Litter quality and microbes explain aggregation differences in a tropical sandy soil - SUPPLEMENT

Moritz Laub[1], Samuel Schlichenmeier[1], Patma Vityakon[2,3], Georg Cadisch[1]

[1]Institute of Agricultural Sciences in the Tropics (Hans-Ruthenberg-Institute), University of Hohenheim, Stuttgart, 70599, Germany

[2]Department of Soil Science and Environment, Faculty of Agriculture, Khon Kaen University, Khon Kaen, 40002, Thailand

[3]Soil Organic Matter Management Research Group, Khon Kaen University, Khon Kaen, 40002, Thailand

Correspondence to: Moritz Laub (moritz.laub@usys.ethz.ch)

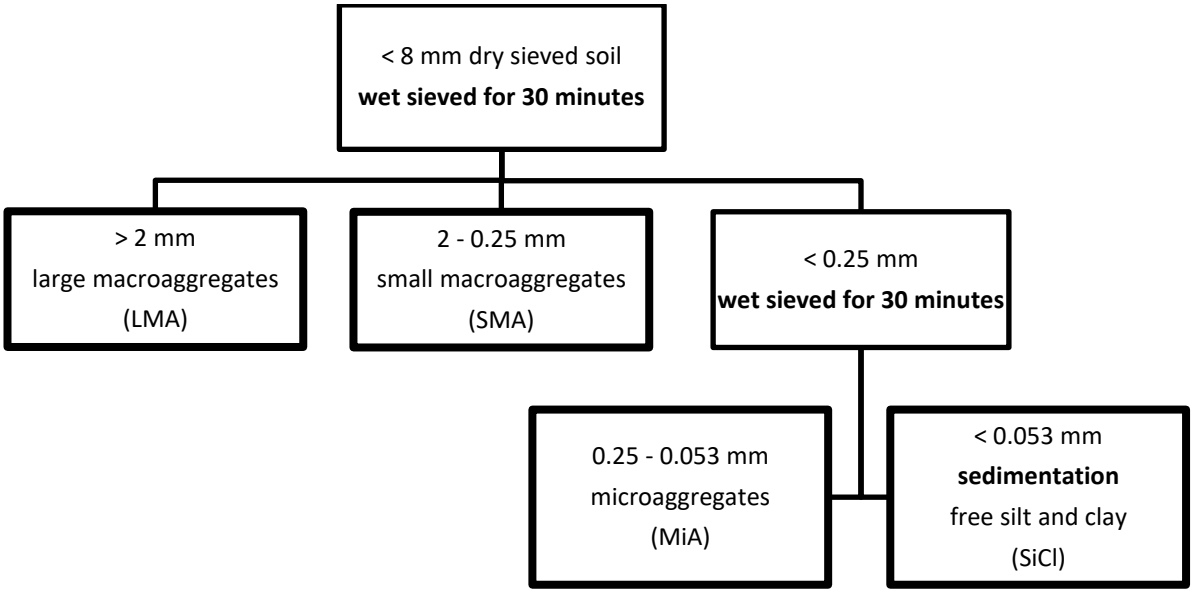

Figure S 1 Schematic representation of the size classes gained by wet sieving procedure. Four different size classes of > 2mm, 2-0.25 mm, 0.25-0.053 mm and < 0.053 mm diameter, were obtained.

S1 C/N analysis

For the recalibration of C data, a representative sample of 60 out of 360 samples, selected as a Latin square across all treatments, fractions and measurement time, was remeasured using a Vario MAX CNS (Elementar Analysensysteme GmbH, Hanau, Germany), which had also been used in the earlier studies (Puttaso et al. 2013). These measured quantities were in alignment with earlier years. Thus, a rescaling of data was done. The C contents of all samples were then corrected using the highly significant

correlation (Figure S 2) between both elemental analyzers y = 2.44x+0.11 (R^2, 0.93; $p < 0.0001$), leading to values in line with previous years (e.g. Puttaso et al., 2013; Vityakon, 2007).

