistence of particulate and mineral-associated organic matter in soil. *Geoderma* 363. <https://doi.org/10.1016/j.geoderma.2019.114160>

Haddix, M.L., Paul, E.A., Cotrufo, M.F., 2016. Dual, differential isotope labeling shows the preferential movement of labile plant constituents into mineral-bonded soil organic matter. *Global Change Biology* 22, 2301–2312. <https://doi.org/10.1111/gcb.13237>

Huys, R., Poirier, V., Bourget, M., Roumet, C., Hattenschwiler, S., Fromin, N., Munson, A., Freschet, G., 2022a. Plant litter chemistry controls coarse-textured soil carbon dynamics. <https://doi.org/10.5061/dryad.m63xsj45g>

Huys, R., Poirier, V., Bourget, M.Y., Roumet, C., Hattenschwiler, S., Fromin, N., Munson, A.D., Freschet, G.T., 2022b. Plant litter chemistry controls coarse-textured soil carbon dynamics. *Journal of Ecology* 110, 2911–2928. <https://doi.org/10.1111/1365-2745.13997>

Kölbl, A., von Lutzow, M., Kögel-Knabner, I., 2006. Decomposition and distribution of N-15 labelled mustard litter (*Sinapis alba*) in physical soil fractions of a cropland with high- and low-yield field areas. *Soil Biology and Biochemistry* 38, 3292–3302. <https://doi.org/10.1016/j.soilbio.2006.04.010>

Kölbl, A., von Lutzow, M., Rumpel, C., Munch, J., Kögel-Knabner, I., 2007. Dynamics of C-13-labeled mustard litter (*Sinapis alba*) in particle-size and aggregate fractions in an agricultural cropland with high- and low-yield areas. *Journal of Plant Nutrition and Soil Science* 170, 123–133. <https://doi.org/10.1002/jpln.200625071>

Kou, X., Morien, E., Tian, Y., Zhang, X., Lu, C., Xie, H., Liang, W., Li, Q., Liang, C., 2023a. Data for: Exogenous carbon turnover within the soil food web strengthens soil carbon sequestration through microbial necromass accumulation. <https://doi.org/10.5061/dryad.mgqnk9949>

Kou, X., Morrien, E., Tian, Y., Zhang, X., Lu, C., Xie, H., Liang, W., Li, Q., Liang, C., 2023b. Exogenous carbon turnover within the soil food web strengthens soil carbon sequestration through microbial necromass accumulation. *Global Change Biology* 29, 4069–4080. <https://doi.org/10.1111/gcb.16749>

Lavallee, J., Conant, R., Paul, E., Cotrufo, M., 2018. Incorporation of shoot versus root-derived ¹³C and ¹⁵N into mineral-associated organic matter fractions: results of a soil slurry incubation with dual-labelled plant material. *Biogeochemistry* 137, 379–393. <https://doi.org/10.1007/s10533-018-0428-z>

Leichty, S., Cotrufo, M., Stewart, C., 2021. Less efficient residue-derived soil organic carbon formation under no-till irrigated corn. *Soil Science Society of America Journal* 84, 1928–1942. <https://doi.org/10.1002/saj2.20136>

Lian, T., Wang, G., Yu, Z., Li, Y., Liu, X., Jin, J., 2016. Carbon input from C-13-labelled soybean residues in particulate organic carbon fractions in a Mollisol. *Biology and Fertility of Soils* 52, 331–339. <https://doi.org/10.1007/s00374-015-1080-6>

Liang, Z., Rasmussen, J., Poeplau, C., Elsgaard, L., 2023. Priming effects decrease with the quantity of cover crop residues-Potential implications for soil carbon sequestration, *Soil Biology & Biochemistry* 184. <https://doi.org/10.1016/j.soilbio.2023.109110>

Liebmann, P., Wordell-Dietrich, P., Kalbitz, K., Mikutta, R., Kalks, F., Don, A., Woche, S., Dsilva, L., Guggenberger, G., 2020. Relevance of aboveground litter for soil organic matter formation - a soil profile perspective. *Biogeosciences* 17, 3099–3113. <https://doi.org/10.5194/bg-17-3099-2020>

Lyu, M., Homyak, P., Xie, J., Penuelas, J., Ryan, M., Xiong, X., Sardans, J., Lin, W., Wang, M., Chen, G., Yang, Y., 2023. Litter quality controls tradeoffs in soil carbon decomposition and replenishment in a subtropical forest. *Journal of Ecology*. <https://doi.org/10.1111/1365-2745.14167>

Magid, J., Cadisch, G., Giller, K., 2002. Short and medium term plant litter decomposition in a tropical Ultisol elucidated by physical fractionation in a dual ¹³C and ¹⁴C isotope study. *Soil Biology and Biochemistry* 34, 1273–1281. [https://doi.org/10.1016/S0038-0717\(02\)00069-X](https://doi.org/10.1016/S0038-0717(02)00069-X)

Mitchell, E., Scheer, C., Rowlings, D., Conant, R., Cotrufo, M., Grace, P., 2018. Amount and incorporation of plant residue inputs modify residue stabilisation dynamics in soil organic matter fractions. *Agriculture Ecosystems & Environment* 256, 82–91. <https://doi.org/10.1016/j.agee.2017.12.006>