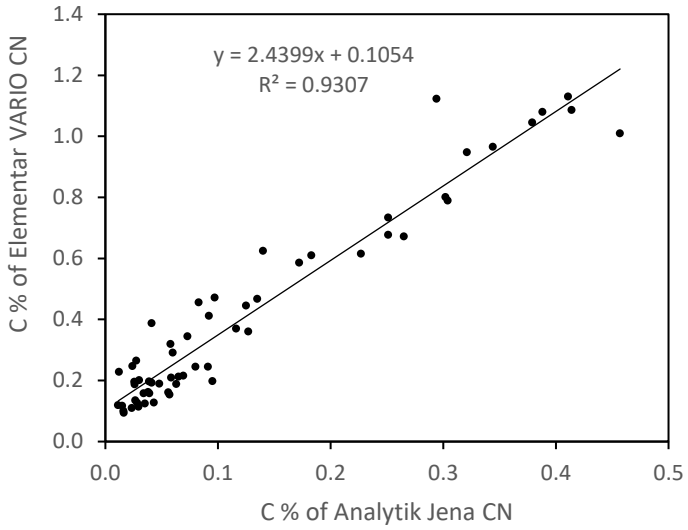

Figure S 2 Comparison of the carbon data from both elemental analyzers. Measurements of the Analytik Jena CN analyzer were transformed to match the level of the VARIO CN analyzer, to make the data comparable to the previous studies.

S2 Sand content in weight fractions

The examined soil contained high amounts of sand, approximately around 90 % (Puttaso et al. 2011). To examine the amount of sand in the isolated fractions by treatments, the sand content within fractions > 53 µm prior litter incorporation was determined by the method of Elliott *et al.* (1991)**.** Samples were dispersed with sodium hexametaphosphate followed by sieving with a 53 µm sieve.

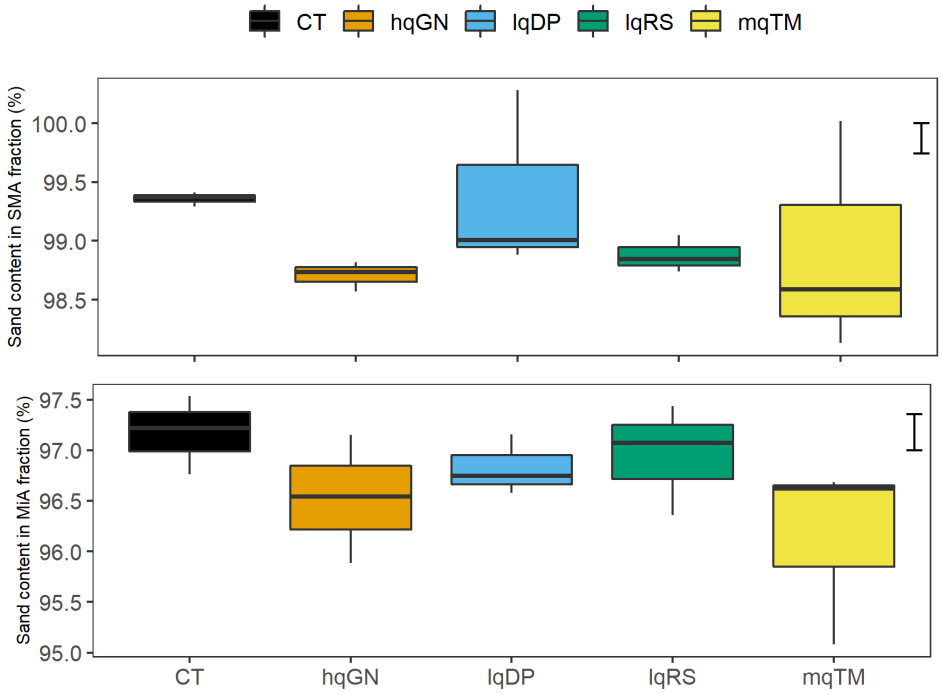

Figure S 3 Boxplots of sand content in fractions according to sand corrections conducted for samples of time 0 for the small macroaggregate (SMA) and microaggregate (MiA) fractions (n=3). Treatments were not significantly different from each other in terms of sand content. Error bars represent the standard error of the mean. Abbreviations of treatments: CT, control; lqDP, dipterocarp; hqGN, groundnut; lqRS, rice straw; mqTM, tamarind.

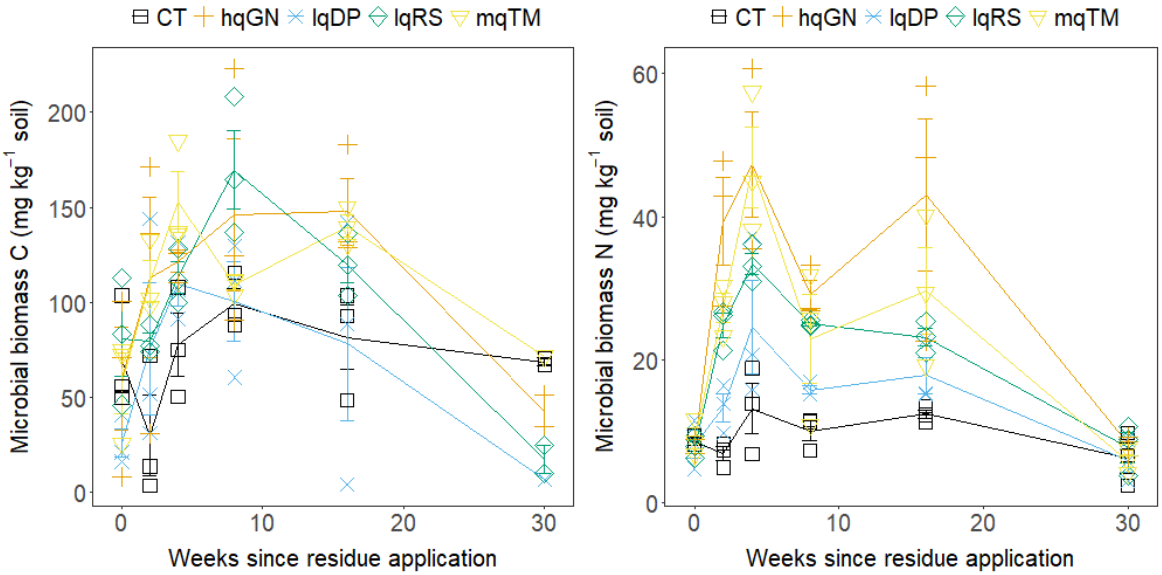

Figure S 4: Measured values of microbial biomass C and N (in mg kg^{-1} soil) at different sampling times (in weeks after litter application). Presented is the raw data, the lines representing the trend of the means by measurement time. Points display measured values whereas the line connects the mean values of treatments by time. Abbreviations: CT, control; lqDP, dipterocarp; hqGN, groundnut; lqRS, rice straw; mqTM, tamarind. Error bars represent plus and minus the standard error (n=3).