- Neupane, A., Herndon, E., Whitman, T., Faiia, A., Jagadamma, S., 2023. Manganese effects on plant residue decomposition and carbon distribution in soil fractions depend on soil nitrogen availability. *Soil Biology & Biochemistry* 178. <https://doi.org/10.1016/j.soilbio.2023.108964>
- Nunez, A., Cotrufo, F., Schipanski, M., 2022. Irrigation effects on the formation of soil organic matter from aboveground plant litter inputs in semiarid agricultural systems. *Geoderma* 416. <https://doi.org/10.1016/j.geoderma.2022.115804>
- Nyamasoka-Magonziwa, B., Vanek, S., Ojiem, J., Fonte, S., 2022. Examining the contributions of maize shoots, roots, and manure to stable soil organic carbon pools in tropical smallholder farming soils. *Geoderma* 425. <https://doi.org/10.1016/j.geoderma.2022.116049>
- Oliveira, F., Ferreira, G., Dungait, J., Araujo, E., Soares, E., Silva, I., 2021. Eucalypt harvest residue management influences microbial community structure and soil organic matter fractions in an afforested grassland. *Soil & Tillage Research* 205. <https://doi.org/10.1016/j.still.2020.104787>
- Poeplau, C., Begill, N., Liang, Z., Schiedung, M., 2023. Root litter quality drives the dynamic of native mineral-associated organic carbon in a temperate agricultural soil. *Plant and Soil*. <https://doi.org/10.1007/s11104-023-06127-y>
- Pries, C., Bird, J., Castanha, C., Hatton, P., Torn, M., 2017. Long term decomposition: the influence of litter type and soil horizon on retention of plant carbon and nitrogen in soils. *Biogeochemistry* 134, 5–16. <https://doi.org/10.1007/s10533-017-0345-6>
- Pries, C., Sulman, B., West, C., O'Neill, C., Poppleton, E., Porras, R., Castanha, C., Zhu, B., Wiedemeier, D., Torn, M., 2018. Root litter decomposition slows with soil depth. *Soil Biology & Biochemistry* 125, 103–114. <https://doi.org/10.1016/j.soilbio.2018.07.002>
- Ridgeway, J., Kane, J., Morrissey, E., Starcher, H., Brzostek, E., 2023a. Roots selectively decompose litter to mine nitrogen and build new soil carbon. *Ecology Letters*. <https://doi.org/10.1111/ele.14331>
- Ridgeway, J., Kane, J., Starcher, H., Morrissey, E., Brzostek, E., 2023b. BrzostekEcologyLab/InSitu_Incubation: Ridgeway et al., 2023 Data. <https://doi.org/10.5281/zenodo.8408435>
- Ridgeway, J., Morrissey, E., Brzostek, E., 2022. Plant litter traits control microbial decomposition and drive soil carbon stabilization. *Soil Biology & Biochemistry* 175. <https://doi.org/10.1016/j.soilbio.2022.108857>
- Schiedung, M., Bellè, S., Hoeschen, C., Schweizer, S., Abiven, S., 2023. Enhanced loss but limited mobility of pyrogenic and organic matter in continuous permafrost-affected forest soils. *Soil Biology and Biochemistry* 178. <https://doi.org/10.1016/j.soilbio.2023.108959>
- Sokol, N., Kuebbing, S., Karlsen-Ayala, E., Bradford, M., 2019. Evidence for the primacy of living root inputs, not root or shoot litter, in forming soil organic carbon. *New Phytologist* 221, 233–246. <https://doi.org/10.1111/nph.15361>

Su, Y., He, Z., Yang, Y., Jia, S., Yu, M., Chen, X., Shen, A., 2020. Linking soil microbial community dynamics to straw-carbon distribution in soil organic carbon. *Scientific Reports* 10. <https://doi.org/10.1038/s41598-020-62198-2>

Throckmorton, H., Bird, J., Monte, N., Doane, T., Firestone, M., Horwath, W., 2015. The soil matrix increases microbial C stabilization in temperate and tropical forest soils. *Biogeochemistry* 122, 35–45. <https://doi.org/10.1007/s10533-014-0027-6>

Wang, Y., Yu, Z., Li, Y., Wang, G., Liu, JJ, Liu, JD, Liu, X., Jin, J., 2017. Microbial association with the dynamics of particulate organic carbon in response to the amendment of elevated CO₂-derived wheat residue into a Mollisol. *Science of the Total Environment* 607, 972–981. <https://doi.org/10.1016/j.scitotenv.2017.07.087>

Witzgall, K., Vidal, A., Schubert, D., Höschen, C., Schweizer, S., Buegger, F., Pouteau, V., Chenu, C., Mueller, C., 2021. Particulate organic matter as a functional soil component for persistent soil organic carbon, *Nature Communications* 12. <https://doi.org/10.1038/s41467-021-24192-8>

Xu, Y., Liu, K., Yao, S., Zhang, Y., Zhang, X., He, H., Feng, W., Ndzana, G., Chenu, C., Olk, D., Mao, J., Zhang, B., 2022. Formation efficiency of soil organic matter from plant litter is governed by clay mineral type more than plant litter quality. *Geoderma* 412. <https://doi.org/10.1016/j.geoderma.2022.115727>