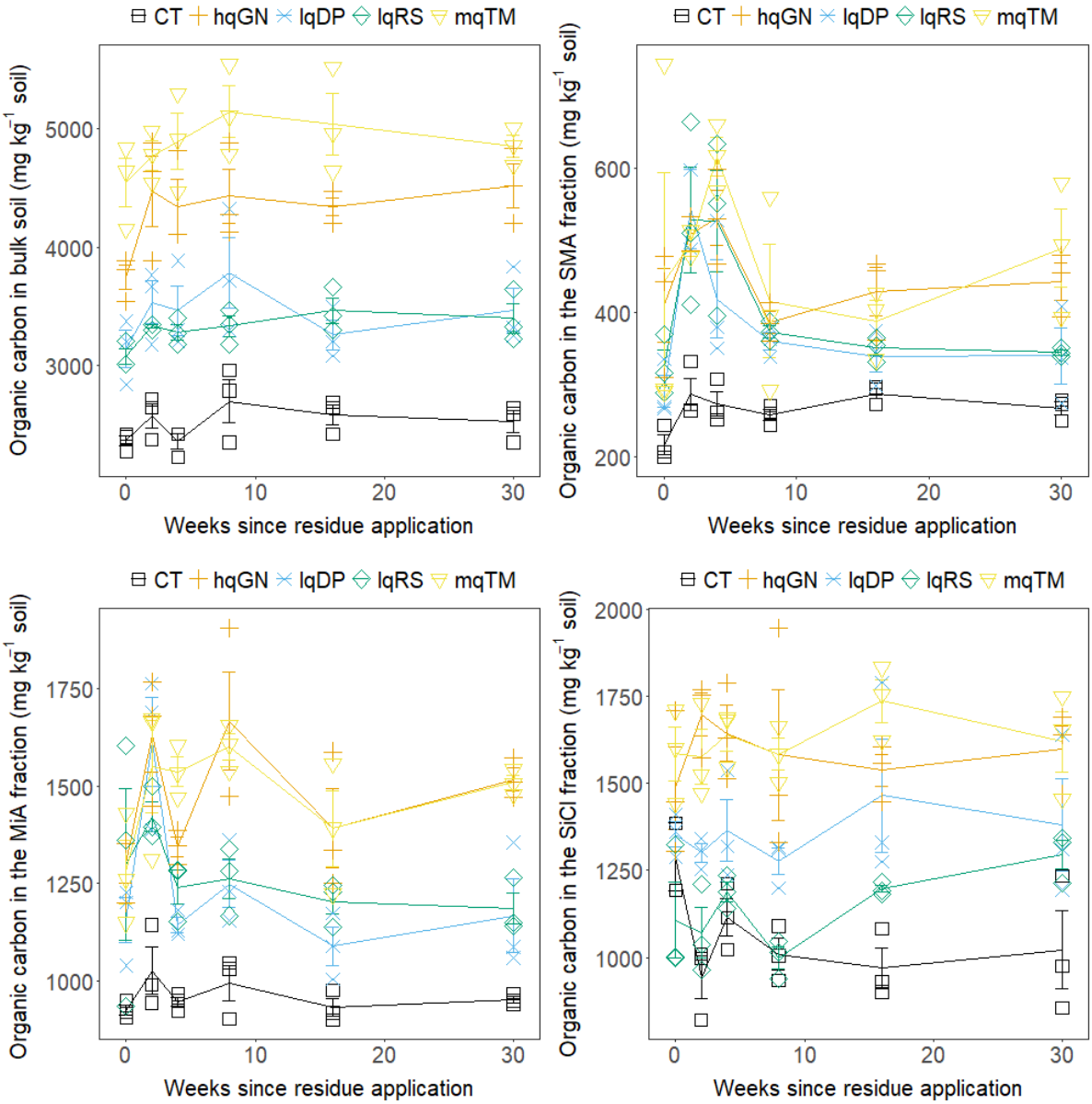

Figure S 5: SOC content as measured in in bulk soil and the different fractions (in mg kg^{-1} soil) at different sampling times (in weeks after litter application). Presented is the raw data, the lines representing the trend of the means by measurement time. Points display measured values whereas the line connects the mean values of treatments. Abbreviations: CT, control; lqDP, dipterocarp; hqGN, groundnut; lqRS, rice straw; mqTM, tamarind; SMA, small macroaggregates; MiA, microaggregates; SiCl, silt and clay. Error bars represent plus and minus the standard error (n=3).

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